

# AURAVANA PROJECT

PROJECT FOR A COMMUNITY-TYPE SOCIETY

## The Social System

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SOCIETAL SPECIFICATION STANDARD



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# THE AURAVANA PROJECT

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# GREETINGS

In an effort to provide the greatest possible clarity and value the Auravana Project has formatted the system for the proposed society (of the type, 'community') into a series of standard publications. Each standard is both a component of the total, unified system, as well as intended to be a basis for deep reflective consideration of one's own community, or lack thereof. These formal standards are "living" in that they are continually edited and updated as new information becomes available; the society is not ever established, its design and situational operation exists in an emergent state, for it evolves, as we evolve, necessarily for our survival and flourishing.

Together, the standards represent a replicable, scalable, and comprehensively "useful" model for the design of a society where all individual human requirements are mutually and optimally fulfilled.

The information contained within these standards represent a potential solution to the issues universally plaguing humankind, and could possibly bring about one of the greatest revolutions in living and learning in our modern time. Change on the scale that is needed can only be realized when people see and experience a better way. The purpose of the Auravana Project is to design, to create, and to sustain a more fulfilling life experience for everyone, by facilitating the realization of a better way of living.

Cooperation and learning are an integral part of what it means to be a conscious individual human. A community-type societal environment has been designed to nurture and support the understanding and experience of this valuable orientation.

The design for a community-type society provides an entirely different way of looking at the nature of life, learning, work, and human interaction. These societal standards seek to maintain an essential alignment with humankind's evolving understandings of itself, combining the world of which humans are a regenerative part, with, the optimal that can be realized for all of humanity, given what is known.

The general vision for this form of society is an urgent one considering the myriad of perceptible global societal crises. Together, we can create the next generation of regenerative and fulfilling living environments. Together, we can create a global societal-level community.

# THE UNIFIED SOCIETAL SYSTEM: SOCIAL SPECIFICATION STANDARD

This publication is one of six representing the proposed standard operation of a type of society given the category name, 'community' (a community-type society). This document is a specification standard for a social system.

Every society is composed of a set of core systems. Different types of societies have different internal compositions of these systems. The composition of these systems determines the type of society. The type of society described by the Auravana Project societal standard is a, community-type society. The standard is a composition of sub-system standards. The Auravana societal standard may be used to construct and duplicate community at the global level.

For any given society, there are four primary societal sub-systems. Each of these sub-systems can be specified and standardized (described and explained); each sub-system is a standard within a whole societal specification standard. The first four primary standards of the six total standards are: a Social System; a Decision System; a Material System; and a Lifestyle System. Each standard is given the name of its information system. The fifth publication is a Project Plan, and the sixth is an Overview of the whole societal system. Together, these standards are used to classify information about society, identify current and potential configurations, and operate an actual configuration. Because of the size of some of these standards, they may be split into two or more publications.

Essential figures and tables related to this standard exist beyond what is shown in this document.

*Figures and tables on the website are named according to their placement in the standard.*

- Those figures that could not be accommodated here are readily accessible in their full size, and if applicable, in color, on the Auravana Project's website [[auravana.org/standards/figures](http://auravana.org/standards/figures)].
- Those tables that are too large to include in this document are referenced with each standard on the Auravana Project's website [[auravana.org/standards](http://auravana.org/standards)].

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# Document Revision History

*A.k.a., Version history, change log.*

This document is updated as new information becomes available.

The following information is used to control and track modifications (transformations, changes) to this document.

VERSION	REVISION DATE	SUMMARY (DESCRIPTION)	
003	May 2024	The structure of this document has changed. The "Project Direction" article previously in the Project Plan has been integrated into the "Social Direction" article. The hanging concepts at the end of the previous version of the Social System have been integrated into this standard as well as the other relevant standards. There have been many additions throughout the rest of the document. The breakout boxed content has been removed and integrated into the flow of text. Many grammar and spelling corrections have been made throughout. Formatting throughout has been improved. Citations have been improved throughout and are now at APA 7th generation.	
GENERATION ON		NAME	CONTACT DETAIL
May 2024		Travis A. Grant	trvsgrant@gmail.com

# The Social System Overview for a Community-Type Society

Travis A. Grant,

Affiliation contacts: [trvsgrant@gmail.com](mailto:trvsgrant@gmail.com)

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## Abstract

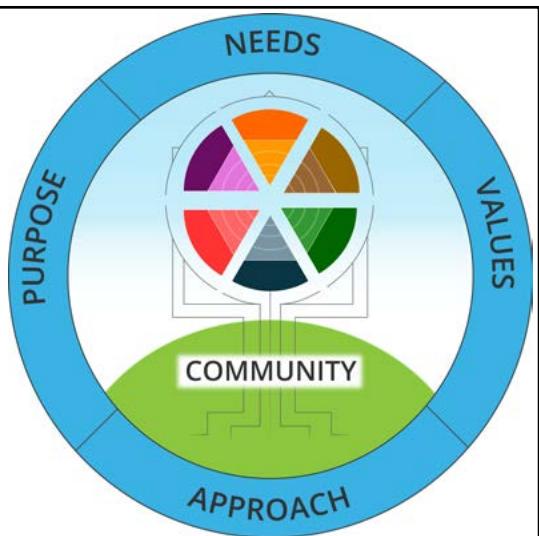
This publication is the Social System for a community-type society; it is a social system for the organized structuring of a social population. A social system describes the organized structuring of a social environment. A social system is a grouping of units of individuation (here, units of consciousness) forming a cooperative network in which information is shared and integrated through a data structure. The term social system is used, in general, to refer to lifeforms in definite relation to each other, which have enduring patterns of behavior in that relationship. This social system standard identifies humanity's aligned interests, and that which everyone has socially in common. It is an organizing system for social navigation that specifies a direction, orientation, and approach to socio-technical life. The standard details the purpose for the society's existence (a direction, 1), its value system (an orientation, 2), and its approach (a methodology and methods, 3). Herein, these concepts, their relationships and understandings, are

defined and modeled. Discursive reasoning is provided for this specific configuration of a social system, as opposed to the selection and encoding of other value-oriented configurations; consequences are evidenced. The social system provides a description of who humanity is, and where humanity is going, by identifying its social organization.

## Graphical Abstract

**Figure 1.** The social organizational model visualizes the relationships between the primary organizing conceptual understandings that lead to the formation of the proposed community. The model presents a top-level view of the social organization of the Community. It shows a community arising out of the similar organization and elucidation of four primary concepts: needs; purpose (& goals); values; and approach. Each of these concepts is a principally influential aspect affecting human behavior and social arrangements. The model is a conceptual framework that reflects, supports, and guides the emergent design and participative development of the Community. The Community itself is symbolized by the green emerging elliptical circle within the larger encompassing blue circle.

Within the Community a greater subtlety of dynamic organization and refinement of information exists, and this is symbolized by the six triangular slices representing the Community's habitat systems. These concepts and their relationships are described and modelled in this Social System 'design specification', which is a 'blueprint' for the social organization of the Community.



## 1 Introduction

---

The Social System Specification Standard details the organized structuring of the social environment; the social structuring of community. A social system is a grouping of units of individuation (units of consciousness) forming a cooperative network in which information is shared and integrated through a structure. Essentially, the social system identifies humanity's aligned interests, and that which everyone has socially in common. It is an organizing system for social navigation that specifies a direction, orientation, and approach to social organization (to humanity's socially coordinated experience). This specification standard details the purpose for the community's existence (a direction), its value system (an orientation), and its approach (a methodology and set of methods).

The social formation of a community-type society arises out of the visualization and elucidation of a set of primary organizing concepts. These concepts and their shared understanding lead to the formation of the proposed community (hereafter known as 'Community' or 'the Community'). These concepts and their relationships are defined, described, and modelled in this document, which is a "blueprint" for the social organization of community at the societal level.

A top-level view of the social organization of said society shows a community arising out of the similar organization and elucidation of three primary categories that contain four primary concepts. The category of 'direction' includes: needs, purpose and goals. The category of 'orientation' includes, values. And, the category of 'approach' includes: a methodological set. Each of these concepts is a principally influential aspect affecting human behavior and social arrangements. As a whole, the model is a conceptual framework that reflects, supports, and guides the emergent design and participative development of the Community.

Within the Community a greater subtlety of dynamic organization and refinement of information exists, detailed in the other societal specification standards (i.e., decision, material, and lifestyle).

Fundamentally, a community-type society forms out of the similar organization (definition and application) of conceptual relationships; from this recognition of commonality arises community.

**NOTE:** *A social system only continues if the people within it support it with their own behavior.*

## 2 The triality structuring of community

---

Although this specification standard may be represented [as a whole] by the Social Organizational Model, it may also be described at a high level as a triality structuring of social information sets. Together, these "awarenesses" forms a structure by which a cooperating social population can navigate a society in an existent world toward everyone's highest potential state of experience.

This specification standard is divided into three principal sections [by these three awarenesses]:

1. The Social Direction.
2. The Social Orientation.
3. The Social Approach.

A coordinated and mutual approach provides the ability to explore the dynamics of society, of cities, and of the ecology as a whole (as a complex system) through the application of various methods and modeling techniques, which provide for the potential of understanding and designing more fulfilling, more resilient, and more sustainable societies. Models and tools (e.g., instruments) that provide greater confidence in answers, verification, and understanding are identified and applied. There is a complex nature to life existence that can be understood through patterns. The design of any societal environment is built around patterns of how a population conceives of and how they use informational concepts and material space. In order to apply a common structural approach, there is the need to use common semantics and common kinds of models. Commonality among society allows for the optimization of communication and of work. A unified means of thinking and communicating is likely to generate a work environment that is commonly understandable and integratable (i.e., that everyone can commonly understand work with). Herein, all work on the societal system can be traced back to a purpose, a purpose that includes individuals and society as a whole. A single, unified way of approaching life at the societal level is essential to making everyone across the [societal] team/group more successful (i.e., more free, effective, and efficient in their work). Society may come to a recognition of the interconnection and unification of a set of universal patters (the systems approach), it may discover new patters (the scientific approach), it may clarify and understand patters (the critical approach), and it may generate and guide new patters (the systems engineering approach).

### 2.1 The three forces model

**APHORISM:** *Three by three creates complexity.*

The three force(s) model is a theoretical representation

of the three "forces" required to be present for new directional creation, including thinking. The model's claim is that at least triality must be present for directed creation to flow and for rhythm to coalesce into structure, to transform and exchange creativity in the expression of new states of organized existence.

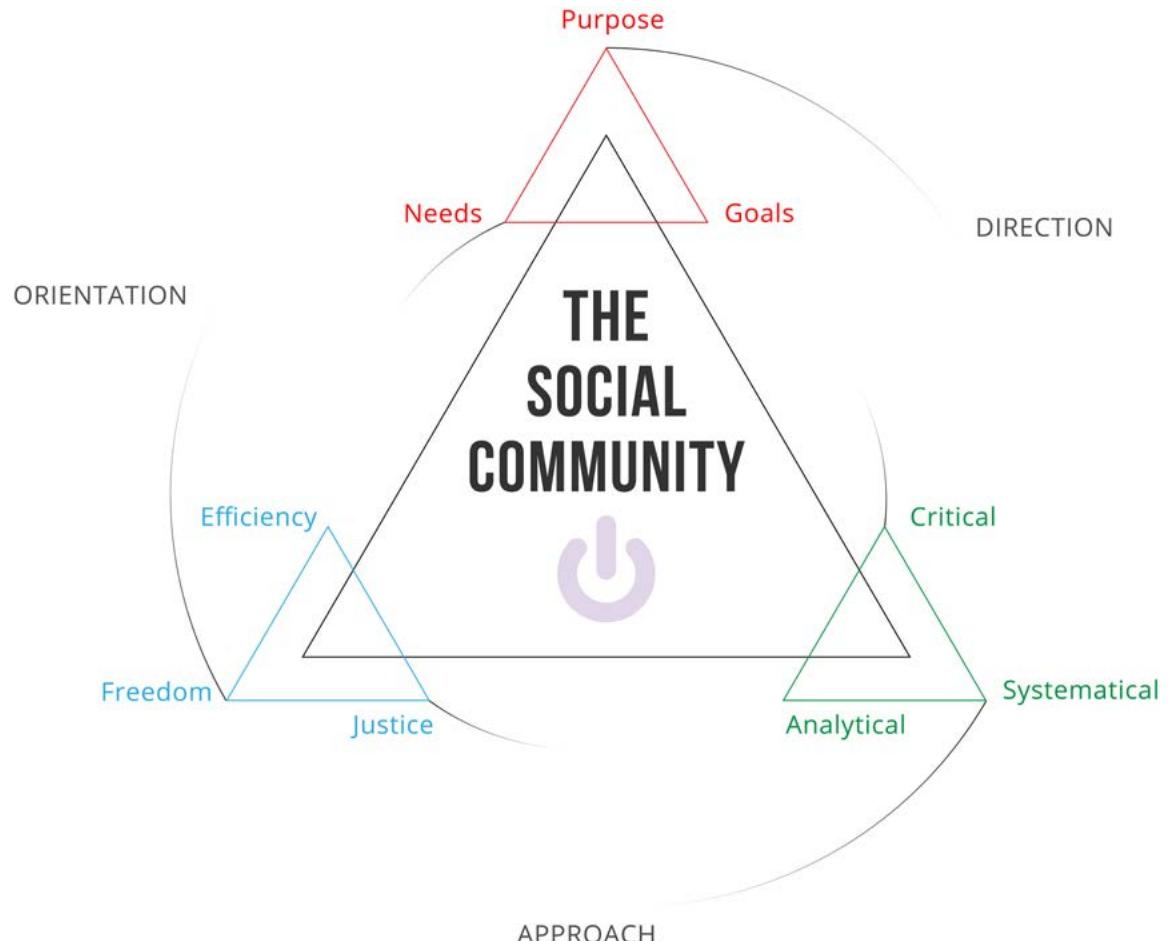
The three forces are known as:

1. **The activating force** - any force that initiates. The concept of direction fits under this category.
2. **The restraining force** - any force that limits or moderates the initiation. The concepts of qualification, conditions, and values fit under this category.
3. **The reconciling force** - any force that balances and connects the other two forces. The concepts of integration and synthesis fit under this category.

The triangle is the first formable, stable geometric structure. Also, the triangulation of coordinates is the simplest way of calculating orientation in a three-dimensional [action potential] space.

Below is an abbreviated list of the 'three forces models' involved in the design of the social organization of a community-type society. Note that some of these triality models do not fit precisely with the definitions of the three forces in the "three forces model"; they are instead stated here to show the significance of the conception of triality. The list of three forces models includes:

1. To change the dynamic (Read: active[ly changing]) structuring of a society the following concepts may be applied:
  - A. Direction (activates).
  - B. Orientation (restrains).
  - C. Approach to integration (reconciles).
2. To change the mental state of empowerment in an



**Figure 2.** The triality structuring of a the social system of community. The model depicts the social structuring of the Community in the form of a "triality of awarenesses": a direction [information] set (i.e., vectors); an orientation set (i.e., values); and an integration set (i.e., approach). At a high-level this community may be differentiated into these three "awarenesses" (or experience patterns), which are each sub-divided into three additional "awarenesses". Together, these information sets structure the whole social patterning of the Community. In a sense, the power icon within the center of the model represents the "power" of the structure of the awareness of all sensorily conscious beings among a social community of beings.

- individual the following concepts may be applied:
- Focus.
  - Language & meaning.
  - Physiology.
3. To change the approach and/or state of integration in an individual the following concepts may be applied:
- Systems approach (systems science, systems methodology, systematic inquiry).
  - Analytic approach (scientific method, analytic inquiry).
  - Critical approach (critical thinking, trivium method, critical inquiry).
4. To change the oriented state of fulfillment among a society the following concepts/values may be applied (the definition and degree of):
- Freedom.
  - Justice.
  - Efficiency
5. To change the state of intrinsically creative motivation in an individual the following concepts may be applied:
- Autonomy.
  - Mastery.
  - Purpose.
6. To change the state of a system the following concepts may be applied:
- Structure.
  - Environmental feedback.
  - Connections (or interrelationships).

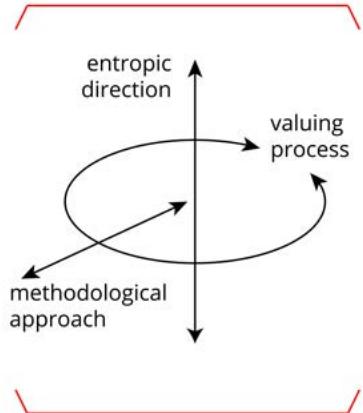
### 2.1.1 The three forces model applied to societal organization

In concern to societal organization, the three forces model shows many applications, including but not limited to:

*Note that some of these triality models do not fit precisely with the definitions of the three forces in the "three forces model"; they are instead stated here to show the significance of the conception of triality.*

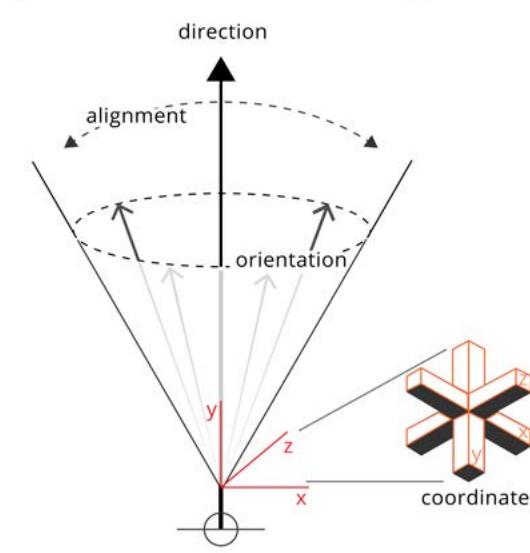
- In a system there is:
  - Input.
  - Process.
  - Output.
- In a cybernetic system, the three "forces" are:
  - Input as the activating force.
  - Process as the reconciling force.
  - Control of feedback as the restraining force.
- Alternatively, a cybernetic system could be viewed as having:
  - Input.
  - The feedback design-control process.
  - Output.
- Organisms live through the phases of:
  - Sense.
  - Predict.
  - Act.
- Organisms live through the phases of life:

### Conceptual Isolation of the Directional Orientation Model



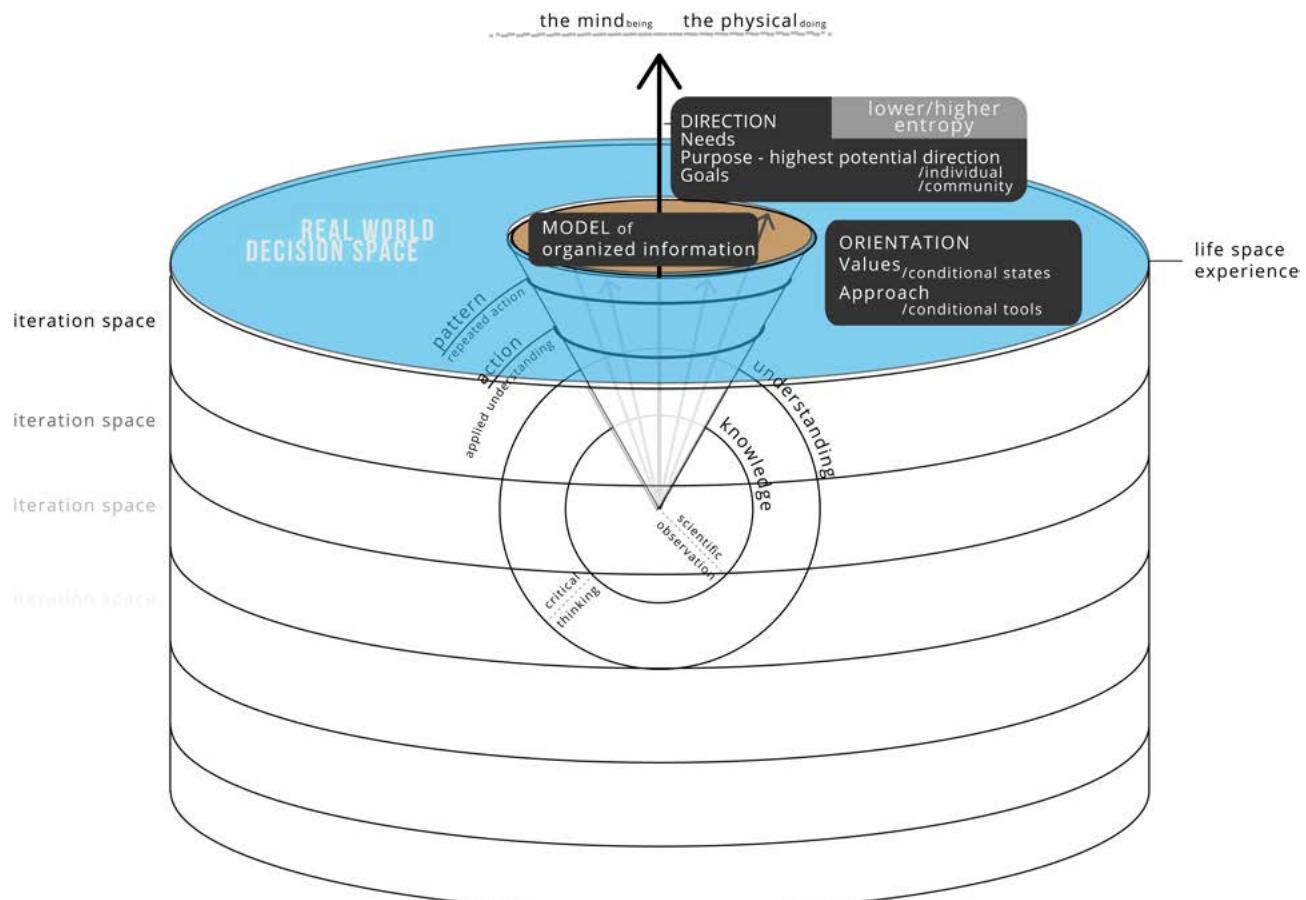
**Figure 3.** Directional-orientation model conceptual isolation.

### Spatial Orientation Through Coordination



**Figure 4.** Directional-orientation model conceptual isolation.

- A. Birth.  
 B. Living (education, contribution, leisure).  
 C. Death.
6. Humans living their best life have good:  
 A. Education.  
 B. Contribution.  
 C. Leisure.
7. Organisms project using information:  
 A. Why: purpose, given situation.  
 B. What: value, given objectives.  
 C. How to: approach, given methods.
8. In all of potential (i.e., in "source") there exist layers of fluctuating potential:  
 A. The electric field (atom).  
 B. The potential difference (interconnected rope with tension).  
 C. The fluctuation of the electric field (vibration/pulsation).
9. In electromagnetism there is:  
 A. Frequency.  
 B. Wavelength.  
 C. Photon (rope).
10. In the material there is:
- A. Chemical.  
 B. Magnetic.  
 C. Electric.
11. Within irreducible wholeness, there is:  
 A. Consciousness.  
 B. Concept.  
 C. Object.
12. The three essential parts of a circuit are:  
 A. Power (activating force).  
 B. Load resistor (resisting force).  
 C. Connection (reconciling force).
13. The essential functions of a circuit may then be broken down into:  
 A. Inductors.  
 B. Resistors.  
 C. Capacitors.
14. In motivation, there is:  
 A. Source (energy).  
 B. Flow (current).  
 C. Effort (voltage).
15. In self-motivation, there is:  
 A. Experience (felt [conscious] being); with location.  
 B. Thought (information processing); self-intelligent



**Figure 5.** Iteration applied to the model for directional-orientation.

- control.
- C. Action (physical movement, motility); self-motion in a physically interfaceable environment.
16. Motivation then exists within the complete context of:
- Self (sense of self).
  - Society (mental model of society).
  - Environment (physical conditions and conditionings).
17. In the homeostatic loop of a biological organism there is the:
- Receptor (e.g., free nerve ending).
  - The integrator (e.g., the brain).
  - The effector (e.g., a muscle or a gland).
18. In a general homeodynamic system there is:
- The environment.
  - There is a stimulus.
  - There is a response (note that feedback provides dimensionality to the experience).
19. In reality, there are three axiomatic sets to experience:
- Information (mental, concepts, abstractions).
  - Material (physical, objects, spatializations).
  - Consciousness (awareness fixation using embodiment of a [human] body, an informational-material actionable object, bio-unit).
20. In common "spirituality" there is:
- Mind (mental).
  - Body (physical).
  - Spirit (consciousness).
21. In a computing system there is:
- Start.
  - Task (process, computation, instruction).
  - End.
22. There are three distinct systems:
- Isolated system - exchanges no energy or matter with its environment.
  - Closed system - exchanges only energy, but not matter with its environment.
  - Open system - exchanges both energy and matter with its environment.

### 3 The directional-orientation model

**NOTE:** *Taking decisions is easy (relatively) when you use [at least] two compasses to guide you: your purpose (direction) and your values (orientation).*

The Directional-Orientation Model represents the relational arrangement of concepts that direct and orient an individual's decisive actions toward different states of the mental (of being) and the physical (of doing) world. The model presents a conceptual system, as a guide, for use by individuals or communities in adjusting their intentions and arriving at decisions that lead to desirable states of their world and the potential fulfillment of their total [human] being. It is a basic tool for thinking accurately, acting morally, and deciding strategically—it is a conceptual guide for decision making.

The upward arrow in the model represents an individual's or community's ultimate direction of intention, its life vector(s). A vector is an arrow (e.g., purpose or intrinsic goal). Pushing and pulling (e.g., extrinsic motivation or coercive pressuring) may lead to navigated movement, but a vector is more efficient. Herein, the vectored direction is sub-composed of three concepts: needs; purpose; and goals. Humans have needs that ultimately motivate and determine their direction toward particular internal and external states of the world. When needs are recognized and [at least] basic and psycho-social needs are sufficiently fulfilled, then a higher potential direction is likely to become visible. The higher (or highest) potential direction is conceptualized by the term 'purpose'. Individuals can have a purpose and a group of individuals can come together to form a community with a common purpose (a 'community of purpose'). For every purpose there exists an accompanying set of goals. Goals clarify how a purpose is fulfilled. Needs provide goals with their psychological potency (i.e., motivation) and influence which regulatory processes (e.g., planning, monitoring, acquiring) direct people's goal pursuits.

It is important to note that the cohesion, coherence, and consistency of a community is highly dependent upon individuals in the community selecting, organizing, and coordinating a similarly directed orientation in life.

Whereas needs direct, values orient. Values determine [someone's] orientation and exist to meet needs by coordinating decisive action using information derived from a methodical approach. An orientation in turn determines alignment: more greatly aligned with a desired direction or less in alignment with that direction. In the Spatial Orientation diagram there exists a direction and an probable orientation (represented by the dashed elliptical circle) in a non-specified alignment with the axial direction. Note that an x-y-z three-dimensional axis coordinate (a.k.a. "gizmo", "gimbal" or "metaphorical compass") is also shown in the model. Herein, the notational references "x", "y", and "z" represent a

referential framework for the directing of attention along three spatial axes.

In concern to an adaptive orientation, to get a compass pointing in the right direction, the compass has to [be allowed to] see the wrong direction. Hence the saying, "If you see where you are wrong, only then can you go right."

All decision-making at a personal level represents the process of values clarification - is this the right thing to do, the optimal action, for the good, in "my" best interests? Herein, the practice of objectively examining a personal value system is an attempt to live in authentic alignment and accordance with reality itself. Novel information and decisions lead to a refinement of an individual's value system and a potential re-orientation and re-direction.

Orientation also involves the idea of a coordinated approach, the coordination of interrelationships. Coordination involves relationships (or relatedness) at a conceptual level, which rapidly become patterns of personal behaviors, social behaviors, and also, economic behaviors.

Every action in life is approached in a particular manner with some degree of organized knowledge and understanding (i.e., information).

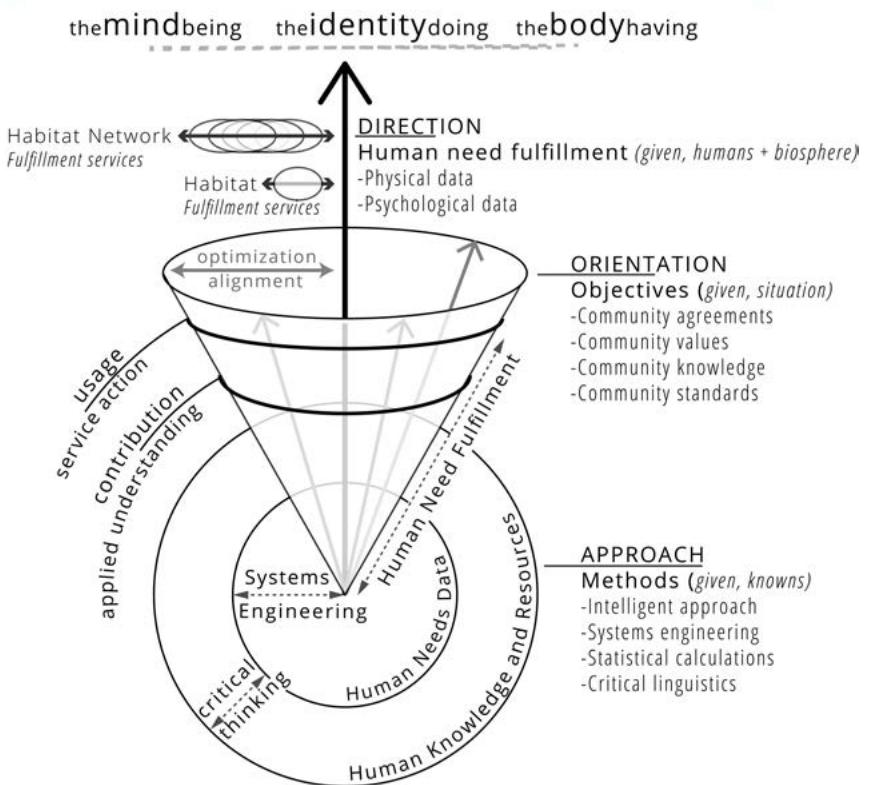
A diversity of approaches to action often lead to a diversity of end decisions (i.e., different orientational directions). Diversity within the context of decision-making may make it difficult for a community to align with a particular and desired direction, let alone identify their common needs. When individuals in a community follow different approaches to decision-making and maintain different understandings, then they are likely to arrive at divergent [directional] decisions, which increase the probability of conflict. When individuals arrive at similar decisions, then this is an indication that they have a similar direction and orientation in life. Within a system, a diversity of approaches is highly likely to turn individual against individual leading to "divide and rule"-type thought processes and behaviors.

When actions are repeated, patterns [of thinking and of behavior] appear. Patterns of thought and action, of experience, occur in an iterative manner in the real world. Repeated actions will eventually lead to greater or lesser alignment with a particular direction. Because change is

constant, patterns of action can either conditionally orient in a desired direction, such as toward a fulfilling purpose, or they can control and direct lives toward less fulfilling states of the world, more erratic behavior patterns, and an increasingly disassociated population.

Actions that orient in the direction of human need and a higher potential are derived from an aggregated integration of objective and rational information (Read: scientific inquiry and critical thinking). Therein, new understandings may modify an existing orientation and direction so that they remain in alignment with one another and with a [stated] purpose—*inquiry and integration facilitate stable adaptation*. All living systems evolve through the unbiased discovery of new knowledge and understanding derived [at least] from observation, scientific study, and critical thought. This information enables human needs to be met in a more efficient and effective manner over time. New information leads to new approaches, technologies and organizations, and hence, new social and economic systems that are known to more greatly align everyone with their highest potential. Fundamentally, however, all inaccurate models have the potential for disorientating

## The Directional Orientation Model



**Figure 6.** Applied version of the directional orientation model. Applied to a societal community building project for human need fulfillment and ecological flourishing.

their users.

**INSIGHT:** *If you have an outcome and you keep missing your target, then what do you do? What you do is that you change your approach, you re-evaluate your orientation, or you set a new target. Therein, A change in approach is likely to lead to a change of orientation (i.e., values) and direction (i.e., purpose) over time. Whereas, a change in values will immediately re-orient a new direction; though, it might only be slightly different than a former direction. One common definition of 'insanity' is doing that which doesn't work over and over again with the hope that there will be some kind of different outcome, eventually.*

### 3.1 Gyroscopic stability

In a sense, the directional-orientation model could be compared to a gyroscope. Normally a gyroscope axis points in a fixed direction (a.k.a., a fixed axis orientation); a direction informed by other dynamic elements (forces). When a system achieves the state of "gyroscopic equilibrium", then it becomes "untippable" (i.e., gyroscopically stable; without wobble). A gyroscope is a device that utilizes the principle of angular momentum to maintain a fixed axial direction (a.k.a., fixed axis orientation), and sense changes in direction. It is induced angular momentum that resists change in the rotation's direction or axis. The faster the spins of the internally arranged object, the greater its angular momentum, and the harder it is to tip over (i.e., to have its axial direction forcibly changed by environmental forces).

The idea of a gyroscope could be used as a metaphor for a common organizational structure that provides humanity with the coordinated power to remain flexibly fulfilled, and to perceive solutions along desirable axes. The axis humanity spins around is human need and preference fulfillment (i.e., the direction of spin). The next layer of potential angular [feedback/control] momentum out is society's (i.e., humanity's) values (and objectives; the orientation). The next layer of potential angular [feedback/control] momentum out is society's methods of collecting, analyzing, and deciding (i.e., the approach).

Herein, humanity may integrate changes to and information from its environment toward the maintenance of a specified direction (e.g., lower entropy in the social information system and higher fulfillment among people). Humanity may use:

1. a specific approach to integrate information from an environment, and
2. a specific set of orienting objectives (functional engineering),
3. in order to build new environments,
4. in order to maintain the cyclic frequency (and amplitude, quality and quantity) of the completion of human need fulfillment.

Practically speaking, a gyroscope is a balanced mass around an acknowledged center (central mechanical object). And, if the balance is able to be maintained, where more mass is added (i.e., more accurate information and quality human services are add), the more stable it (i.e., society) becomes.

### 3.2 An axiology

In some sense, the moral coordinating system described herein could be considered an axiology. 'Axiology' refers to the study of values and their logic, and it is primarily concerned with inquiring into and classifying what things are "good" (and fulfilling), and how they are so.

### 3.3 Diversion and division

In early 21st century society, a lot of that which is referred to as "diversity" is actually a division of common unity (i.e., division of the community), and it is not the beneficial thing that it is purported to be by politically correct mentalities; it is not equivalent to ecological biodiversity (as 'biological diversity' or 'biochemical individuality'). Biodiversity and 'biochemical individuality' are not the same thing as a diversity of approaches to common decisions within a human community (i.e., a diversity of values and approaches to common fulfillment). Note herein that the greatest barrier to overcoming any type of division is overcoming one's own indoctrination.

Biodiversity refers to the diversity of biological species in a biosphere, and it is an indication of the biological "health" of a particular ecological environment (and the functional capacity of land). A biodiverse environment is essentially a functionally information rich environment. However, a diversity of approaches to community decisions and to common heritage resources has little to do with the scientific concept of 'biological diversity'. The greater the diversity of fulfillment in the community, the greater the potential for misunderstanding and conflict. And yet, the "richer" (i.e., more accurate and plentiful) the information in the common information systems, the more accurate decisions are for real world, individual human fulfillment.

Even without malicious intent, conflict can arise in situations where an action carries different meanings when interpreted through a diversity of meaning and experience. Social diversity [of beliefs] sets the metaphorical stage for misunderstanding, mistrust, tension, and conflict. When the idea of "individuated diversity" is applied to social situations, then the conversation, which is often forced by an authority, moves into ambiguous territory where both sides may have degrees of validity. Therein, authority is presented with the opportunity to co-opt the whole conversation (i.e., the diversity of opinion) for its own agenda.

Social diversity (not biological diversity) is just as harmful as social conformity, for neither generate an emergent approach toward the optimal fulfillment of a

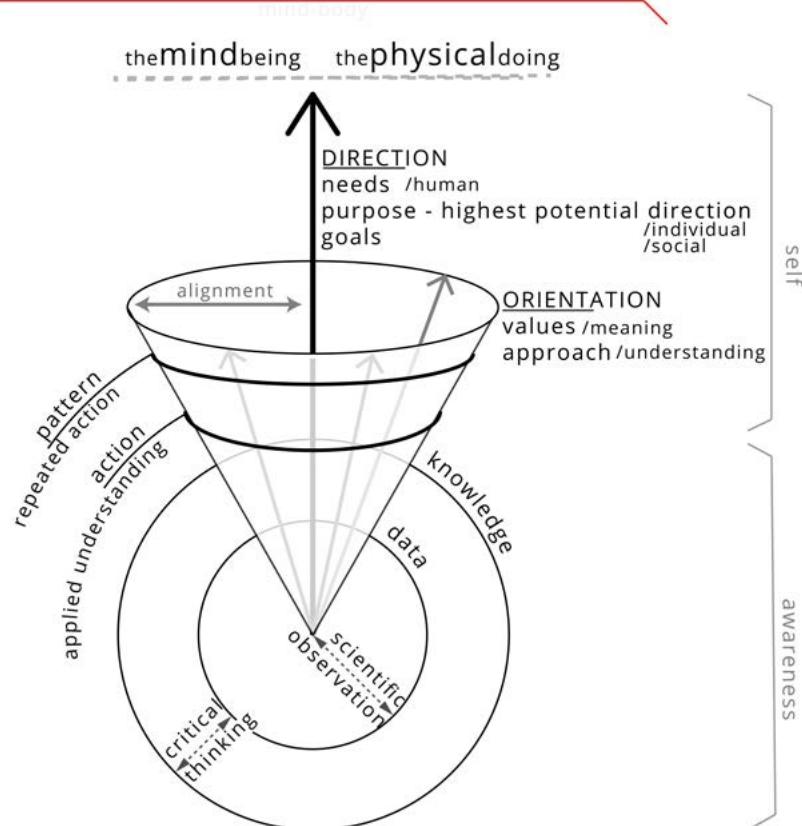
community of individual humans with common needs. Individuals in a community must remain open to moving their "position" on any issue as soon as new and more accurate information becomes available and is critically understood (i.e., emergent verification occurs). Neither the idea of "social diversity" nor that of "social conformity" maintain the condition of emergence. Social diversity is not something to be treasured, but a challenge of fulfillment-oriented coherency to be overcome (i.e., sought resolution to).

Decisions based on evidence and common need are much more likely to create a fulfillment-oriented

community than decisions based on forcing a bunch of people with different backgrounds and different skin colours to work together for the benefit of the authority.

The sociological research is quite clear, a diversity of values, beliefs, and other approaches to important decisions have a high likelihood of generating misunderstanding and conflict within a given population (i.e., the claim toward diversity at the social level becomes divisional). Therein, different approaches will lead to the selection of different decisions and the desire for the subjective allocation of common resources—social diversity is the product of and reinforces subjective

## The Directional Orientation Model



**Figure 7.** Directional-orientation model. Also known as a model of an oriented direction. The model represents the relational arrangement of concepts that direct and orient an individual's decisive actions toward different states of the mental (being) and the physical (doing) world. The model presents a conceptual system, as a guide, for use by individuals or organizations in adjusting their intentions and arriving at decisions that lead to desirable states of their world and the potential fulfillment of their total [human] being. It is a basic tool for thinking accurately, acting morally, and deciding strategically—it is a conceptual guide for societal decisioning. The upward arrow in the model represents an individual's or community's ultimate direction of intention, the life vector(s). Herein, the vectored direction is sub-composed of three concepts: needs; purpose; and goals. Humans have needs that ultimately motivate and determine their direction toward particular internal and external states of the world. When needs are recognized and [at least] basic and psycho-social needs are sufficiently fulfilled, then a higher potential direction is likely to become visible. The higher (or highest) potential direction is conceptualized by the term 'purpose'. Individuals can have a purpose and a group of individuals can come together to form a community with a common purpose (a 'community of purpose'). For every purpose there exists an accompanying set of goals. Goals clarify how a purpose is fulfilled. Needs provide goals with their psychological potency (i.e., motivation) and influence which regulatory processes (e.g., planning, monitoring, acquiring) direct people's goal pursuits. Whereas needs direct, values orient. Values determine [someone's] orientation and exist to meet needs by coordinating decisive action using information derived from a methodical approach. An orientation in turn determines alignment: more greatly aligned with a desired direction or less in alignment with that direction.

values, while continuously re-generating a subjective economic environment. And, when conflict does appear, a diversity of approaches in resolving the conflict is not helpful. In general, any approach at a community level that is not common is likely to generate conflict within the community.

**INSIGHT:** *The resolution of social issues lies in a society's evolving conversation, in learning to understand oneself and others in new and more compassionate ways.*

## 4 The purpose domain

---

*A.k.a., Direction domain.*

*The Purpose Domain's* primary function is to identify and define the purpose for the society's existence in the world, as well as detailing the goals (i.e., "task objectives") that support the fulfillment of that purpose. The purpose for a community-type society's existence is documented in the Social System specification standard. The purpose domain is part of the social organization of a community-type society. Fundamentally, a society's purpose reflects its highest level of intentional understanding. The purpose of a societal engineering project is a specific configuration of society. Society is, in part, a group of individuals relating to each other in order to achieve and preserve their common goals. A community-type societal proposal has the aim to coordinate resources in order to fulfill human needs while restoring the ecology. The objective of a community-type societal proposal is to re-imagine, and then construct, a society based on human needs (a common direction), community values (a social orientation), and an approach that clarifies understanding through visualization and facilitates greatest certainty (a technical approach).

*"The purpose of a system is what it does."*  
- Stafford Beer

In part, the Real World Community Model is held together by the central idea that a society may exist to fulfill a commonly agreed upon and intentional purpose (i.e., a "community of purpose"). This is the reason for the purpose domain's all-encompassing position in the Real World Community Model. Central to this idea is the experience that self-direction [as will or volition] is a characteristic of all forms of conscious expression in the real world. In a "community of purpose", the community exists to support the fulfillment of a commonly agreed upon and formalized direction of intention (i.e., a "purpose"). In a community-type society, that purpose is [in part] to, "continuously and consciously evolve toward a higher potential state of expressed existence while remaining adaptively resilient" -- a common intention of all consciously embodied beings.

Everyone in a community-type society, at the deepest level of their being, is interconnected by a common desire to develop and evolve toward a higher potential state of existence; herein, they recognize mutual (or "common") self-interest -- they see the relationship of the whole to its parts as well as the relationship of the parts to a whole. Therefore, community exists to maintain organizational structures and systems whose identities and relationships (including material objects and services) fulfill common human needs and facilitate directional progress toward the betterment of oneself and of all humankind.

Through the definition of a purpose humanity can come to more greatly understand its highest motivating

factors. Living purposefully is a fundamental orientation that applies to every aspect of human existence. It means that humans live and act by intention. It is a distinguishing characteristic of those who enjoy a high level of control over their life. The idea of "living purposefully" involves the self-initiative to discover the functional purpose of the [socio-economic] structure

one is either living under or continuously creating. Together, humanity may live purposefully in taking care of its needs and re-designing its structures to more effectively and efficiently fulfill those needs.

An intentionally oriented society needs to be clear of what is wanted, as well as what is not wanted. Therein, purpose is the highest-level perspective someone can

## Descriptive Isolation of the Directional Orientation Model in a Valuing Information System

Information is acquired and processed through a methodical value-oriented approach leading to changes in the overall direction of the system. The accuracy of the information and its processing will lead to an overall increase or decrease in the entropy of the total information system.

**LOWER ENTROPY**  
(More order & less randomness)

A  
"UNIT OF..."  
is a unit of information

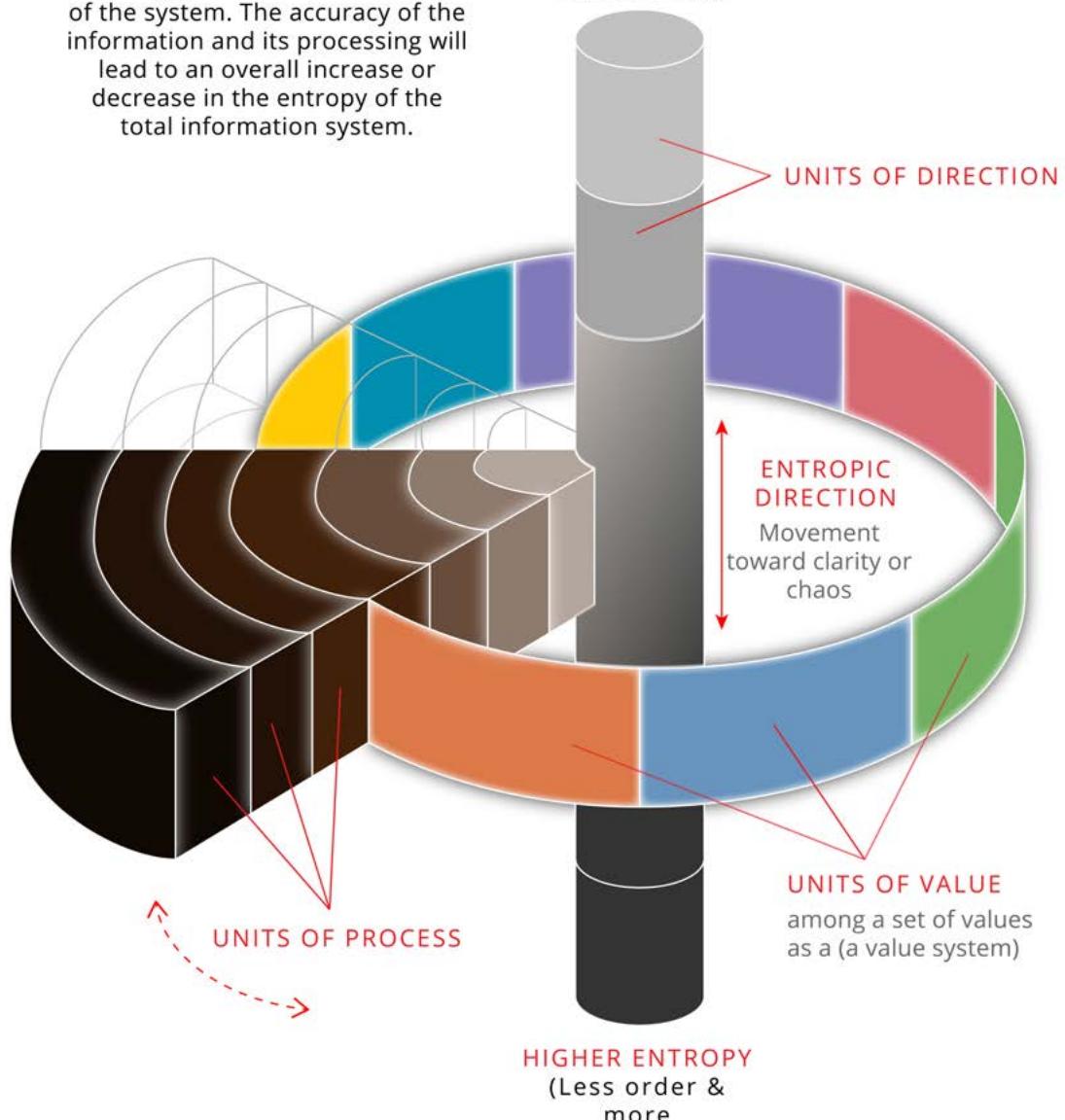


Figure 8. Directional-orientation model for a valuing information system.

have in their life and it is manifest in everything one does. If "you" don't clearly identify what "you" want, what "your" focus is, and what "your" highest level intentional attractor is, then "you" are more than likely going to get what others want to give "you". Now that humanity has a shared optimal direction, humanity no longer needs the direction of the "ruling class".

'Direction' is a simple concept, it refers to the idea of movement toward or away from that which is desired or true. A community-type society arrives at and maintains support structures that facilitate a movement toward higher individual and social potentials as a direction for everyone's fulfillment. Herein, 'goals' are applied to clarify the society's purpose and aid in arriving at purposeful decisions and desirable actions.

Once the purpose of a structure is known, then its first functional boundary and the direction it is likely to take become visible. A structure is a function, and a function is a structure (a.k.a., a structure determines function and function determines structures). Without proper structure there isn't proper function. Herein, intention is translated into function through structure. It is wise to be cautious of people who begin telling "you" what some system is without telling "you" its purpose and fundamental structure.

From a basic engineering perspective, a 'purpose' represents a description of the operational performance of a task. It represents a goal-driven approach toward the emergent awareness of a relationship between the "whys" and the "what's" in a given engineering project.

In the social domain, purpose feeds into a set of values, which become an adaptively corrective approach toward decisioning and learning; the result of which is an integrated city-system embedded within a habitat (and a host of accompanying imperatives). Wherein, production and distribution emerge based upon systematic need, sound scientific discoveries, and integrally engineered design.

In a pursuit (or a project) a purpose acts as a frame-of-reference that facilitates the better focus of "energies" and "intention" on things that serve the need or desire behind the purpose. With a focus of intention, input that would otherwise create a terrible mess in a person's psyche, can be better filtered and organized. Essentially, a purpose provides a direction for organization and for decisioning. Herein, it motivates, clarifies, focuses, and may even expand options by freeing time and energy that would otherwise be wasted on things that do not serve the desire or conflict with the underlying need.

The Real World Community Model is adaptive and emergent in its design; therefore, there is no "end goal" or "final vision" -- there is no "final purpose". Hence, the community itself exists in a state of emergence, constantly evolving and adapting to new information in the fulfillment of a purposeful direction shared by all individuals. Fundamentally, static directions (and final visions) in dynamic environments are likely to limit the fullest expression of a community's potential; they become tyrannical.

# The Social Direction of a Community-Type Society

Travis A. Grant,

Affiliation contacts: [trvsgrant@gmail.com](mailto:trvsgrant@gmail.com)

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Last Working Integration Point: *Project coordinator integration*

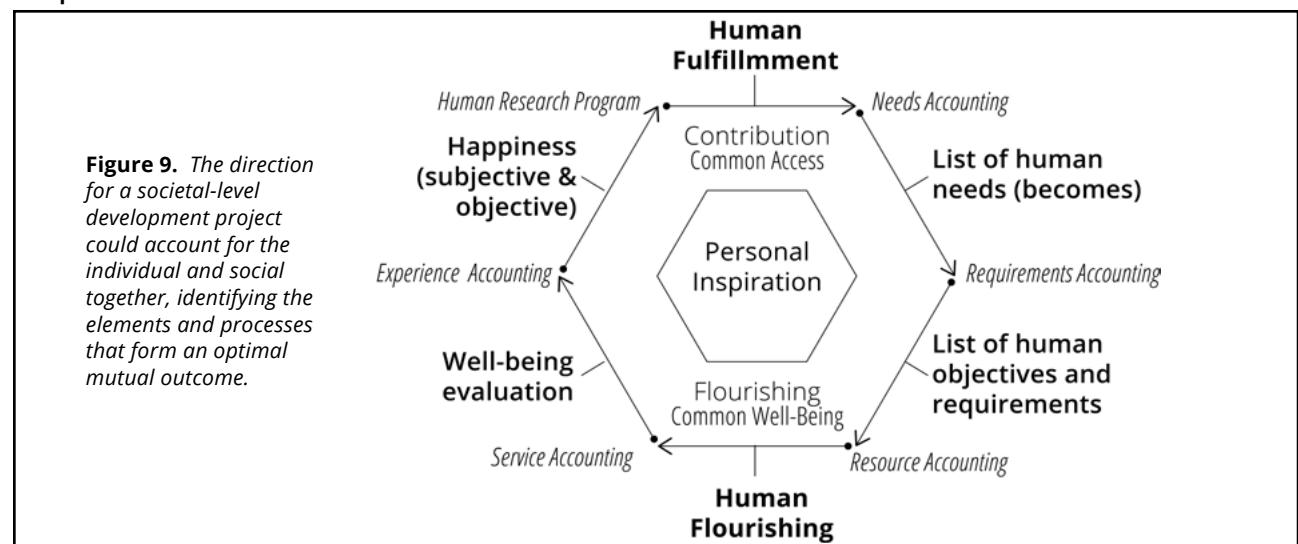
**Keywords:** social direction, project direction, social project direction, social purpose, societal direction, societal purpose

## Abstract

It is possible to engineer a society that orients toward an intentional direction. The possibility of having a direction conveys opportunity [for continued life and potential growth] within an uncertain environment. Specifying a direction allows for the evaluation of action. A direction is a description of something that can be pointed out (to another human), point towards (prior to motion), or achieved (by means of action). Therein, a direction could be viewed as an achievable place or state that requires motion on the part of an entity (or entities). For consciousness, a direction is a desire to move toward an object or state of being, doing, and/or having. Direction is determined[/-able] by knowledge and decisioning; wherein, direction is a choice. The direction of a community-type society is a direction commensurate to humanity's current potential. Humanity has the knowledge and ability to meet the requirements of mutual, global human fulfillment. The human living system can be categorized according to those elements

that may be prioritized according to their requirement. The highest level of requirements is that which humans need. Individual humans have well-being, or some degree thereof. The criteria for well-being and life's access potential must be explicated in order for global human fulfillment to be executed. Global human flourishing is possible when well-being is accounted for at the global level of society.

## Graphical Abstract



# 1 Social project direction

**APHORISM:** *To move without direction(s) is folly. When the self moves intentionally in a direction, then there is self-direction.*

The possibility of having a direction conveys opportunity [for continued life and potential growth] within an uncertain environment. Specifying a direction allows for the evaluation of action. A direction is a description of something that can be pointed out (to another human), point towards (prior to motion), or achieved (by means of action). Therein, a direction could be viewed as an achievable place or state that requires motion on the part of an entity (or entities). For consciousness, a direction is a desire to move toward an object or state of being, doing, and/or having. Direction is determined[/-able] by knowledge and decisioning; wherein, direction is a choice. A direction points an entity (e.g., human, population, vehicle) toward one spatial or informational orientation versus all others (i.e., versus all other possible directions). Often, a direction is described in the form a result or a gap. In order to get to the result or overcome the gap, decisions(determinations) and actions(motions) are required. A direction is a description of a preferred future state for an organization (or population).

When there is motion, there is always direction. When there is facing (non-uniform positioning), there is always direction. A direction is always relative to another directions. Hence, fulfillment can either be moved toward as the direction, or it can be moved away from as the direction. In geometry, this is known as direction's relative angle. In geometry, a direction is a vector where length is irrelevant (i.e., a direction is a vector of unit length, or of length '1' unit).

A direction can be sensed (i.e., pointed out) and signified (i.e., reasoned why). If that which is being moved toward cannot be sensed or signified, then it is not a direction. In mathematics, motion toward a direction is often called a vector. A vector is a value and direction. To an observer, direction becomes visible through motion, explained through visualization. Motions can be coordinated through tasks. Tasks can be coordinated through decisions. And, decisions can be coordinated through a unified information organization.

We all share a desire for individual human fulfillment. And, we (the population) require information about ourselves and our environment in order to design and to actualize our highest potential fulfillment. The life conception of humans is that of a commonly identifiable set of life needs that become complete by means of contextual requirements. The most sensorily comprehensive of which is "well-being".

In community, "we" contribute our work in service to facilitate in the recognition of our common selves and the fulfillment of our commonly greatest potentials, given our embodied human consciousness. We all share a desire for individual human fulfillment. The highest level of human [habitat] fulfillment-oriented sharing becomes

known as the InterSystem [Habitat Service System] Team, which operates the Habitat Service System. The habitat service system coordinates the fulfillment of "our" embodied individual-human, conscious selves.

The population ("we") needs information about itself ("we") in order to design and to actualize our highest potential of fulfillment. Without design, the probability of our actualization being of the highest potential will be less certain. The life conception of humans having a commonly identifiable set of life needs that become complete by means of contextual requirements. The most sensorily comprehensive of which [to consciousness] is well-being. The direction is largely summarized in the overview section. The direction in executed by a decision the direction is one of decisioning of taking decisions. The direction is, in part, the approach to life as a decision (or series of decisions) that produce, more or less, of what is meaningful in life. What is meaningful is the direction, and to get to the result decisions are required. Thus, the direction is of accounting not only for what humans are surveyed to require, but also the configurations that swerve the requirements.

Humans can decide for well-being at the objective societal level, as a direction in their lives. All humans all share a desire for individual human fulfillment. And, all humans (the population) require information about themselves and their environment in order to design and to actualize their highest potential fulfillment and self-actualization. The life conception of humans is that of a commonly identifiable set of life needs that become complete by means of contextual requirements and effort to resolve, informationally and physically, those requirements. The most sensorily comprehensive of which is well-being, at the social scale there is flourishing, and at the individual scale their is happiness and flow. Flourishing means something living to its highest potential.

A humans desire to flourish. A necessary condition for large scale flourishing is the development of a real-world model for structuring and coordinating well-being enhancing designs that scales up globally. Societal engineering is uniquely positioned for assisting populations with their flourishing in a way that is effective, efficient, and scalable. Societal engineering involves the study and development of information and spatial (technology) systems that is consciously (intentionally) designed to support (servicing) people's psychological and physiological flourishing in a way that enables individual preference without disabling the fulfillment of all human need. There is a common baseline of technical efficiency and human need fulfillment underlying a society with wherein individual have freedom of preference on top of (i.e., after in priority) fulfillment of need. Note here that to some extent there is a category error visible when comparing needs and preferences. Needs are categories relevant to the life of all humans, whereas preference are relevant to the contextual life of any given individual human. Preferences are not life requirements, although the structure that allows for

their expression may.

For this project, the direction is largely summarized in the overview section of this document. The following sections provide a detailed view of the direction. The project's direction takes form through an approach (methods). The direction is executed by teams. The direction is informed by knowledge. The direction is resolved into action by means of decisions, that is discovered and integrated by working groups. The direction is resolved into action by means of an algorithmic decisioning structure.

The direction of this project is, in part, an approach to life that involves a series of decisions that produce more of what is meaningful in life. What is meaningful in life is described as a direction. Thus, the direction is of accounting not only for what all humans are surveyed to commonly require, but also the informational and spatial configurations that serve the requirements. Humans can decide for well-being at the objective societal level, as a direction in their lives.

One of the first objects for understanding the concept of spatial direction is a 'compass'. A compass is an instrument used for navigation and orientation that shows direction relative to the geographic/spatial cardinal directions (or points). A compass rose is a design on a chart (i.e., a direction) that shows direction. In other words, a diagram called a compass rose shows the directions north, south, east, and west on a compass face or chart. A compass 'bearing' tells an observer the direction of travel on Earth. A navigator on Earth should be able to visualize the 360° circle of directions and the [four primary] cardinal points. Ordinal directions refer to the directions found equally between each cardinal direction. These are northeast (NE), southeast (SE), southwest (SW), and northwest (NW).

**INSIGHT:** *Life has purpose; it does have direction -- there is an arrow in the forward direction called "positive" evolution (Read: lower entropy, more love and flow, more intelligence and sustainability), and one in the opposite direction called "negative" evolution (Read: higher entropy, more trade and power-over-others, more competition and scarcity). Each individual, and all individuals together, as society, can and ought to "positively" evolve. Together we can be a lot more; together there is synergy.*

A document that addresses the human needs for Earth's biospheric occupation humanity, identifying:

1. The requirements needed to support human health. Examples include: medical care, nutrition, sleep, and exercise.
2. The requirements for system design that will maintain human safety and promote performance (i.e., "human factors, habitability and environmental health). Examples for this volume include: a design of the food facilities, bathroom design, a

layout of workstations, seating and crew restraint design, lighting requirements, and environmental requirements.

Life doesn't just have to remedial in the case of minimizing suffering; humanity can design for more than not to suffer. Humanity can design for individual well-being and social flourishing. Well-being can be built at the individual and social level. The standard for measuring well-being is flourishing. One of the goals of society is to increase flourishing, to increase well-being among a population. Life-satisfaction operationalizes (is defined by) happiness. Happiness operationalizes life-satisfaction (positive appraisal). Human needs underlie survival and well-being, and well-being underlies happiness (life-satisfaction). Life satisfaction is someone's global stated feeling of one's own life [experience].

The flourishing individual is able to create the flourishing life by building on various components of well-being. The flourishing society is able to create a flourishing population by building on the various components of human need fulfillment (organized by service system for individual fulfillment).

The current goal of well-being, as an intentional direction, is to measure and to build human flourishing through optimal fulfillment of needs, leading to ever greater states of sufficiency, flow, and appreciation. Achieving this goal starts by asking what do humans need and what really makes a human satisfied, happy, well, and flourish? An individual is flourishing and optimal when they're meeting all their needs (at some particular threshold).

Huppert et al., (2013) operationalized (i.e., defined measurably) flourishing to have a set of core "features" (sub-components):

1. Positive emotions.
2. Engagement.
3. Interest.
4. Meaning.
5. Purpose.

And, a set of additional components\* ("features"):

1. Self-esteem.
2. Optimism.
3. Resilience.
4. Vitality.
5. Self-determination.
6. Positive relationships.

\*Note that this categorization is similar to the Diagnostic Statistical Manual of Mental Disorders, DSM).

The following are the ten sub-operationalizable components of 'flourishing'; [how is] Flourishing is to be increased in one's own life and on the planet (Huppert

et al., 2013):

**Table 1.** Indicators of the operationalizable components of the conception of flourishing.

Useful (Positive features)	Item used as indicator
Competence	Most days I feel a sense of accomplishment from what I do.
Emotional stability	(In the past week) I felt calm and peaceful.
Engagement	I love learning [new things].
Meaning	I generally feel that what I do in my life is valuable and worthwhile.
Optimism	I am always optimistic about my future.
Positive emotion	Taking all things together, how happy would you say you are?
Positive relationships	There are people in my life who really care about me
Resilience	When things go wrong in my life it generally takes me a long time to get back to normal. (reverse score)
Self-esteem	In general, I feel very positive about myself.
Vitality	(In the past week) I had a lot of energy.

The following criteria allow for the population of a flourishing scale for the individual (Schotanus-Dijkstra, 2016):

1. I lead a purposeful and meaningful life.
2. My social relationships are supporting and rewarding.
3. I am engaged and interested in my daily activities.
4. I actively contribute to the happiness and well-being of others.
5. I am competent and capable in the activities that are important to me.
6. I am a good person and lead a good life.
7. I am optimistic about my future.
8. People respect me, or think I am a good person.

**QUESTION:** What is a direction that can be shared by all of humanity for the mutual benefit of all of humanity? The completion of all human requirements for all of humanity is that direction. In other words, a societal system designed to meet all human requirements is a sustainable and mutually beneficial direction. Is society, its present structure and configuration, helping humans flourish? By how much (or, how little) will this structure, object, device, or program increase or decrease flourishing?

## 1.1 The direction sub-composition

**QUESTIONS:** What contributes to well-being? What vision do we want for ourselves and our planetary human community? Do our thoughts and action to a healthy and caring socio-technical environment?

The direction of a happy and flowy life experience is most well characterized (given what is currently known) in the literature as (the decomposition of the direction of):

1. **Flourishing.**
  - A. Well-being (social cycles).
    1. Life satisfaction.
      - i. Feeling happiness.
      - ii. Observing completion of wellness.
2. **Fulfillment.**
  - A. Needs (material cycles).
    1. Quality of life.
      - i. Feeling whole/complete.
      - ii. Observing completion of needs.
3. **Flow.**
  - A. Flow triggers (flow cycles).
    1. Feeling flow.
    2. Observing high performance.

Direction indicates potential. Wherever there is an opportunity, a decision at the fundamental level, there is potential for growth. The elements of a growth potential, happy and flowy, life experience are (at least) resolved through the following inquiries?

1. What are the opportunities? Number and type and availability of desired life enriching and life contributing opportunities.
2. What are the conditions? Qualities
3. What is the functioning of the service (city)?
4. What, how, are, there human needs, demands, and requirements being fulfilled (i.e., completed, met, satisfied)?
5. What, how, is, there human well-being among all individuals in the population (i.e., flourishing)?

In order to have true social growth, there must exist a functional global habitat within a set of constructive human relationships.

The basic elements of functional human habitat design include:

1. **Need** - Humans have (to thrive and survive).
2. **Demand** - Users of habitat service system have (to thrive and survive).
3. **Means** - Habitat service system and its contributors, information systems have methods (to facilitate thriving and surviving).
4. **Geo- and atmos-spherical elements** - spatial material resources for living (may facilitate thriving and surviving).
5. **Info-spherical elements** - informational and computational resources for living (may facilitate thriving and surviving).

The environment changes an individual's life circumstances, and an individual's intention changes the environment:

1. We go into flow when our highest strengths (skills) are deployed to meet the highest challenges we experience in our environment.
2. The way we choose our life course often has to do with maximizing how we feel.
3. The way we choose our highest course in life is to maximize all five elements of well-being.
4. The way choices are made is to estimate how much happiness (or life satisfaction) will occur, and then we take the course that maximizes future happiness. Maximizing the feeling of happiness is a common path of individual choice.

The types of 'constructive' relationship:

1. Fulfillment (social & technical)
  - A. Needs, life needs, human needs.
    1. Gaps and goals (in outcome) are measurable
2. Flourishing (individual & exploratory)
  - A. Well-being, happiness, life-satisfaction.
    1. Elemental states of feeling are measurable.
3. Surviving (organismal & life)
  - A. Material constituents, informational and spatial.
    1. Spatial and informational resources are measurable.
      - i. Spatial - an 'object' is anything with shape.
      - ii. Informational - a 'concept' is anything with meaning.

Human flourishing is composed of:

1. Internal state of specific conditions involving
  - A. Internal Human Feelings (positive, well)
  - B. Internal Human Abilities (competent, capable)
2. External
  - A. External Human Conditions (availability, sufficient)
  - B. External Human Resources (availability, access)

The measurability of wellness:

1. Elements involving subject and objective components are measurable.
2. Fulfillment of elements is well-being for an individual.
3. Well-being among social population is flourishing (thriving).

A flourishing life is a life where environmental resources and personal abilities are cultivated to produce growth, adaptation, appreciation, and inclusion. Humans flourish when they have [need] fulfillment.

**NOTE:** Many aspects of human behavior do not change lastingly unless the environment is also changed.

### 1.1.1 Engineering a societal direction

**NOTE:** Strategic planning is the creation and/or selection of a long-term direction.

Given the multifaceted nature of the human direction, various measures cannot be assumed to be substitutes for one another. Different measures may provide divergent conclusions about the well-being of individuals among the population. Thus, the choice of measures should be an informed decision.

From an engineering perspective, there are multiple conceptual inquiries that need to be resolved to appropriately engineer a healthy self-directed and need-oriented society:

1. **Structure** - what are the major components of how society is to be well organized and oriented, and how do they relate to one another.
2. **Frequency** and **intensity** - what is the frequency, duration, and intensity of informational and/or spatial composition that compose a well society.
3. **Stability** and **consistency** - is there enough temporal stability and spatial consistency to enable health, safety, contribution, flow and exploration.
4. **Affect** and **cognition** - is there enough recognition, meaning, intrinsic motivation, clarity of thought, and precision of language to enable social cooperation (participation and contribution).
5. **Patience** and **resilience** - is there enough ability to de-prioritize ("sacrifice") entertainment and comfort for other values when appropriate.

### 1.1.2 Flow cycle integration

**APHORISM:** If you want to make a better world, you should alleviate the circumstances that produce bad actions, rather than punishing bad behavior and rewarding good behavior. Science must isolate the conceptions and situations that produce the conditions for suffering, crime, ignorance, and other failures, so that these situations can be corrected. The material isolation tirade of (identify, isolate, and remove) has some relevance here. Whereas conditions that promote suffering are identified, isolated, and removed from the next iteration of society; the conditions that promote well-being are identified, integrated, and actualized in the next iteration of society.

Flow is fundamental for well-being and overall life satisfaction. People who score off the charts for life satisfaction are those that have the most flow in their lives. The experience of flow can be built and enabled; it can also be reduced and disabled. Flow is optimal

performance, and a healthy flow cycle regenerates and builds greater performance. Experiencing flow regularly is essential in achieving happiness for those who know what flow is and/or have experienced flow previously. Society ought to be directed to produce more flow in the lives of individuals, particularly since flow is optimal for the individual and the individual is the source of all structure in society.

Flow triggers facilitate flow. Autonomy facilitates flow; autonomy is a flow trigger. All individuals are an individual self and therefore are self-directed and will pay more attention and perform better at activities that are freely chosen by the self ("autonomy"). Individuals get to choose what they do with their time and energy, and thus, society facilitates the individual experiences of flow.

Time for uninterrupted concentration is necessary for flow. People need personal space and access to experience flow. Additional, flow emphasizes real world engagement with an activity, and not artificial mediation (e.g., study-cramming for a test).

### 1.1.3 The InterSystem Team and the alignment of operationalizing values with human flourishing, fulfillment, and well-being

**NOTE:** An 'operationalizing value' is a value that is encoded within decisioning, often in the form of an objective or requirement for the result of an operational decision (i.e., a decision that affects the operation of society).

The InterSystem Team operationalizes society as an engineered system (i.e., the intersystem team does the work that sustains habitat life). In particular, the societal engineering of community involves aligning design with mutually beneficial values (i.e., mutual success principles) such that InterSystem Teams are operationalizing the best society possible given what is known and available:

1. **Mutual access** [to all of the best designs that humanity has to offer] - InterSystem team/society shall design system that enable all humans to have access to mutually coordinated, global, habitat services.
  - A. Note that in the market-State there is also the idea of "human rights". In that type of society, the additional principle of a "right" is necessary because of the integration of the market and the State as extant, reified entities. Market-State services shall be created and operated to respect, promote, and protect inter-nationally recognized human rights. In community, this idea is subsumed by the global access principle.
2. **Flourishing** - InterSystem Team shall adopt increased life flourishing (and related concepts) as a primary success criterion for physical

- materialization and society.
- 3. **Well-being** - InterSystem Team shall adopt increased human well-being as a primary success criterion for physical materialization and information interface.
- 4. **Self-direction** (autonomy) - InterSystem Team shall empower individuals to take self-direction over their lives and potentials.
- 5. **Effectiveness** (safety) protocol - InterSystem Team (i.e., society) shall provide evidence of the safe and effective operation (or potential operation) of society.
- 6. **Transparency** - The social objective basis for a particular societal decision shall always be traceable or discoverable.
- 7. **Accountability** - InterSystem Team shall be created and operated to provide unambiguous rational for all decisions taken.
- 8. **Awareness of situation** - InterSystem Team shall maintain awareness in memory of current, and relevant past, informational situation, while processing that information in the presence of risks.
- 9. **Competence** - InterSystem Team shall specify and operator shall adhere to the knowledge and skill required for safe and effective operation.

**INSIGHT:** Human flourishing answers the question of what it means to live life well. In other words, the question asks, What does it mean to live life well?

## 2 Human need fulfillment

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*A.k.a., Human flourishing, human thriving, human well-being, human welfare, human happiness, human prosperity, etc.*

Through fulfillment comes well-being and flourishing. Human flourishing through sufficient fulfillment could be considered a societal supra-task. Humankind ("we") needs material objects (things) and specific conditions of the real world to survive and thrive. A shared feeling of human individual fulfillment comes from progress toward the achievement of meaningful goals and the experience of necessary conditional states in the real world. Together, individuals can have a common set of meaningful goals for living together in a 'society'. In society, goals are prioritized, with 'needs' (or, human requirements) being of first or top-level priority. Human fulfillment is a possible direction of society, and is the defined direction of a community-type society.

Synonyms for the direction of human [need] fulfillment include:

**In the format:**

Direction concept (*the contextual application*)

1. Fulfill (*the need requirement*).
2. Meet (*the objective requirement*).
3. Satisfy (*the objective criteria*).
4. Achieve (*the objective goal*).
5. Complete (*the performance, task*).

An organization is aligned ("good") or out of alignment ("bad") relative to the degree to which it enables the comprehensive satisfaction of life-requirements. Human flourishing is the highest alignment, and universal human suffering is the lowest alignment, satisfaction-fulfillment of life requirements. Here, societal [fulfillment] stability is synonymous with the experience of individual satisfaction in life.

Just because something is 'true', that doesn't make it 'good'. Truth is about "what is", and good is about "what ought to be done to have global well-being". The way to ascertain and maintain well-being is via the truth of how human beings are fulfilled and experience wellness.

**QUESTIONS:** *What is required for living a full human life, a life of fullest human potential? How do we increase our well-being, and more greatly flourish?*

### 2.1 Shared individual human need fulfillment

**NOTE:** *Fulfillment, a helpful direction, must be defined to lay the foundations of a well society.*

Human need fulfillment is a common requirement of all human individuals. What is shared is a set of

common needs and a desire for individual fulfillment; because, each consciousness is individually embodied, which entails a set of requirements (cause and effect relationships) given the body, mind, and its environment. Individuals are active participants in their own fulfillment, regardless of whether they actively arranged outside conditions to fulfill a need by themselves or another person or system did it for them. In the real-world, needs and their implications, shape decisions and outcomes. Needs are related to the survival and thriving of a base operating system for the human experience, for every common individual.

Humans are synthetically organic-social. To be human is to be a member of a species with [abilities composed of] an organic-psycho and a psycho-social dimensions. Both the human body and social self-consciousness have ongoing natural conditions of existence and development. The natural problem of a persistent human life (i.e., how to survive), becomes the social problem of how to live well, together, with others (given, what is available). In a social system, "fairness" plays a crucial role in the quality/condition of fulfilling multiple basic human needs. In this sense, organizational/distributive justice (or, just efficiency) may become the optimally reasoned logic for fairness.

**INSIGHT:** *When life isn't about fulfillment, then it can all too easily become about something else.*

What keeps an individual fulfilled throughout their life, in the long-term? Maybe becoming something to be proud of. Maybe something that has been or is being created. Maybe the experience of growth and contribution. Maybe inquiry and the exploration of novelty. Maybe individuals are fulfilled through the feeling of continuous and coherent self-development - a sense of growing relatedness, of autonomy, and of competence in life. Maybe appreciation and consideration for the evolving whole represent a higher potential for fulfillment (also sometimes spelled as fulfilment). Maybe the act of questioning, or of openly inquiring, regenerates a sense of fulfillment. Maybe an environment where technology is applied to free all of humankind from the anxiety of chronic impulsivity and uncertainty, from a state of simple and programmed reactive survival. When individuals see themselves in another and they choose to cooperate and to share, then maybe they can organize a common social approach toward the arrival of decisions and actions that strategically fulfill everyone. Maybe, humanity could apply its resources and understandings toward the highest fulfillment of all - to free all humans for what is meaningful - to have all human needs sufficiently fulfilled (i.e., sated or "met") as all individuals progress toward a higher potential of life experience and self-expression. Fundamentally, fulfillment is the process of meeting needs (i.e., completing the need cycle on some required basis). Thus, a fulfilled society is a society of recognized needs, and not of unrecognized fears. In the real world, there exist commonalities that remove

the illusion of separation between all of humanity. A deficiency of fulfillment is not a state (or, condition) any individual wants.

Fulfillment is experienced in the moment as engagement in something for the joy of doing it (i.e., intrinsic joy, play). It is the experience of presence in something viscerally meaningful without worry or fear. Herein, achievement is secondary to the experience of fulfillment. Achievement brings only a temporary state of fulfillment. The moment something has been achieved it is already in the past. Many people numb themselves in the constant pursuit of achievement, and in doing so, miss out on the joy that comes from actualizing their truest and deepest desires. Achievement "achieves" only a temporary state of pleasure - the pleasure is there, and then it's not. Instead, fulfillment recognizes continuity - the continuous nature of being, of desire and of human needs. Fulfillment involves a continuous interplay of relationships and decisions that regenerate a continuity of well-being, of consistently meaningful progress, and of the coherent selection of ever higher potentials. Essentially, fulfillment is a more accurate description, or metaphor, for that which is truly being sought by all individuals; though it is often disguised as achievement, and other forms of "pseudo-satisfaction".

The second obvious reality is that the human brain is designed to prioritize needs as a mechanism for maintaining the survival of the human organism. The brain anticipates and considers and reduces contradiction [during integration] for its very survival - the survival of the self as a physically material organism. When the basic needs of human beings are not met, then the human organism begins reacting in an instinctually predictive manner to "get" its life-support needs met [through impulse & compulsion as basic instinctual reactions]. Impulsive and compulsive behavioral reactions to situations are an indication of the absence of fulfillment and the presence of [at least] fear. When basic needs are sufficiently met and a human is not controlled by its instinctual reactions, then consciousness may begin considering its relationships and its ultimate potential.

Most people in early 21st century society, because their needs are not sufficiently met, find a comfortable and convenient place from which to shelter themselves from opportunities that might challenge them and lead to their growth beyond a state of fearful reaction, beyond the three f's of: flee, fight, and feed (& mate/reproduce).

The third obvious reality is that human needs are fulfilled through the organization of certain states of the internal (or mental) and external (or material) world. Humans are naturally inclined to act on these inner and outer environments, and they do so [in part] through a system of orientational values that may or may not generate a state of structured organization that fulfills their discoverable, natural, and common human needs. Clearly, some states of the internal and external world objectively meet human needs more greatly than other states of the world. The term 'objective' refers to that

which is independent of the opinions or attitudes of a person or persons. Some ways of approaching the world meet needs more greatly than other ways of approach. And, some states of the mind meet needs, and meet them more greatly and joyfully, than other states.

The starting point in the development of a community of flourishing individuals is the human being itself. Human beings have the ability to learn and pass on information via communication concerning the regular[ly verifiable] properties and principles of reality (e.g., scientific knowledge). This capacity for information acquisition, communication and transference allows for the common identification and fulfillment of human needs and desires, and the creation of systems that facilitate the strategic fulfillment of those needs.

If individuals among society seek to experience a continuous state of fulfillment, then they must continuously ask themselves, "What direction are I moving toward and what states of the world do I desire?" If humanity desires a community where individuals are supported in their experience of and exploration toward their highest potential, then humanity requires a system of social organization that in some useful manner fulfills all common human needs.

**INSIGHT:** *When human fulfillment system's fail, conflict can be one negative outcome.*

## 2.2 The common interest of humankind

**NOTE:** *In part, any disturbance at the societal level is a disturbance to individual fulfillment.*

Humans share a common set of interests, those of their evolved nature and the ecological cosmos they are materialized within.

Species with cooperating populations naturally have an interest in:

1. The biophysical world itself and its universal requirements of reproduction [of the species].
2. The quality of experience of the individuated units of consciousness of the species.
3. Production (technical system) of the means whereby societies live, and its organizing principles (e.g., social value system).

History clearly reveals that direct competition with others (i.e., other humans) for the very "stuff" of life (i.e., need satisfiers) is unwise at best, and suicidal at worst. Humans are deeply interconnected, not only non-materially, but also, genetically, but within the same bio-/cosmo-sphere. The rope model mentioned elsewhere provides a visualizable representation of this inter-connection and inter-relationship in object-form.

Within community, the common interest is shared by those sources of information willing to share and work together. The common interest of humankind

is shared by all users of the knowledge and services that humankind can produce and sustain. Thus, the source of information for what is the common interest of humankind is unified by accounting for the human users, who are also the contributors that inform and sustain the system:

1. **The user** - everyone who uses informational and material (habitat) services.
- A. **The contributor (who is also a user)** - everyone who contributes to the design, development, and operation of informational and material (habitat) services.

There are significant benefits to having (and living in) a predictably need-directed society, where need fulfillment is highly certain among the whole population. Neuroscientists Shmuel Lissek and colleagues have found that when an unpleasant or painful experience, such as an electric shock, is predictable, then organisms relax. (Shankman, et al., 2011) The anxiety produced by uncertainty is gone. Hence, it is thoughtful to consider that when humanity's basic needs are met, and human beings are effectively fulfilled, then quite possibly they step into a natural capability of perceiving more of themselves and more of reality because they are no longer focused solely on reflexive fight or flight, or on compulsive pseudo-pleasuring.

### 2.3 Fulfillment sub-conceptualization

The axiomatic composition of fulfillment involves three inter-related conceptions that connect a [social]organism to its [physicalized/embodied] environment (i.e., what is common and needs to be coordinated between in order to achieve fulfillment?):

1. **Need:** that [system] which is being input to express [internal] capability.
  - A. A need is any required input to a mechanism.
2. **Service:** that [system] which is being output to express [external] capability.
  - A. A service is any system which functions to complete an intention outside (beyond) its own system's level. A supra-system, by definition, has sub-systems that service (i.e., has service systems).
3. **Resource:** that [system of material organization] which is produced natively or non-natively (by a service - ecological or socio-technical), and is used/consumed by humans to fulfill requirements, and thus, express capability.
  - A. A resource is any material (produced naturally or cultivated) that may be used by humans to fulfill a need.

Here, a human ecology is that which accounts for

resources and provides for services that humans and other living beings use, or otherwise, require.

When humans co-habitat in the form of cities, they produce services (and therefrom, goods) that humans, and other living beings use. Each city represents a common collection of services, known as a Habitat Service System, which is a socio-technical, ecological environment.

The conception of fulfillment includes the following sub-conceptions:

1. **Need (human being)** - The concept of 'need' carries the meaning that some input(s) are required, despite what someone may subjectively choose, and however hard someone may struggle against the need.
  - A. What can be *done* [for the individual]?
2. **Capability (human functioning, doing)** - a potential for [often intentional] choice and action. A capability represents a person's freedom to express or achieve valuable functionings. Developed (or achieved) functionings at any given time are the particular functionings that can be performed, demonstrated, successfully pursued and realized.
  - A. What can the individual *do*?

Necessary linguistic clarifications:

1. The 'capability' concepts represents the various combinations of functionings (beings and doings) that the person can develop (achieve). Functionings are the various activities and actions a person may value doing or being. For example, the following functionings are constitutive of a person's "being":
  - A. Being nourished > eating, being loved > affection, being significant > contribution, being certain > communication.
  - B. Thus, capability is a set of vectors of functionings, reflecting the person's freedom to live one type of life[style] or another (to "be" different), and to choose from all possible living scenarios (societal configurations and their experienced results).
2. 'Basic' capabilities are those capabilities an individual requires to meet basic needs (e.g., a functioning digestive system to process nutrient resources). To be 'disabled' is to lack a basic human capability.

#### 2.3.1 Relationship completeness

In concern to fulfillment, relationship completeness refers to the state when/where services and resources complete the need[ed] (required) relationship. The following terms are used to refer to the state where that which is desiring input is sufficiently complete (via

some indication method) that the need ("desire") wanes for a rest phase of the cycle. When our environment (e.g., food) meets needs on multiple levels it provides a feeling of "completeness" (i.e., satiation), and the behavior to complete the need stops (e.g., the eating behaviour stops) offering a satisfaction that is altogether different than feeling the drive (e.g., hunger), or being stuffed or insatiable.

The expression and enjoyment of "our" human capacities for social self-consciousness and intentional agency together with others requires definite forms of loving and caring interpersonal relationships, information transfer, and life-service spaces in which creative self and social expression can be developed and enjoyed.

### 2.3.2 Optimizing human fulfillment

To optimize human fulfillment, the following data are required:

1. A knowledgeable design for the coordinated mutual fulfillment of all human need.
2. A definition and identification of [f]actual human requirements?
3. A structure to fulfill those human requirements ("things") that are innate necessary to a social biological population of human organisms, which would otherwise degrade a single individual's fulfillment (as an social organism as part of the population)?

### 2.4 Societal fulfillment sub-conceptualization

The societal-level sub-conceptual complex (*as sort tags*) of fulfillment includes:

1. **Society (life capacity)** - A societal system ought to enable human life capacity, enabling greater freedom in consciously altering ones environment (as technology advances).
2. **Common heritage (planetary resource-services)**
  - that which is of common environmental interest and consists of materiality (or material resources).
  - A. **Earth-based resources are the common heritage** of all the planets species.
  - B. **Human knowledge and social capability** is the common heritage of all of humankind and the reservoir from which all conscious growth and effective adaptation occurs.
  - C. **Coordinated and controlled common access** to common heritage resources, in part, through a materializing habitat service system.
  - D. **Common heritage design** (a.k.a., open source), where the user decides through collaboration upon a materializing system where information flows from conception (ideation), to decided execution (algorithm), into materialization (production-operations), and back again as the concept, "prototype", as the materialization is measured and its alignment in quantity and quality are assessed.
- E. **In a common heritage environment**, there is probability, and it is possible to develop and operate (produce) a service system with a high probability of fulfilling all population requirements, optimally. In order to accomplish this, the system must be unified (or, as unified as possible), while accounting for all available resources under open source (common heritage) conditions.
- F. **Common heritage survey of global resources** (as in, area and object; position and reference/standard).
- G. **Common heritage information space** for the open assembly and operation of the operational service system, including its information system.
- H. **Common heritage index of human need**, fulfillment and optimal environmental, solutions.
- I. **Common InterSystem synchronous up-time operation project** of local habitat service system within a global city network.
3. **Freedom (socio-technical extensibility)** - Each healthy human has the ability to reconfigure the environment (given a societal system) in the context of its own requirements for fulfillment. Extensibility (the socio-technical application of the felt conception of 'love') - the freedom "we" get by seeing all things as extensions of one unified information space (one unified self). Freedom is, in part, relative to human beings and their capability to determine their socio-technical environments in accordance with self-chosen end(s).
- A. **Resource accounting (habitat surveying)** - Everything having to do with needed resources (e.g., food), such as its collection, capture, cultivation, preparation and consumption, represents a societal act[ion or behavior], and must be accounted for within a unified societal model.
  1. Everything having to do with needed resources (e.g., food), such as its acquisition, processing, and using represents a societal act[ion or behavior], and must be accounted for within a unified societal model.
4. **Satisfiers (needed resource-service satisfiers)** - Those environmental elements (including all inputs, resources and methods/ways) that complete

a needed relationship are satisfiers. In other words, satisfiers are inputs and methods (ways) of meeting needs. Other names for satisfiers include: nutriments, resources, services (and products), and conditions.

- A. **Material satisfiers** - matter onto and through the individual human body (object).
- B. **Non-material satisfier** - other consciousness (human and non-human)interrelation with informational meaning (concept).

These "tags" to consciousness are the real bases of self-respect and substantive individual freedom. Every person has something unique to offer, and social organization is only good so far as the life capacities of individual and society, access and contribution, are bonded in mutual progression and not dehumanizing to both.

## 2.5 Possible high-level survey questions indicating the level of subjective fulfillment

The following are questions that facilitate a greater realization of whether socio-economic needs are met, or not sufficiently met.

1. What is your overall satisfaction (qualia) with your life?
2. What is your overall satisfaction (qualia) with life when compared against others, locally and globally (at a planetary-level)?
3. What is your level of socio-economic access when compared against others, locally and globally (at a planetary-level); what are your opportunities relative to others?
4. Does all feel well with your life and life pursuits (life interests); do you feel like you are pursuing worthwhile activities, beneficial to yourself and others?
5. How many adverse, negative, and traumatic events are you experiencing, and are you suffering in any way; is there conflict somewhere in your life?
6. Are there activities that you have to do because of the structure of the societal system, that you would prefer not to do; would you not do certain life activities if you had the opportunity not to do them?
7. If you had the resources, would you do work other than the work you do now?
8. Do you feel like you are able, and have, the opportunity to pursue worthwhile activities, beneficial to yourself and others?
9. How much did you smile in the last 24 hours? How much joy did you experience? How much unwanted

stress?

10. How often do you enter the state of flow?
11. Are your needs and life-requirements fulfilled satisfactorily?
12. Do you feel separated from, and in a dis-coherent relationship with, any other individuals in your life?
13. Do you have a clear purpose in life?
14. Do you feel like you express your values coherently with others; do others in your life express conflicting values?
15. Do you feel like you have individual, conscious control over your life?

**NOTE:** *The above questions exist as part of the screening and orientation entrance statement on the part of individuals desiring access (entrance) into the community-type (RBE) societal system.*

## 2.6 Design for flourishing [conditions and behaviors]

*A.k.a., Flourishing through design.*

To flourish is to grow and develop, to experience life in a healthy and vigorous way. In order to design [a habitat system] for human flourishing, the following procedure is most commonly followed:

1. Identify behaviors that you want to express, and by design, you want people to do, which are also aligned with the fulfillment of human needs/ requirements.
2. Understand the environment as all the stimuli that affects "you", and others, moment to moment.
3. Create an environment to promote specific behaviors, which are aligned with the complete satisfaction-fulfillment of all human needs- requirements.
4. Use monitoring (and experimentation, testing, study) to confirm change of [the state-condition of] behavior is as expected. Arrange configuration of environment to maintain and improve (change) the state of flourishing of all humans, and sentient beings.

All behavior has consequential affect (influence) on a social network in which individuals express behaviors that orient toward or away from life fulfillment (Read: information and action life[-fulfillment] coherency):

It is understand that the human [habitat] environment influences human behavior, and that the society can intentionally design an environment that generates fulfilling conditions and behaviors. And, by understanding and prioritizing human needs, a society can create an optimal state of flourishing. Therein, individuals, together are intrinsically motivated, and have the opportunity, to pursue their highest potentials

(interests, purposes, orientations), and in doing so, facilitate "our" development toward the highest potential of all. By understanding and acting according to the optimization of "our" fulfillment, "we" create (i.e., are together creating) a more desirable environment for everyone.

Behavior may be an expression of the problem; it is not the problem. The behavioral expression of violence is a problem with the psycho-physiology of an individual (i.e., the violent behavior is an expression of an underlying, extant structure based within an individual's psycho-physiological state).

To design for flourishing it is essential to know the elements to life entrainment, and hence, flourishing in harmony with a biosphere,

1. Change the signalling, change the expression.
2. Change the thinking, change the behavior.
3. Change the behavior, change the environment.
4. And, the reverse of the above three.
5. And, all together.
6. When working together, inquire together: What should people do, and not, what can people do?
7. When working together, inquire together: What should people do, together, if they have needs; what if people can "have" needs and also not be aware of their affectual presence?

The question of how society is organized, or how to organize society, is one that has come to many human minds. Answers may fall into several categories:

1. Human theory - individuals' motivations and behaviors are conceived to meet the human needs of individual humans, either by intrinsic signaling and organization or as an extrinsic coercion. Here, intrinsic motivation is the optimal choice.
2. Functional theory - individuals' motivations and behaviors are shaped to meet the functional requirements of society, either by deliberate design or as a latent effect. Here, mutual habitat service is the optimal choice.
3. Conflict theory - individuals' motivations and behaviors are maintained through structures of domination in which relatively high levels of authority and/or affluence, coupled with widespread acceptance of justifying ideologies, help prevent excessive dissent sustain order. Here, transparent decisioning and restorative justice are the optimal choice.

The survival of particular structures in a society is not equivalent to the survival or well-being of the individual members of the societies population. The overriding priority in community is the fulfillment of people and their development to their full potential as human

beings; not the maintenance of particular structures as an end in itself.

This point that socially assured sufficiency of life goods does not mean authoritarian government or levelling of individuation and diversity. The goods are universal necessities of a human life, not dictated by central authority or anyone else. People's lives are not levelled, but on the contrary, more diverse, free and individuated by their assured provision.

**APHORISM:** *Unless you know where you are, you do not know who you are.*

### 3 The human living system

*A.k.a., Human life system, human life-system, human life-system organization.*

The human living system could be viewed as the integration of the living systems through which humans express[ly sense] existence:

1. The cosmic system (the universe-al kind).
2. The solar system (the sol-ary kind).
3. The earth system (the planet-ary kind).
4. The human system (humankind, the species-ary kind).
5. The societal system (human population organization kind, societ-ary).

Individual humans [in community] give rise to material requirements at the dwelling, habitat, and societal level. Humans have life-support requirements at every scale of human living. It is possible to assess all of the important and/or priority domains in common human life.

**QUESTION:** *If humans are part of the earth's life support system. Then, what is humanity's role in working with earth's life support system? How do "we" build "our" life [material-style] systems so that they support earth's life support systems?*

#### 3.1 Human life [system] requirements

What do astronautic engineers require data on (i.e., what do astronauts know)?

1. They know what their life support systems are.
2. They know what their life support systems do.
3. They know how their life support systems work.
4. They know how to monitor their systems.
5. They know how to maintain (and repair) their systems.

What do societal [information] engineers require data on (i.e., what to societal engineers know)?

1. The idea of 'life support systems' that 'enable' (and not disable) 'life capacity' over 'time'.
2. The design of life support systems that enable (and not disable) life capacity over time.
3. The procedural operation of life support systems that enable (and not disable) life capacity over time.

#### 3.2 Living system organizational design

The current human living systems can be designed with various concepts in-mind:

1. Direction and orientation.
2. Human need fulfillment (including preferences / wants).

- A. Everyone has a common set of needs and there are common heritage resources, how can the need fulfillment of all be optimized?
3. Contribution needs and preferences (community-based).
  - A. Habitat platforms where humans are fulfilled require work, how can the work be of the highest quality and the workers most intrinsically motivated?
  4. Habitat service needs and preferences/wants (community-based).
    - A. Habitat service support systems (cities) meet the fulfillment needs of the population in a cooperative, coordinated network for customizable fulfilled lifestyles.
  5. Profit needs and wants (market-based).
    - A. Businesses have a need for profit, which is gained through sale or donation. Consumers may buy what they want based on their purchasing power and what is made available to them by business (by "capital").
  6. Authority needs and wants (State-based).
    - A. The market has a need for regulation by an authority figure for safety, which is accomplished through an organizational monopoly on law, force, violence and coercion.

##### 3.2.1 Objective criterion of a life-need support system

An objective criterion can be established for a life-need support system that enables life capacity over time. There exist objective criterion to tell the difference between life [support] systems that enable life capacity over time (in comparison to those which do not), include but are not limited to:

1. **A life-value analysis:** Life-value analysis is based on the establishment of a universal criterion, that of life necessity or need.
2. **A Need (N)** is something that results in a reduction in the capacity of life. This reduction could be the experience of greater suffering and/or a loss of fulfillment. If there is a deprivation of "it", life capacity is reduced. If, for example, someone is deprived of clean water, fresh air, loving relationships, etc.
3. **The N-value** that is reached by a scientifically verifiable life-value allows for endless degrees and choices. Thus the need for food can be satisfied in the form of fish and beans, or by fruits and vegetables, or meat and potatoes as long as the organic need for a complement of nutritional sources is satisfied. Nobody thus "decides for others" using this analysis. At the same time, junk

food can clearly be seen to have no N-value and does, in fact, reduce life capacities through disease.

4. Some needs are more easily identifiable than others. Air, water and food are clearly necessary within a short-term time framework, whereas deprivation of communicative culture and life vocation reduces life capacities in the long term.
5. With the recognition of short-term material and long-term quality, the human desire to perform work which benefits others becomes a life-value. Thus, when people pose the question about the incentive people will have to work in an society without money (i.e. symbol of value, McMurtry's system responds with the freedom to pursue one's true vocation, which results in life value).

From the life axiom, McMurtry (2011, 2018) identifies seven "rights" (that which should apply to governments and corporations as rule/law) that apply universally across individuals and cultures and that are needed to preserve and/or improve life capacity. These are:

1. The atmospheric goods of unpolluted air, sunlight, climate cycles, and seeing- hearing space;
2. The bodily goods of clean water, nourishing food, fit clothing, and waste disposal;
3. The home good of shelter from the elements and noxious animals/materials with the means to sleep and freely function;
4. The environmental good of natural and constructed elements contributing to a life- supporting whole;
5. The social goods of reliable care through time by supportive love, work-day limits/safety, accessible healthcare, and security of person;
6. The cultural goods of language, the arts, participant civil rights, and play; and
7. The vocational good of enabling and obliging each to contribute to the provision of these universal life goods consistent with the enjoyment of."

By applying the life-value axiom to questions of distribution and contribution, McMurtry also eliminates three faults to the general principle, "from each according to his ability, to each according to his needs":

1. 'Needs' have remained without definition and bound. Thus damaging habits conceived of as 'needs' may qualify as benefits, leading to disabling ("negative") consequences (network effects), and
2. The 'ability' expected (required) from each is not grounded in human life capacities. Thus, de-humanizing use of abilities can be obliged "from each," allowing for distortion of the underlying life capacities they express.
3. There is no principled linkage between 'needs'

and 'abilities' to ensure the coherence of their realization. Thus the ancient division between the unequal abilities and needs of people still remains.

## 4 The life system

*A.k.a., The life concept, the 'life' conception, life-concepts, life conceptions, life-conceptions, life imperative concepts.*

What is life? Different societies have different conceptions of life. A society's conception of 'life' may, or may not, be grounded in (i.e., linked to) idea that the living (i.e., living systems) have needs that are required to be met [completely] if they are to remain life [and thrive completely]. On Earth, life works with and also competes with other life, for material space.

Possibly, there are (at least) two scientific properties to all living entities:

1. **Alive/living** - a \*natural object that moves against the least path of resistance by itself (Read: individual).
2. **Life** - the set of living entities (Read: group of alive individuals, assembly of individuals).

*\* The word 'natural' does not include "artificial" objects that humankind has made. These objects are not living (to some relative degree); they may, for instance, move against gravity as in the case of vehicle, but they cannot interface with the physics of gravity consciously, as a 'human' organism can.*

In assembly theory, life is the capacity for memory, specifically, chemical memory that is stored in DNA and genes. Memory is needed for self-assembly. Likely, however, this definition of life should state that, it (life) is the capacity for and intelligent use of memory to construct and problem solve [against gravity] that grants life. Regardless, memory grants [life] the ability to repeatedly produce a complexity of objects that would otherwise be statistically impossible to have formed. In assembly theory, the assembly index (ai) is the number of steps to construct some object from sub-components. Anything with an assembly index (ai) at or above 15 steps of problem solving, component formation steps ( $ai \geq 15$ ) is so unlikely that random processes alone could have produced it. This doesn't mean that an object at or above an ai of 15 is life; it just means that life was necessary to create it.

The second law of early 21st century thermodynamics (entropy) states that without "work" a system will gradually decline to randomness or disorder (greater "entropy"). Objects in the universe move from order to disorder, and without work, will increase in randomness over time, gradually losing energy until the ultimate heat death of the universe. Here, the ultimate form of "work" is life, then machines, then sentient machines (a.k.a., synthetic life).

### 4.1 Scientific life study: Biology

Whereas physics is the study of material reality, biology is the study of material life. Through material reality an [organic] living entity can be defined relative to an environment. An organic entity is defined (relative to) an environment by way of defining its set of [environmental] needs (or, inputs, requirements).

### 4.2 Societally relevant life-related conceptions

All of the following life-contextual terms are related are and simply different windows into the same unified life fulfillment information system, formed from two principles:

1. **Life-coherency principle** - a principle that gives meaning to life because it allows for life to improve itself by coherently meeting life requirements over generational time.
2. **Life-value principle** - a principle that gives orientation to live because it allows for the fulfillment of the input requirement of a system whose functioning enables (and does not disable) life capacity (life's potential through actualization).

**CLARIFICATION:** Concepts associated with 'life', in this context, are generally with a hyphen ("-") connecting the term 'life' and its context, for example: life-coherency, life-value. However, the hyphen is not always used -- either usage of the hyphen or no-usage of the hyphen could be considered correct.

#### 4.2.1 The life-coherence principle

*A.k.a., Life coherency, life meaning life access requirements,*

All [life] economic demand is a demand of life [ecological] systems for life [ecological] services and [sociological] resources (i.e., life goods).

Principles of a life coherent society through generational time:

1. Access to means of life (i.e., the materialized habitat service system; life goods).
  - A. Converse: scarcity in access to means of life.
2. Service (or enable) life capacities/abilities, not possible without it.
  - A. Converse: disable or do not service (enable) life capacities/abilities (enabling/serving that which is not a means of life).
3. List the complete, universal set of "means of life" (i.e., the inventoried matrix of human [life] need through habitat [life] service), which all humans

- require to flourish. (Note: see needs list)
- A. Converse: materiality that does not directly or indirectly provide means of life (and could therefore be considered, "uneconomic" or "anti-economic" in that it does not provide means of life, otherwise, human life services).
  4. Measure the provision ("abundance") and deprivation of each life need (each means of life).
    - A. Converse: willingness or ability to pay prices for services (and commodity objects), thus not measure their life requirement, but increase the opposite (i.e., conspicuous consumption).
  5. Evaluate fullness of access by all users ("members") of the services in comparison to a previous[ly composed] state of the society (or economy), or to another socio-economic composition entirely (e.g., greater/lesser nutritional-intake, clean water accessibility/inaccessibility, bio-diverse environment, education, life participation/exclusion, life well-being).
    - A. Converse: the growth of abstract entities is made to correspond to the access of its members to life "goods" as defined by that society. For example, in the market, a "good" is anything that is produced, regardless of it facilitates or thwarts life.
  6. Resolve a new [design] state using 'capital' as the primary conceptual variable of any given societies economy:
    - A. Life capital ( $LC \rightarrow LC_1 \rightarrow LC_n$ ) is access to services that complete life needs (i.e., means of life) producing more cumulative yield, without loss, through time (e.g., species/ecological, social, knowledge...note that these are indicators).
    - B. Converse: services are claimed as "capital" that do not directly or indirectly produce means of life through time (e.g., money capital growth by non-defensive weapons manufacture, currency speculation, production of life-disabling consumer commodities). Note: Notice the circularity here, and the lack of iterative evolution. The difference here is life-capital (i.e., the reproduction and growth of life) exists in contrast to money-capital (i.e., the reproduction and growth of money sequences).
  7. Determine efficiency, where the efficiency of any service (system, process, tool, etc. in the economy) increases to the extent that:
    - A. Ecological Efficiency - inputs and throughputs function to enable the provision of life goods with diminishing waste and externalities (e.g., organic farming methods, industries directed towards 100% recycling).
    - B. Physical Input-Output Efficiency - reduced inputs of materials/energy/space/mandatory work time produce same or greater means of life outputs (e.g., wheel and pulley structures, cooperative organisation of work/leisure requirements, lower labour/fuel-per unit machines).
    - C. Human Development Efficiency - capability development of productive agents enables more life goods, lifetime, and/or life-range choices than before (e.g., by education, healthcare, and vocational work). Enabling productive, participative efficiency, like literacy, or mathematics enables greater production ability and creative expression.
    - D. These are the types of efficiency they system needs to improve.
    - E. Converse: life capital resources are wasted and destroyed by life-incoherent systems. Hence, the life value of anything is always damaged by its commodification, and it does not follow that this damage can be undone.

#### 4.2.2 Life-coherency and efficiency

A system that is more [life]-coherent is more efficient. In society, the efficiency of any system (service, tool, or process) increases, to the extent that:

1. It improves life capacities, and
2. It improves capacities to produce the means of life (e.g., ecosystem services), and
3. If it doesn't do either (i.e., improve life), then it isn't efficient.

Note that there are two principal levels to efficiency here:

1. 1st efficiency: inputs and throughputs function to enable life goods with diminishing waste and externalities. This could be considered ecological efficiency, where 100 percent recycling and 100 percent reuse is optimal
2. 2nd efficiency: physical input and output efficiency, the efficiency of the system itself (reduce inputs required and create more space efficient outputs).

#### 4.2.3 Societal life-coherency

The question of the degree of societal life-coherency is (i.e., the life-coherence inquiry is):

1. What enables human and ecological life together?
2. How aligned with life's requirements is the society?

A life-coherent societal system is a system that accounts for life, its requirements and various potentials of being. In other words, a life coherent societal system "coheres" with life's requirements and the optimal

embodied expression(s) of consciousness.

A life-coherent system is one that:

1. Does account for the life ground, and
2. Does not encode hurtful abstractions (e.g., money sequences and agreements without any reference to the life ground).

Societies are life-coherent to the extent that the value system that regulates and legitimises their major societal organizations:

1. Does not unsustainably use (Read: exploit) the resources of the natural life-support system.
  - A. Does the societal system use natural resource for life-support sustainably?
2. Does not damage, through instrumental use (Read: exploitative instrumentalization), the life-requirements and life-capacities of others (particularly, for the sake of system-specific or authority-specific interests).
  - A. Does the societal system damage (harm) the fulfillment of life-requirements and life-capacities?

Note that different societal value [system] compositions (i.e., different orientations and objectives) are likely to have differently expressed potentials for societal life-coherence.

#### **4.2.3.1 The life-coherency of cooperative-type and competitive-type societal systems**

*I.e., The market-State as a type of societal structure with a determinable life-coherency in relation to a community-type society with a designed and determinable life-coherency.*

The active value system in a market society is life-incoherent for both life-support sustainability and life-requirement capacity. Market-based values lead to behavior that conflates the production of universal life-value with the production of money-value (for the private appropriation of investors and owners), by not applying the test of life-coherence (i.e., the market's value orientation does not support decisioning, using information on whether an action fulfills life requirements?). A money-value (money-valued) approach cannot recognise as services or goods anything that cannot be priced (or otherwise, owned). This fact means that it is obfuscates ("blind") to intrinsic life-values (intrinsic being synonymous in this context with unpriced), and it drives people toward [scales of] economic activity that are ecologically unsustainable and likely to generate conflict (or just suffering in general).

A market-based structure has no feedback mechanism to determine whether work is undesired, unnecessary, alienating and exploitative, or worsening to the lives of

workers. Therein, the market-value system encodes the "good" of work ("labor") as its wages. The market system identifies the "good" (as a direction of orientation) for individuals as maximal private accumulation of money-value, of ownership, without regard to externalities such as ecological life-service, habitat life-support, and self life-development.

The concept of 'exchange' is a market-based term. For every exchange (or transaction) there is a cost (price, externality, debt, credit, etc.).

The life-coherent structuring of cooperative (community) versus competitive (market) societies differs, as follows:

1. A market (ownership access, private access) structured society seeks to maintain money-value. Herein, a lack of life-value is no barrier to commodification and profitable sale, while the presence of life-value is irrelevant beyond consumer-subjective demand.
2. A community (cooperative access, shared access) structured society seeks to maintain life-value. In other words, a community seeks to maintain life by encoding into decisioning (and the information system, in general) values that orient toward a better, more optimal life [experience]. Herein, a lack of life-value (i.e., lacking values that orient toward a better life experience) is a barrier to action using common resources -- if an action doesn't make "us" better off, then that action is not taken, and an action that is likely to make "us" better off, is taken.

In the market, institutions (market-based organizations) are measured by a money-value metric, wherein they are judged "good" when they meet the needs of the money-value system (and thus, the private interests of major economic powers) by:

1. **Providing services** to private economic agents and institutions at lower cost than those private interest could provide those services for themselves,
2. **Producing commodities** for sale with the profits transferring to private market agents,
3. **Training people** for compliant functioning in labour markets, and
4. **Providing justifications** for the ruling value system whose internalization impedes recognition of the life-incoherence of the system.

In community, access to services (of which object-goods are a sub-component) is measured by a life-value metric. When measured by a life-value metric, services are assessed on their effectiveness of:

1. Meeting the needs of life-forms, because the life-forms are [conceived of as] life.

2. Meeting the ability-condition of sustainability over the open-ended future of human life, because life exists in a finite environment where there is also not life.
3. Not requiring or triggering social values and behaviors that cause suffering (by means of exploitation, oppression, or alienation), because in life it is given that there is a choice/decision space (life-requirements can be met through either cooperation, or exploitation and oppression):
  - A. **Exploitation** is the state of access without contribution (getting one's own needs met without contributing to the meeting of others' needs).
  - B. **Oppression** is the state of access control with subjective power over others (getting one's needs met while actively thwarting others' needs, suffering)
  - C. **Alienation** is shaming another member of a social species by attributing behavior entirely to the subjective (as opposed to recognizing it in a societal, structural environment or context).

### 4.3 The "need" for money

In the market-State, where money is intrinsically used, the production and distribution of vital needs, such as food, water, and shelter, are based on a concept, money. People act to service human needs (through businesses, jobs, and government action) because of a concept; the concept and its reification has consequences. In the early 21st century, the concept of money has become the metaphorical remote control (Read: the driver) that moves humans around. The vital needs for human life support only get produced and distributed because of an abstract[ed from humanity] concept, money. In the market-State, humans are using the concept of "money" (including, debt and property) to produce and distribute resources, needs, and services. In the real world, the concept of "money" doesn't produce the resources, needs, or services; instead, humans and their automated technologies do. Money is a collectively shared reification of the concept of exchange. In this way it could be said to be a universally reified ticket (medium, material) of exchange. In a way, money is the emergent property of a system of private ownership in which production is no longer for direct life, technology or exploratory user service, but for exchange [in a market], and in which individual humans confront each other no longer as people [among community], but as commodities [in the market-State]. The concept of money, then, is the ultimate form of the alienation of contribution, separating the user from the laborer, by representing the labor (real world effort) with a reification, money (abstraction, symbol...of value). It is relevant to note here that over time there has grown in the minds of humanity a belief in a universal medium of exchange

(money) as the way to resolve economic decisions – for a single commodity (money) that acts as a real world measurement for production and access.

**NOTE:** *The reification of money can easily force the production of behaviors among a population that actually lead it away from human need fulfillment.*

If everybody's needs are met, there is no need for money, because money is a way of allocating scarcity and/or power-over-others (in a state of competition). There is no need for exchange, so there is no need to model the mechanism or technology of exchange, and thus, no need for money.

The direction of a community-type society is one where there is:

1. No need for money (to meet fulfillment objectives) and no need for exchange (to have access).
2. Cooperation, because there is no private property and no division of labor (of the operating user).
3. Accounting for the real world, for human requirements, for ecological requirements, for contribution, and for fulfillment service access.

**INSIGHT:** *Freedom is to be found in positive and fulfilling relationships with others.*

### 4.4 Life-value

**INSIGHT:** *The more a society satisfies the necessary requirements of human life, the more individuals therein are empowered to develop (potential) and enjoy (actualize) the capacities that make human life valuable and meaningful.*

Life-value is a supra-category of elements, relating all aspects of objective reality that enable living things to survive and to develop their [distinctive] life-capacities (to develop a potential), and whose realization and enjoyment (to actualize a potential) makes life meaningful and well. More simply, life-value refers to everything that makes up the objective and common experience of well-being through the complete[ly regular] fulfillment of life requirements. There are universal human requirements, because there are a set of needs claims that relate to life-value, which is common to everyone and objectively self-evident. Life value is the most innate form of value possible. A life-value is, what is of value that sustains and enables life [capacity/ability] - the fulfillment of the absolute need(s) without which life [in its capacity to express potential] is reduced, leading to cumulative gain over time without loss.

If something has an orientation (in our lives), then does that orientation sustain and/or enable life capacities? If that with an orientation (i.e., a resource, service, behavior, mental model, mental value, etc.) leads to the sustainment or enabling of the capacities of

life, then it is an optimal ("good") direction for life action (via explicated decisioning).

The three axiomatic fields of life-value (or, fields of value):

1. **Thought:** internal image and concept (understanding).
2. **Felt** side of being: senses, desires, emotions, moods (affection and emotion).
3. **Action:** animate movement and organizations.

The objective standard of measure of life value is decomposed of three logical steps:

1. All value (to a living embodied consciousness) is life-value.
2. Fulfillment (good) versus lack (bad) = the extent to which life is more coherently enabled, by the sufficient regular meeting of requirements (versus disabled); thus, enabling life value (coherency) is "good" and disabling life value (dis-coherency) is "bad", be degree.
3. By the remembered and designed enabling of greater (good) or lesser (bad) ranges or capacities (functions) of thought, felt being, and action (*as the 3 fields of the 3 steps of life*), through time.

This standard of 'life' experience has objective measures that no one individual can coherently disagree with, given what is known and self-evidently experienced. And yet, when life-value is accounted for at the societal level, then no one individual decides. When values become clear, decisioning becomes [more] obvious. When societal values are aligned with humanity's highest potential expression, then decisioning takes a shared "algorithmic" form. Societal decisions are a complex of internally created tools, procedures, and algorithms, expressing objective environmental life capacities. Gains and losses (over time) of life capacity can be measured (given what is known) objectively, scientifically so. Any change in state is better or worse by the greater or lesser range of life capacities it enables, or disables. A value system (value code, as a set of coordinates) can build mental and physical systems that are operational ("running") in society.

There are [at least] four testable generalizations of [human] life value:

1. Life value is objective, because it is true, independent of any one's perception of it. Existence is testable by embodied sensation; existence is self-evident ("hello"). Life can, and also cannot, be present.
2. Life value has unlimited validity because there is no exception to it, which is testable by searching for one. Life value has unlimited validity, and is thus a

source of real world information, as shown by its:

- A. Self-evidence insofar as its denial is nonsensical;
- B. Universality across all domains and issues of value determination insofar as there is no human life to which it does not apply;
- C. Presupposition in value judgments and conflicts across domains;
- D. Objectivity insofar as its value is independent of anyone's recognition;
- E. Impartiality insofar as it does not include ownership;
- F. Completeness insofar as it includes every life form, domain, or change to ill or better in distinct or holistic comprehension;
- G. Sovereignty in that it overrides any other value in cases of conflict;
- H. Measurable in degrees of value insofar as greater/lesser ranges of thought, felt being and action can each/all be decided from any given reference body of value;
- I. Contingent pattern of long-term evolutionary and historical development.
3. Life value is universalizable, because all values derive their worth from life [value].
4. Life value is a priority over any other type(s) of value.

In part, life-value is derived from the following principled structure:

1. Life forms a continuum (of lifeforms) in which each life form depends in specific ways on the natural field of life [service] support.
2. Life forms have wider or narrower ranges of life capacities, but all depend ultimately upon their ability to satisfy their life requirements,
3. Which, at the most basic information level, involves transforming information processes and life activities.
4. Hence, one can say that nature is the most basic form of what McMurtry calls the "life-ground of value". The life ground of value is the connection between living things and the material conditions that sustain them, allow them to grow, and act in their characteristic ways.
5. Human beings depend not only on their metabolism with nature, but also upon specific compositions of social interaction in order to consciously express and enjoy our basic organic capacities to sense, feel, move, think, imagine, and create together, for human life, the life ground of value has multidimensionally composed form.
6. Humans, both in order to persist and in order to live meaningful and valuable lives, must live within natural fields of life support and social fields of life

- development that satisfy our natural and social life requirements.
- A. Humans, both in order to persist, and in order to live meaningful and valuable lives, must live within natural "law" fields of life support and social fields of life development that satisfy our natural and social life requirements.
  7. Where these natural and social life requirements are not met, human beings are harmed, either in their metabolic functioning or in their ability to express and enjoy their human capacities in meaningful and valuable ways.
  8. Life requirements, therefore, are natural inputs or social institutions and practices that human beings must satisfy if they are not to be objectively harmed in their natural organism and social being.
  9. Life is better or worse for human beings according to the degree to which our lives are able to freely express and enjoy life capabilities in more "inclusively coherent ranges". The qualifier, "inclusively coherent ranges" is necessary so as to avoid the problems of a measure of overall social health like Pareto optimality (which is life blind).
  10. The goal of maximally coherent ranges of life-capacity expression and enjoyment is contingent upon the degree to which the natural field of life support and the social field of life development satisfy or do not satisfy fundamental life requirements.
  11. For human beings, that which has life value is any resource, institution, or practice that satisfies a life requirement or is an expressed and enjoyed capacity enabled by the satisfaction of a life requirement whose expression and enjoyment contributes positively to the life value of others.
  12. Material organization is thus limited to the range of life requirements and the possibilities of life-capacity expression and enjoyment that make an extrapolative contribution to the field of life support and the social field of development.
  13. At the same time, though subject to objective limits, life value is not an external standard imposed from on high upon subjective consciousness; instead, it is decided upon together.

**NOTE:** *When there exists the routinized consumption of status commodities with no link back to the development of human capacities for feeling, thought, imagination, or creation contributes nothing of real life value to human life, since by this compelled behavior, then nothing of life value for self or others is produced.*

In order to understand life-value more fully, it is necessary to examine in more detail how it is anchored

in the three dimensions of human life: the biological, sociological, and temporal). The dimensions of the human life space-time continuum can be defined:

1. The biological ("natural") dimension (biological requirements) - The biological dimension of human life is grounded in our biology and gives rise to a set of obvious natural life requirements.
2. The social dimension (sociological requirements)
  - The social dimension of human life is grounded in the biological nature (humans can only survive through social interaction), expressed through the emergent properties of conscious and intentional action in systematic and symbolic contexts.
- A. A social consciousness maintains (under normal conditions) irreducible social life requirements (a social system) such as extensionality (love and care), especially while young
- B. Education through which the imaginative and cognitive capacities of conscious (a decision system) may be developed,
- C. A contributive system (core habitat system) in which we can participate in the design and operation of the societal and habitat systems,
- D. A participative system (facility habitat system) that preserves and creates natural and artistic beauty, and
- E. A unified, engineered societal system directed toward the goal of sustaining a social space for individuals to develop their own highest state of well-being, and make positive contributions in the development of others.
3. The temporal dimension (lifestyle requirements) - The link of the natural and social through a finite life-time. The lifetime of a human being is finite, and the flourishing in one's life depends upon what the individual is able to accomplish, experience, become, express over the limited course of the human life[time]. Thus, in addition to natural and social life requirements, there is also a temporal life requirement to experience time as matrix of possibilities through which strategically planned iteration provides an abundance of regenerative access. Many beliefs, though not all, represent an attachment to a past iteration, and the belief is the inertia of the past iteration. Time is, in part, iteration (pattern), and actualized patterns ('motion') has inertia.
4. Conversely: The biological, sociological, and temporal patterns become crises in human life, expressed as the loss of life value of natural life-requirement satisfiers, social organization and interaction, and the human experience of time consequent patterns (and in the market, their

subordination to the money-value system that rules human activity in a capitalist society).

#### 4.4.1 Human life standards

What is of greatest life-value to all it having a set of integrated understanding of humanity and its relationships to the larger cosmos. Here, a human-life standards is an acceptable InterSystem Team Operations document for assembly, operations and disassembly. The resulting integration of studies into the phenomena, facilitates knowledge, principles and laws that protect and enable human and ecological life systems (if humans socially, together, intend so).

**QUESTION:** *What are the societies individual and common 'experience' objectives.*

#### 4.4.2 Life-value and consciousness

**INSIGHT:** *Without an answer to how humanity best fulfills everyone's potential, what really matters to people's lives and life conditions will remain missing.*

Where consciousness is not alienated from the life ground (Read: life requirements) of [life] value, it is capable on its own, of discovering for itself those forms of capacity expression that have (and those that do not have) [life] value, and deciding, without imposition from a social hierarchy, modes of coordination that are both subjectively satisfying and objectively beneficial to everyone. Consciousness is [at least, in part] a self-integrating, goal-oriented response to an extant environment.

##### 4.4.2.1 A life-valuing information system

A [unified] life-valuing information system:

1. Excludes nothing of what human life requires for existence.
2. Excludes that which destroys life value or contributes nothing to it.

Thus, producing conflict is ultimately life-destructive since its primary use is to threaten, wound, or kill other human beings.

##### 4.4.2.2 Primary axiom of all value

*A.k.a., The primary axiom of value.*

The axiom of all life value (a.k.a., axiom of all value) has two principles:

1. Life is a good (life existence is desirable), and that conception encompasses everyone living, and is at the same time, encompassed by everyone living. Because there is commonality, life navigation is possible; life has the potential for expressing itself together, cooperatively in existence.

- A. x is a value, if and only if, it is shared by a life population.
- 2. Life is better (more good, more desirable) the more coherently inclusive its life-fields and ranges in thought, felt being, and action. Because there is a more coherent information space, life has more potential for its expression.
  - A. Front: x is value, if and only if, x consists in or enables a more coherently inclusive range of expression (thought, feeling, action) than without it.
  - B. Converse: x is dis-value, if and only if, x limits (reduces, disables, destroys) any range of expression (thought, feeling, action).

The primary axioms of value include three principal domains of possible value expression (i.e., axiomatic fields of value that include all that is of value in life):

1. **Thought (T)** - internal image and concept [of sense of self in relationship to world].
2. **Felt side of being (F)** - through senses, desires, emotions, moods, also known as, feelings.
3. **Action (A)** - animate movement across a controlled habitat environment, across species and organizations.

Each field of value is decided by:

1. The [highest potential] intention (i.e., "the good will") - T/F/A as one (unified) to realise the axioms of life value.
2. The true - progressive consistency with the Primary Axiom (a.k.a., P-axiom, or the life coherence principle).

Symbolically expressed (algorithm) which algorithmically expresses an objective value gain or loss for some completed relationship:

- +V (positive value) => LR +
- -V (negative value) =< LR
- where, L = Range of T-F-A and/= and/or.

The primary axiom (of all value) is realised in the real world by a set of universal human life necessities, which can be defined, criteriarized (Read: standardized, ruled, and tested), and measured. The primary axiom is realized in the world by recognizing and societally encoding the complete set of universal human life necessities and their axiomatic criteria/measure of life satisfiers (services, objects, humans, and the larger ecology), and to do so with efficiency and effectiveness.

The unlimited validity of the primary axiom (p-axiom, life coherence principle) across time, place and domains is shown by its:

1. **Self-evidence** insofar as its denial is nonsensical;
2. **Universality** across all domains and issues of value judgment insofar as there is no domain of value to which it does not apply;
3. **Presupposition** in value judgments and conflicts across domains;
4. **Objectivity** insofar as its value is independent of anyone's recognition;
5. **Impartiality** insofar as it cuts against or privileges no common life interest;
6. **Completeness** insofar as it includes every life form, domain, or change to ill or better in distinct or holistic comprehension;
7. **Sovereignty** in that it overrides any other value in cases of conflict;
8. **Measurable** in degrees of value insofar as greater/lesser ranges of thought, felt being and action can each/all be decided from any given reference body of value;
9. **Contingent** pattern of long-term evolutionary and historical development.

## 4.5 Life-capacity

**Note:** In communications, the term 'bandwidth' is frequently used to simplistically represent capacity.

In system's dynamics, 'capacity' is formally defined as the maximum number of users per cell (times the user spectral efficiency), for a given maximum outage probability. Due to the axiomatic composition of systems, a system's capacity is finite; and, for a living system over-/under-capacity means loss (of life function) by degree, to full loss (destruction) of the system (i.e., death). To engineers of a habitat service system, capacity means some measure of the ability to produce, serve, or use, and to do so within the [carrying] capacity of the larger living system, the ecosystem.

Systems and products can thwart, harm, and reduce, and destroy life-capacity.

Life-capacity refers to the capacity to live, and to live well through [optimally designed] structure and function. At one level of the scale, life-capacity is the capacity of "our" Earth (and humankind) to provide means of life, without loss and cumulative gain, over time. For [life-supporting] ecosystem services, the optimum is cumulative gain over time, without loss.

The concept of life-capacity may be sub-characterized into:

1. Life-capital is the wealth (capital, habitat service systems) of means of life (life goods) that produce more, without loss in cumulative yield, through time.
  - A. Life-wealth,

- B. that produces more life-wealth,
- C. without loss, and
- D. with cumulative gain over time.

*Definitional note: 'Life capital' is the means (resource, tools, etc.) of life, to sustain and better life; versus the growth of money sequences in a market-type society, for example.*

2. Full life-capacity is optimizing access to means of life (services and resources) that produce more, without loss in cumulative yield, through time.
  - A. Optimization of life-capacity,
  - B. that produces more life-capacity,
  - C. without loss, and
  - D. with cumulative gain over time.

How can a society accumulate life-wealth over time, without loss? And, How can a society accumulate life-capacity over time, without loss? Through an openly integrated network of habitat service systems (a network of cities) wherein individuals perceive information and material resource as the common heritage of all, and thus, cooperate in order to coordinate the sustained, stable and cumulative higher-order (HSS) service system for a planetary population.

In life-support (Read: Life-support service system), the term 'resilience' is the capacity for an active system to rebound to normal function after a disturbance, or if need be, to adapt to a modified function should the disturbance prove to be long-lived.

### 4.5.1 Background extinction rate [indicator]

To sustain life, one of the most essential indicators is background extinction 'variable' and resulting predictive background extinction 'rate'. The rate is a mathematical construction (where statistical modeling is applied) to observe and predict the patterns present in the death/extinction of species in the biospheric environment that the human species inhabits (Read: has habitat [service city systems]). In the real world, background extinction refers to the death of one species, given an dynamic environment. From an observational point-of-view, background ground extinction refers to a measurement of the "normal", now, extinction rate of any or all species. Background extinctions are simply a measure of how often species go extinct, often, because they cannot survive, naturally. In total, this is a measurement of species that go extinct and did not survive, genetically. Background extinction refers to the ongoing extinction of individual species due to environmental or ecological factors at any level (biosphere/habitat/social, such as climate change, disease, loss of habitat, or competitive dis-advantage in relation to other humans and other species).

The term 'species' refer to inter-breeding of genetics to produce a replication. If the animals in question can have fertile offspring naturally (in the wild), they

are of the same species. The amount of time that the two specimens under consideration have been apart is insufficient for their genes to have diverged beyond the ability to procreate healthy litters that can propagate the race.

Intrinsic mechanisms and agents (including humans) are constrained by, at least, the following:

1. Time: The time a given species has been on Earth. This history pertains strictly to the species. Is it the same for a species to have been developing for millions of years as one that has just been spawned by a thousand years ago. How long does a species live? How long does an individual of the species live before dying (i.e., getting old and dying)?
2. Food: The food a species eats, especially toward the end of its existence when it has become exceedingly specialized.
3. Genetic drift - a species suffers a loss of genetic diversity after thousands of years of experiencing population bottlenecks and interbreeding.
4. What are/were the density-dependent birth rates of the species.

Causes of a background extinction, include:

1. Aging.
2. Food.
3. Genetic Diversity.
4. Carrying Capacity.
5. Materials availability.
6. Knowledge availability.
7. Biospheric availability.

## 4.6 Life-space

*A.k.a., Life space, lifespace, living space, societal life-space.*

A living space (life-space) is a spatial environment where an organism lives. All organisms need a place to live. Because there is finite space on earth, species (existing [in real-time]) at the planetary scale must cooperate to avoid harm, necessarily.

Generally, the term 'life-space' denotes an individual's external environment, including the extent that, the individual accurately perceives it. Life-space refers to the natural and built environments, and the dynamic array of living relationships therein. Physical existence and action accounts for the life-space.

The fundamental concept of a life-space can take on any complex of the following conditions (italicized with their associated societal-type tag):

1. The life-space can exist free (*community*).
2. The life-space can be commodified (*market*).
3. The life-space can be taken (*State*).

4. The life-space can be designed (*State of System*).

## 4.7 Life-systems macro-algorithm calculation

A life system (e.g., a human society, sub-composed of systems) can be designed to be a viable system of earth coordination (management) that enables (rather than disables) life capacity, without loss, and with cumulative gain over generational time. To accomplish this at planetary population scale, a macro algorithm ("life calculation") for life support (in particular, and all services in general) is required to resolve a decision into a state change to the material environment. Algorithms facilitate coordination by automating information processes in order to proceduralize the environment so that intention can be executed more quickly. Algorithms resolve the ability (i.e., it takes algorithms to coordinate) at the system's, planetary-scale population level.

Thus, the proposed solution is, in part, an algorithm. Every algorithm has an input and output, the data goes into the computer, the algorithm does what it designed to do, and outputs (outcomes) the result. In social economics the data sets these algorithms most closely work with are known as "economic input-output tables". In every sense, an algorithm is a vector/purpose-based program of an instructional set, given meaning to by a designing user.

Every sub-system of the total societal system has its own algorithms, its own procedurally-based inputs and outputs. These algorithms process information via some operation in order to resolve some [issued] situation in some [intentional] direction, given an environmental situation of common resource access-ability. The social system has information-type algorithms that process socially accessible information in an optimal manner for their users with whom they are interfaced (Read: socio-technically interfaced).

In a society, the decision system uses information based algorithms that process access-decision information (for all information and material resources). A cyclic way of living one's life could be considered a life algorithm.

The material system is composed of an experienced, actualized, material environment and an experienceable, potential, material environment. The material information environment describes the materializing -encoding of algorithms into the lives of individuals among a population at global scale. The material environment itself is the material encoding of what was previously (recognized or not) a prior cognition of a social information- and decisional-based system. The materialized system is the built and larger universal environment that influences the builder in-kind. Technically, the algorithms present at this level exist in two dimensions (categories): they exist in the minds of individual humans, in their consciousness, and they exist in the built environment as materializations

of some cognition. In either case, it could be said that the algorithm is "encoded", into the mind or the real-time material environment. In the materialized environment, it could be said that there are algorithms present in two categories: universal algorithms as that which would exist regardless of "our" presence (e.g., ecological services and physics), and controlled-encoded algorithms as the intentionally re-configuration of the environment to express a given condition, where the condition[al feedback] is the algorithm. Architecture is the most well-known conception of a materialized algorithmic expression. As we all know, architecture affects cognition, consciousness, and behavior.

Architecture is a description of a boundary, which has been (or, is to be) designed, around some material (physical, real-time) environment. It is no great leap to understand that changes made to a materializing [environment] due to the design of the new materialized [environment] boundary.

Together, all these algorithms exist, unified or not, at the societal scale of [environmental] operation for human (and other ecological) intentional access fulfillment. These algorithms can be recognized by the experiencing population, or not. These algorithms can be designed by the experiencing population, or not. These algorithms can be open to participatory contribution and modification, or not.

## 4.8 Life-value analysis

**NOTE:** *The integrity of a value or societal understanding is only as good as how aligned it is with the lifeground of human need, which is the common ground that all humans share (as the human system).*

A life-value analysis is the documented discovery of all elements relevant to the fulfillment of all common human requirements. A life-value analysis is a tool to produce coherent common understanding of that which is of common life interest, the human and its dynamic relationship with an ecology. In some respects, a life-value analysis seeks to root out hurtful [mental model] abstractions (e.g., "rights" and "privileges") so that the next iteration [output of the society] is more integrated, understood, and optimally aligned with the explicit direction. A life-value analysis accounts for the human experience of environmental inputs and conditions. The output of the life-value analysis tool is data that may be used to:

1. Maintain or improve the ecosystem upon which organic life-depends.
2. Inform the design and operation of the habitat service system that produces and distributes services, goods and resources that satisfy the life-requirements of human beings, while ensuring:
  - A. Equity in access.
  - B. Health in biology.

- C. Well-being in life.
3. Satisfy the conditions of all higher human development, and do so universally.
4. Facilitate the discovery and expression of life-capacities.

Therein, that which is a necessity is a necessity because it is recognized and understood through a scientifically verifiable criterion of life-value (i.e., the output of life-value analysis), expressed as the discovery, identification, and logical ordering of humankind's:

1. Life services (inputs, needs, and other requirements; life necessities)
2. Life capabilities (life's potential capacity for expression)
3. Life orientations (values for the controlled encoding of decisions)
4. Life approach (methods for the controlled encoding of decisions)

Life-value analysis is a process to fully discover life needs and life's capabilities:

1. What are the human life needs, requirements range? The analysis begins with human [life] needs as its grounded direction, for humans are the potentially fulfilled.
  - A. The identification of human [life] needs begins with the [ecological] life ground, for humans exist within relationship to a naturally supportive [ecological] life environment.
2. What are the human life capabilities, functions range? Are life capacities more restricted or reduced in range without the life necessity (or good) than with it?
  - A. What capabilities are possible [in humans and the ecology], when fulfillment is optimal?
  - B. What capabilities are lost [in humans and the ecology], when fulfillment is sub-optimal?

**NOTE:** *In a market-State society, a life-value analytical result may be grounded in "rights" and "retributive justice". In community, a life-value analytical result is grounded in human needs and capabilities.*

### 4.8.1 Life-services (direction)

The life-value analysis identifies, and logically orders (prioritizes) humankind's universal life necessities, its required inputs. Therein, life-value is data about the real [world] life [system] requirements of human beings and the larger ecology in which human beings exist in inter-relationship:

1. What are the requirements of human life?
2. What are the requirements of human life support

- systems?
3. How are humanity's universal life necessities most optimally fulfilled -- with what categorization, composition, and frequency?
  4. What are humanity's necessary life [fulfilling] needs through to services?
  5. What do humans require to live full lives (given what is known, knowable, and available)?

#### 4.8.2 Life-values (orientation)

The life-value analysis leads [in part] to the explication of a set of values that maintain a strongly aligned relationship with the following attributes [of a common societal value system]:

1. Self-evidence insofar as its denial is nonsensical.
2. Universality across all domains and issues of value judgment insofar as there is no domain of value to which it does not apply.
3. Integration reduces presupposition in value judgments and conflicts across domains (safety).
4. Objectivity insofar as its value is independent of anyone's recognition.
5. Impartiality insofar as it cuts against or privileges no common life interest.
6. Completeness insofar as it includes every life form, domain, or change to ill or better in distinct or holistic comprehension.
7. Sovereignty in that it overrides any other value in cases of conflict.
8. Measurable in degrees of value insofar as greater/lesser ranges of thought, felt being and action can each/all be decided from any given reference body of value.
9. Contingent pattern of long-term evolutionary and historical development.

**QUESTION:** *What must humans value encoding if they are to optimize and adapt their fulfillment together?*

#### 4.8.3 The life-value test (method)

The life-value test (i.e., the life-value method) is a test used to tell whether any claimed value, however powerful it is in the world, is in alignment or not with a stated direction (survival and/or development). The life-value test is a calculation that uses data from scientifically establishable limits of life capacity range and the degrees of its reduction correlating with the degrees of deprivation of it. The parameters apply across need-capacity domains, with very different lines of necessity and loss from deprivation of different universal life necessities.

Insufficient breathable air leads quickly to incapacitation by the degree of deprivation, but deprivation of natural space or sunlight may take far

longer to show the loss of ability to function through range. Deprivation of a transportation system, on the other hand, is more complex and less dramatic in its effects, but is still expressed in life capacity loss.

#### 4.8.4 Applying a life-value analysis to society

**NOTE:** *The ancient formula of justice, survive and thrive together, is understood throughout a community-type society in systematic and objective life-value terms.*

In the context of the larger, unified societal information system the life-value analysis is a component of, and produces information into, the Social System Specification (in specific), and a significant portion of the fundamental structure of the societal project plan is derived from its information set. Through the encoding of human need and expressed capability, as the 'direction', value 'orientation' [decisioning] conditions and resources can be developed to ensure that decisions impacting the material environment (and common heritage resources) orient life in the direction of need fulfillment, and full life-capability expression, of all.

At the level of decisioning, those values that orient toward a specific direction can be encoded as algorithm sets within a larger combining system's level [decision] algorithm representing the decision system itself. Values become decision oriented decision spaces for a society, so it is essential to structure them intentionally [for fulfillment].

Community values (a specific type of orientational decisioning states) orient the resolution of decision spaces such that human need fulfillment is optimized (or adaptive). Life values (for community) are not determined by sovereign individual judgements about what is desirable. Instead, that which is of actual life value is that which enables life to survive, reproduce, develop, and freely express and enjoy its life-capacities. For finite living beings, consistently judging states (and circumstances) as valuable when their consequences for life-activity and life-potential are deleterious is self-undermining and ultimately materially irrational and harmful.

#### 4.9 The life-ground

The life-ground is everything that is required to keep living, fully. The life-ground is the conditions of all life and substantive value to each and everyone. The life-ground [of value] is the connection (relationship; need) between living things and the material conditions that sustain them, allow them to grow, and act in their intentionally fulfilling (characteristic) ways. Here, the objective "ground" is that of an informational-material landscape upon which there are resources (information and material) that can be mobilized (configured) into services for regularly completing human access fulfillment requirements.

Most simply expressed, all the conditions required

to take your next breath. Axiologically understood, all the life support systems required for human life to reproduce or develop. The life-ground is to be distinguished from the concept of "the life-world" which refers to background beliefs.

The life-ground is the base of all terrestrial value. It explains the validity of any and all positions by its relationship to life, seeking beyond competing partialities to coherence with life requirements without whose satisfaction life capacities are always despoiled. Human values and rules must cohere with the common life support systems that enable the fulfillment of all, or else disaster follows.

**APHORISM:** *Beyond the trauma, it is possible to communicate with, and to trust, Earth. The earth grows things that allow you to understand her in greater detail.*

Note here that the idea of cultural relativism (solipsism) is the negation of a common life-ground. The moral (orientational) consequence of encoding the disconnection of values from the "ground" (cultural relativism - where values are relative and not "grounded") is the higher and unnecessary potential for acceptance of whatever goals a social group proclaims, irrespective of their network effects or their implications for others (other groups), now or in the future. Solipsism cannot provide a universalizable direction (morality) of well-being, because it disconnects social decisioning from the life-ground of what humans universally, commonly require to live an optimally well life.

**NOTE:** *Life systems are self-organizing sets of sub-systems that perform separate and complementary functions for the generation of higher organismal functioning.*

Societies can be "grounded" in the life of the planet, in the [f]actual requirements of ecological and habitat services, or not. In fact, humanity shares one common life-ground composed of one primary, ecological service system, and a secondary, controlled habitat service system:

1. The life-ground is the ecology, for which the living complex is the biosphere.
2. The life-ground is the habitat, for which the living complex is the habitat service system.

The life-ground conception is composed of:

1. Earth life support systems - That which is common to all planetary life as a life-ground.
2. Human life support systems - That which is common to all planetary humankind as a life-ground.

The common life support system(s) of the planet are the first layer of the life-ground, which stretch out from

the cosmos through each individual human organism as a set of common human needs. The life-ground is that which resides in nature and extends into human population density's in the form of a controlled habitat service system. The life-ground is another term for the life support systems (natural and human-made systems), without which human beings cannot live, or are unlikely to live well. The life-ground includes those systems and relationships that have value, so far as humans (and other sympathetic life) cannot exist or flourish without them.

**NOTE:** *It could be said that human needs clarify the composition of the life-ground.*

For humankind, life needs (or necessities) are that without which life capacities are lost. Therein are life resources and necessities that are required for human flourishing; these form the life-ground. The term 'life-ground' refers to the presence of a common materiality (and relationships therein) in the fulfillment of the life-existence of humans, who are [at least] material. The life-ground is the real and experienced base of all fulfilling (i.e., "legitimate") societal structures - what they must account for and cohere with to be morally valid. The life-ground [of humanity] is (described as):

- A vital platform of [life] support systems upon which all real-world beings exist. Therein, it could be viewed as a set of service-fulfillment relationships, both explicit (e.g. the habitat service system) and implicit (e.g. eating, dwelling, and seeking medical assistance).

The life-ground [of humanity] is (sub-composed of):

1. **Environmental outputs/signals:** These are signals produced outside the boundary of the individual human with a set of needs.
  - A. **Ecosystem [habitat] services** - Production of specific, native composition and frequency of environmental signals.
  1. **Controlled [habitat] services** - Production of controlled environmental signals to provide *certainty* of fulfillment of human needs.
2. **System inputs/signals:** These are signal-response connections that excite (allow for) continued and/or greater capacity.
  - A. **Human needs** - Necessity for [reception of] specific composition and frequency of environmental signal to develop and maintain capacity. Humans must maintain a frequency and composition of connection to the outputs of the life-ground (a set of specific environmental signals).

An adaptive, sustainable society encodes (operates through) fulfillment-oriented structures that consistently

enable individual human fulfillment commensurate with the reproduction of terrestrial life support systems through generational time.

#### 4.9.1 Ecological theory

*A.k.a., Bronfenbrenner's ecological systems theory.*

Ecological systems theory (also called development in context or human ecology theory) offers a framework through which individuals exist in relationship within communities and the wider society. Humans will necessarily encounter ecological systems composed of different environments/dimensions throughout their lifespans, and these exposures may influence their behavior to varying degrees. These systems include the micro system, the MesoSystem, the ExoSystem, the Macro System, the Micro System, and the ChronoSystem. Then there is the InfoSystem (information), AlgoSystem (algorithm), HabSystem (habitat), and TeamSystem (contribution). In a living ecology, there is also a biosphere where ecological theory applied in kind, reducing it to a series of understandably inter-related and inter-dependent systems that produce a parameter of conditions for life.

Life needs ecosystems:

1. Basic needs - Ecosystems provide most of the material needs of humans.
2. Economic needs - Efficiency by which ecosystem services are converted into the fulfillment of human needs [for service].
  - Examples of direct interaction of ecosystem condition and services and economic well-being include renewable and non-renewable natural resources, tourism, fisheries, and agriculture, tourism, recreation, fisheries, and agriculture; beauty parks; park-city life-work environments.

It can be easy to confuse 'ecosystem services' with the 'environmental needs' associated with human 'well-being'. Ecosystem services are the services actually provided by the ecosystems in question; for example, alterations in nitrogen concentration in water, alterations in carbon concentrations in the air. Environmental needs are equivalent to Maslow's hierarchy at multiple levels (e.g., physiological, safety, and aesthetic needs) and would relate to an individual's or population's demand/desire to have clean water and air, minimal exposure to toxic contaminants, minimal light and noise pollution, acceptable levels of biodiversity, acceptable levels of safety, acceptable level so of activities, acceptable levels of environmental conditions that are significantly distant from ecological tipping points.

#### 4.9.2 Ecosystem life-ground analysis

*A.k.a., Ecosystem service limits, ecosystem value-analysis, ecosystem capacity-limit determination*

There exists a repository of information relation the persistence of organisms on/in a landscape, and wherein, there are natural and human behaviors. The Encyclopedia of Life Support Systems (EOLSS) describes ecological limits, given what is known. Ecosystem services have limits; they have capacities. Earth's ecosystem services include:

1. Water purification.
2. Air purification.
3. Radiation protection.
4. Soil formation/fertility.
5. Climate control.
6. Food/fiber production.
7. Nutrient cycling.
8. Thermal control.
9. Waste decomposition.
10. Disease/pest control.

#### 4.9.3 Ecosystem services

*NOTE: The overexploitation of an ecosystem (any eco-system) may temporarily increase material well-being and alienate immediate poverty, yet prove to be unsustainable, and in the end, severely reduce material well-being and increase levels of poverty.*

Ecosystem services are the benefits that society receives from ecosystems. It is possible to measure how changes in ecosystem structure, functions, and processes influence the quantities and qualities of human fulfillment (as ecosystem service flows). The presence, design, and functioning of ecosystem services will influence the freedoms and choices available to a population (because ecosystem service produce resources). Ecosystem services can play a role, sometimes a significant role, in the basic needs associated with human well-being, ranging from a somewhat minor role in InterSystem tasking, to a major role in childhood development.

Ecosystem services are material systems. Material systems have needs that must be met in order to remain in material existence. Ecosystems have needs in order to maintain the existence of the ecosystem (as a living system). Humans have needs which depend on ecosystem services. In order for humans to continue to have their human needs (human requirements) met, ecosystems must have their ecosystem needs met. The following ecosystem "needs" are viewed from the human perspective:

1. Caretaker maintenance of the ecosystem by humans - humans can take care of the ecological environment of the planet by maintaining ecosystem services that provide for the continued

availability of life. It is possible for humans to improve the wild natural "landscape" for life.

2. Protection of the ecosystem by humans - warning and protection systems against planetary environmental degradation and natural and man-made disasters. It is possible for humans to protect the wild natural "landscape" for life.

An ecosystem is a dynamic complex of macro and micro organismal systems and the non-living environment, interacting as a functional unit. As the apex planetary species, humans are an integral part of the planetary ecosystem. Ecosystems provide a variety of benefits to organisms therein, and for humans, these include: supporting, provisioning, regulating, cultural, and supporting services.

Ecosystem dynamics form ecosystem services that fulfill the needs of organisms (or not) in the ecology, including human well-being. Natural ecosystems perform fundamental life-supporting services (functions) upon which human organisms depend, and which can facilitate or hinder human well-being. These services are the result of natural principles, and do not cost the world's population in an abstraction (e.g., currency is not encoded, and neither profit, nor the behavior consequences therefrom, some of them result from a negation of reasoning to root, system-level conception). Life itself, as well as the entire human system (and the economy in particular), depends on goods and services provided by Earth's natural systems. Human pressures on the environment can profoundly influence the functioning of natural systems, optimizing or reducing the quality, quantity, and delivery of these services. It is important to note here that the flow and delivery of these services depends on the presence and application of a unified societal information system and biophysical processes.

Climate change, bio-diversity change, resource degradation, ozone depletion, global elemental cycles, biodiversity change, chemical contamination of food, air and water, alien/invasive species have all been shown to have negative effects on physical well-being at localized and global scales. Positive impact through engagement with the natural environment and its services has been documented on psychological well-being individually and at the community level. Communal green spaces in urban areas have been linked to higher levels of community cohesion and social interaction among neighbours. (Kuo et al., 2001) Pretty et al., (2007) demonstrated the impact of access to green space on both physiological and psychological well-being.

Ecosystem services (or more accurately, ecosystem-habitat services) are the beneficial usable functions provided by ecosystems to humans. These functions are generally distinguished as provisioning, regulating, cultural, and supporting (services). In society, these services may be co-produced by humans and nature (in the form of a controlled habitat service system). As ecosystem services have direct and indirect impacts

on human well-being, they must be accounted for in planning and materializing.

Here, the idea of 'ecological safety' is that there is sufficient data, given what is known, to state that environmental ecological inputs (and conditions) are sufficiently far from ecological tipping points (equating to a loss in local and global access to required inputs, humans reasonably desire to live within environmental safety parameters and protocols when interacting with the larger ecology, in order to ensure continued access abundance (and sufficient encoding of our elevating values with the fulfillment of our needs).

**NOTE:** *In the market, ecosystem supporting services are known as "externalities", which means they are external to that which is accounted for. Markets and policies (authority-based rules) are often unable to value ecological services.*

#### 4.9.4 Ecosystem services and environmental needs

It can be easy to confuse (interpose) ecosystem services with the environmental needs associated with human well-being. Ecosystem services are the services that are actually provided by the ecosystems in question (e.g., reductions in nitrogen concentration in water, reductions in carbon concentrations in the air), regardless of whether humans are present or not. There is a flow of material and information between the larger ecology, and the human system. At a fundamental planetary level, humans exist because of ecosystem services. The direct influence of ecosystem services on the quality of air and water is obvious, and the desire of individuals to have air and water quality that is as good as possible seems simplistic.

Ecosystem services may be modified by the habitat service system (the city systems). For instance, air quality can be improved by air purification services that moderate airborne particulates, air temperature, and humidity. Similarly, the habitat service system could pass some of its water through natural ecosystem services to modify its composition and structure.

Direct and indirect experience with nature has been and may possibly remain a critical component in human physical, emotional, intellectual, and even moral development. Think of ecosystem services as nature, and environmental needs as a sub-category of human needs. Herein, 'biophilia' is the proposition that humans have a fundamental, genetically based human need and propensity to affiliate with nature.

There is a relationship between **biodiversity**, ecosystem services, and humans' operational service fulfillment. Changes in biodiversity, through changes in species traits (and behaviors), can have direct consequences for ecosystem services, and as a result, individual and social activities. Biodiversity and human well-being are linked, and that relationship is well established.

Ecosystem services are a conceptual through to physical device or “vehicle” that can be used to help humans visualize the importance of the flow of all elements through nature, themselves an integral part of the functioning of nature. One of the greatest problems inherent with today’s decisioning is the production of unintended consequences that often create a situation worse than originally existed. Consideration of nature, of ecosystem services, will minimize risk to human existence.

#### 4.9.5 The ecosystem services

Ecosystems provide well-recognized provisioning services (goods), including water, timber, forage, fuels, medicines, and precursors to industrial products that are harvested from ecosystems. Ecosystems also provide regulatory services such as recycling of water and chemicals, mitigation of floods, pollination of crops, and cleansing of the atmosphere, as well as cultural services that meet recreational, aesthetic, and spiritual needs (Figure 4; Daily 1997; MEA 2005). All of these services depend on ecosystem processes that are sometimes known as supporting services. These processes include bio-geo-chemical cycles, diversity maintenance, and disturbance cycles.

Basic ecosystem services are a clear and vital requirement for human well-being. All of the ecosystem services (#2-4 below) depend on ecosystem processes (#1 below) that are sometimes known as supporting services. The following categories represent the human-usage of ecosystem services:

##### 4.9.5.1 The primary ecosystem processes

An ecosystem is composed of objects and processes:

- **Ecosystem processes (a.k.a., ecosystem cycles; supporting ecosystem services)** - These are the fundamental/axiomatic ecosystem services that make it possible for the ecosystems to provide services such as food supply, flood regulation, and water purification. The so-called “supporting” services are regarded as the basis for the services of the other three categories of benefit. Supporting services are functions that foundation all of the other services.

Examples of ecosystem processes include,

1. Bio-geo-chemical cycles.
2. Soil formation.
3. Primary production (intra- and inter-species).
4. Nutrient cycling.
5. Water cycling.
6. Biodiversity.

Unless these underlying ecosystem properties (processes/cycles) are maintained, other services that are more directly recognized and valued by society (#2-4

below) cannot be sustained.

##### 4.9.5.2 The ecosystem services (human need satisfiers)

Ecosystems maintain the following types of service:

1. **Provisioning services** - These are products of ecosystems that humans use as raw materials.
  - A. Water supply.
  - B. Food production (and medicinal resources).
  - C. Raw materials/resources (e.g., minerals, biogenic materials, wood, etc.).
  - D. Energy and power production.
  - E. Genetic resources (genetic diversity).
  - F. Aesthetic (“ornamental” or visual) resources.
2. **Regulating services** - These are the control processes that maintain an equilibrium for the persistence of life.
  - A. Soil quality (soil regulation).
  - B. Air quality (air regulation, air condition[ing] regulation).
  - C. Climate regulation.
  - D. Water regulation (hydrology, water purification).
  - E. Terrain regulation (e.g., flood regulation).
  - F. Disease regulation (disease and pest control).
  - G. Waste decomposition and de-toxification.
  - H. Pollination.
3. **Socializing services (a.k.a., aspirational services, social services, “cultural” services)** - These are the human generated benefits (material and non-material) that result from human interaction with a social environment.
  - A. Discovery (including use of nature for scientific discovery).
  - B. Learning (including use of nature for education activities).
  - C. Location.
    1. Spiritual (including use of nature for spiritual events).
    2. Historic (including use of nature for heritage events).
    3. Including: Solastalgia [neologism] - describes a form of separation distress caused by environmental change.
    4. Including: Topophilia [neologism] - the feeling of affection of which individuals have for particular places.
  - D. Recreational experiences (including direct, such as walking and climbing through nature; or, indirect, such as a racetrack through nature).
  - E. Aesthetic (for healthy consciousness and psycho-physiology) In order to maintain healthy psychological functioning we need natural beauty, biomimetic-aesthetics, and in order to sustain beautiful environments, we design

- in accordance with these natural biophilic-aesthetic patterns.
- F. Therapeutic (for recovery and optimization; and including (e.g., physiotherapy and animal assisted therapy).
- G. Digitization/recording (including use of nature as motif in books, film, painting, symbols, and architecture).

#### 4.9.6 Ecosystem services and human well-being

In order for humans to maintain well-being, the larger ecosystem of which they are a part (within which their controlled ecosystems (habitat service systems, or "cities") exist. The larger ecological system has its own requirements that must be sustained for continued existence on the planet in a state of well-being.

The dynamic relationship between ecosystem change and human well-being has both current and future dimensions, and short-term impacts to the ecosystem may not have the same direction as longer-term impacts. For example, the overexploitation of an ecosystem may temporarily increase material well-being and curb immediate poverty, yet prove to be unsustainable, and in the end severely reduce material well-being and increase levels of poverty.

There are a multiplicity of interactions that influence the dynamics of ecosystem functioning. These influences vary from negligible to major. Biological through to planetary processes, by definition, are integral to ecosystem functioning.

Relationships between ecosystem services and enhanced physical or mental health indicate a direct influence on human well-being. Furthermore, influences of these services on human/childhood development and cognitive learning represent a linkage between ecosystem services and well-being. Many studies have described effects of ecosystem services on physical health and exposure to disease. Reduced recovery times from surgery and reduced pain have been associated with the simple service of trees and functioning ecosystems being in view of the recovering organism.

The well-being of the human population may be understood within an ecological and ecosystem services framework, as an expression of the life-supporting capacity of the environment (a cosmic service).

The connections between ecosystem services and psycho-social health have been well documented, and are easily experienced. The restorative benefits of nature suggest an integrative framework that accounts for the larger context of human-to-environmental relationships.

Natural environments are particularly rich in the characteristics necessary for restorative experiences. The following incomplete set of [interaction] characteristics are indicative of natural experiences: natural forms, shapes and textures; sunlight and its absence ("darkness" or "shadow"); dynamism, growth

and its absence ("decay"); molecular motion and its absence (aromatics and surfaces); motion and its absence ("stillness" or "silence"); thoughtfulness and its absence ("thoughtlessness" - as "zen", "mindfulness", or "careless").

The interactions of natural settings and childhood development are not completely understood but the absence of this interaction has been dubbed as "nature-deficit disorder" by those who see the benefits of nature from within a society where nature is significantly absent.

The desire by individuals and society to minimize exposure to toxic contaminants clearly relates to desires for good physical health. Toxicants can affect ecosystem services in numerous ways, with many of them ultimately relating to human health. Ecosystems can provide filtering and sequestering services to reduce human exposure although these processes may endanger health indirectly through food consumption. Light pollution or night sky pollution directly affects an ecosystem service (darkness) that has been shown to impact sleep and potentially human health (Chepesiuk, 2009) as well as causing deaths of migratory birds and sea turtle hatchlings (Longcore and Rich, 2004). Even light can become a toxicant at night to other species under certain conditions.

#### 4.10 Symbiosis

The word symbiosis literally means living together (from Ancient Greek σύν, syn- "together" and βίωσις, bios- "life"). The word "symbiosis" conveys the meaning that (one) lives together (with another). In a strictly biological sense it refers to organisms that live in close approximation; often one cannot live without the other -- there are interconnecting and life-supporting relationships that are necessary for continued biological survival. Symbiosis can occur between organisms of the same species as well as between two or more different species.

There exist 4 types of biological symbiosis:

- Parasitism** - parasite benefits, host is hurt. The parasite meets its needs at the expense of the fulfillment of the host's needs.
- Commensalism** - one species benefits, the other is neither hurt nor helped.
- Mutualism** - both species (or organisms) benefit. When two organisms of the same species cooperate toward mutual, common fulfillment then mutualism may be said to occur.
- Mimicry** - one species imitates another to gain the benefits enjoyed by that species. For example, a Banded snake eel mimicking a venomous sea snake in order to deter predators.

The very idea of "symbiosis" conveys the understanding that there exists an interrelated nature (or reliance) between all environmental life on Earth.

This understanding is crucial for the emergence of the concept of sustainability. And, without this understanding there is no socially intelligent direction for human ingenuity when utilizing the Earth's resources. It is unrealistic to expect that someone who has been enculturated into a scarcity-driven society will have the ability or understanding to outgrow the desire for resource possession [at another's expense] if they do not fully understand symbiosis, sustainability and the emergent nature of understood thought.

Humans are bio-psycho-social organisms and are affected by their environment in subtle and complexly symbiotic ways. We live in a world community, and it is about embracing that global relationship.

## 5 Need

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*A.k.a., Need, demand, requirement, desire, motive, gap, state, measurable life element, satisfier, mandatory, essential, imperative, will (biological).*

A need is something that is required [for some things existence and/or function]; it is a type of demand placed on the environment by a system (internal and/or external of boundary). Note here that any given individual having needs doesn't make that individual needy in any pejorative sense (i.e., having needs doesn't make "you" needy in a bad sense. In a purely technical (engineering sense), a need is a gap between current and desired results (not as insufficient levels of resources, means, or methods). Socio-psychologically speaking, a need is typically characterized as an inner motivational state. Observationally and socially, a need is a goal state (safe, healthy, etc.). Human needs are objective, plural, non-substitutable, and satiable (cyclically). It is possible to be unaware of one's own [true, truest potential] needs. Needs generate (cause, create, initiate) [the cycle of life-form] behavior, but are not the totality of the expression of behavior [of the life-form]. Need refers to a particular category of goals which are universal -- needs are related to the survival and flourishing of a base operating system for the human experience. Needs contrast with wants, which are goals that derive from an individual's particular preferences and cultural environment. A need is a gap in results that must be cyclically complete for them to be health through thriving. Humans, like all organisms on Earth, are determined to meet their real-world needs (as best as possible). Needs are empirically existing categories of fulfillment (for humans and ecological services). All organisms seek the completion of their needs on an as required/appropriate basis (cyclical/continuous basis); a cyclical will to complete something or have something completed.

In community, people have empirically existing categories of [human need] fulfillment:

1. Needed resources [given required service fulfillment]. All world conditions are composed of resources (resource compositions). Thus, the user has requirements for specific configurations of needed resources.
2. Needed states [of service/support fulfillment; conditional support/service states]. Here, the user requires a specific internal and/or external state of the world (set of world conditions) to feel complete.
3. Needed behavior [to fulfill the needs of oneself and others; to fulfill and to be fulfilled]. This behavior exists on both the side of the user as well as the side of the producer. The "producer" in community includes both the global habitat service system as well as the planetary ecological service system.

4. Needed feelings [given human potential for great well-being and flourishing]. To fulfillment of need is felt and experienced as connection.
5. Needed solutions for completing human needs together within society, and on a single planet.

All behavior exists to meet needs, some of which have preferences. There is a lot of psychological research that human behavior is directed to meet needs and is highly routinized ("habituated"), and most of it (in early 21st century society) is coordinated by unconscious brain functions (reflex activities). Therein, the more activities are reflexive, the smaller the decision space (i.e., the smaller the conscious intelligence). Hence, it is essential to construct a societal, and therein, economic system, where the routinized behavior feeds back through the real-world into the [f]actual fulfillment of human need, indicating movement along the direction of flourishing and well-being. Decision spaces and behaviors are conformed by societal structures. In a market-State, the procedures, structures, and the imperative (created by capitalism to maximize profit) are more important than the people. In a community-type configuration of society, the people are user-contributor-users who agree explicitly to community standards, who have needs, and live within the bounds of a limited ecological service system (Read: the plane Earth).

In a broader sense, 'needs' are means, namely shapes, conditions, objects, activities, feelings, opportunities, or services, required for achieving required desirable goals. Need conceives of a motivational (intentional) force (drive) instigated by a state of disequilibrium or tension set up in an organism because of a particular felt lack [of a solution-completion, and that requires conscious attention]. Needs could be considered a particular category of imperative (e.g., human[e] direction or goal) - as that which is experienced as universalizable [to everyone in the species], because they are necessary conditions for flourishing, and for avoidance of suffering and serious harm to individuals in that species. In this sense, it is a 'need', because it is 'needed by everyone' - a [societal] systems-level recognition of an imperative direction. There is resistance (challenge) to the meeting of needs due to the entropic nature of the universe. Resistance forms the space for negative efficiency. All efficiency is negative; there is only the optimal ("best") that can be done up to now.

Note that need-based imperative/directive statements are more exigent than other sorts of statements that make demands [on the environment for resources and services]. A need-based statement asserts that unless the stated condition is met, the goal (a capacity or condition, a destination or resolution), cannot be realized. A need is a gap between what *is* and what *ought* to be [for a capability or condition to be expressed]. Completing a need leads to some measurable, desired (intended, positive) outcome or result[ing shape or condition].

**NOTE:** *Need is like requiring without yet*

*acquiring -- 'to need' is equivalent to 'to require'. A need, or requirement, may be otherwise called a 'demand for service'.*

The simple systems definition of a need is:

1. A need is that without which a systems capacities/abilities are always decreased.
2. A need is a relationship that when completed [with spatial or informational content] sustains or improves the state (condition, and/or dynamic) of a conscious entity, who is in embodied relationship.
3. A need is a construction plan, temporarily formed to allow consciousness to develop and experience more greatly the all.
4. A need is a service[able] habitat, temporarily formed to allow the global human population of conscious entities to live, experience and grow together at a global scale.

All needs can be, for any given organism, met in two basic ways (given, an understanding of the real-world complexity of meeting any actual need):

1. Self-met (a.k.a., self-fulfilled, from breathing to eating ad moving).
2. Serviced (a.k.a., met by others, in a societal-habitat configuration).

From an environmental systems perspective,

1. A need is the reason a system requires outside environmental input.
2. A need is the [labelled] state where environmental outputs or conditions co-join with an internally bounded structure to make or evolve a system.
3. A need is the [labelled] reason for the functional existence of some system.
4. A need is the [labelled] input conveying the potential for expressing greater "ability".
5. A need is the [labelled] input that creates or sustains a specified capacity or condition in a particular system.
6. The concept of a 'need' refers [in part] to a relationship between some environmental system and a subject system, wherein some action(s) fulfill the relationship expected by the subject system.
7. A need is a gap between what *is* and what *ought* to be [for a capability or condition to be expressed].
8. A need is a requirement to access a particular environmental composition at a particular time interval.
9. A need refers to a drive or a potential (capability).
10. A need is a requisite for achieving an objective. Thus, the requisite's necessity depends on the status of the objective, and on how essential it is

- for reaching that objective.
11. Needs give goals their psychological potency and influence which regulatory processes direct people's goal pursuits.

From an entropic (Read: information coherency) perspective,

- A need is anything that when deprived of results in harm or lost potential [ability]; the loss of a greater decision space to embodied consciousness; the loss of overall information coherency and integration available to embodied consciousness, less well-being or greater suffering.

From a scientific perspective,

1. A need is some "thing" required for existence or function.
2. There is knowledge available about what humans need; methods available to acquire more information about what humans need.

From an engineering perspective,

1. A need is a gap between the current and desired.
2. A needs is a desired state, an end goal.
3. A need is a requirements.
4. A need is a representation of a problem or constraint, with potential value to a system.
5. A need is some relationship with the potential to orient ("deliver value to") a system by solving a problem or conforming to a constraint.

**NOTE:** In engineering, needs must be principally logically (linguistically, conceptually) linked to measurable abilities to ensure the coherence of their realization. Linguistically, an analysis is a search for description and/or explanation given [some set of] data. Synthesis is creative construction into materiality from a set of data consisting of self-awareness and greater technological capability. Humanity presently has the ability to build million individual garden-like circular walking cities in a grid-like manner spanning some current market-State jurisdiction that has the self-awareness to facilitate the design and execution of a model that accounts for the common heritage and all of human need, among a population of individuals who are open to understanding that a common model for human need fulfillment is attainable and sustainable, and is at both the planetary, and many lesser, scales.

From a genetic perspective, the purpose of a genetic [human] life is (in part) maintaining the genetic [human] species. This purpose derives into three tasks that involve:

1. Staying alive and surviving.
  - A. These are basic needs, given 'life' organization.
2. Fecundity (the ability to produce an abundance of healthy offspring) and upbringing.
  - A. These are basic needs, given 'genetic' organization.
3. Exploration, self-development, and coordination.
  - A. These are basic needs, given an 'uncertain' environment (i.e., it is better to learn about, share, improve, and coordinate together if the genetics are to be passed on in an uncertain environment, or even better for consciousness, to be improved upon).

In order to embody genetic material with consciousness to become a human life in an uncertain environment (i.e., be human here now in a consequential physical environment), the following is [at least] required:

1. Humans embody [on surface, 'land'].
  - A. Humans locomote [land/ship cycling].
2. Humans absorb and expel.
  - A. Humans breathe [atmospherics cycling].
  - B. Humans eat and drink [materials cycling].
  - C. Humans procreate [genetics cycling].
  - D. Humans bleed [vehicle/body cycling].
  - E. Humans enlight [spirit cycling].
3. Humans shelter.
  - A. Humans separate from biospheric elements [architecture/building cycling].
4. Humans tool.
  - A. Humans use informational and spatial transformations to improve the ability to express intention [power cycling].
5. Humans coordinate.
  - A. Humans communicate useful information, activities, and outputs to improve the ability to integrate intention [information cycling].

Simplistically speaking, "we" all do on this level is running around, trying to eat, trying to have sex, and get some sleep. That's what we do. Breaking these tasks down into activities, these are food gathering aka grocery shopping, being socially active aka socializing, aiming at getting a well-paid and ideally inspiring job, and so on. And these activities derive into needs. Needs are for example maintaining a healthy nutrition level or aiming for an adequate social standing. Also, we express these needs. Humans say things like "I really like you, I think you're a really nice person" to build inner-human relationships or "I love this company" when they want to get or maintain a certain job.

**CLARIFICATION:** When value is being realized through a service, the service is often called a 'solution'. When value could be increased or realized through a service, the service is often

called a 'need'.

Other technical terms for a 'human need' include:

1. **Human requirement** is another technical term for a 'human need'. Human needs become human requirements within an engineered societal system.
2. **Common constant constraint** is another more technical term for a 'human need'. Human need categories are common to all humans, and represent a constant constraint to human fulfillment in the real-world environment.

Resources, services, and other environmental signals and conditions "complete" the needed relationship, wherein the environmental object or condition is the satisfier (input) of the need. Needs have to (must, ought to) be satisfied if at all possible. Therein, needs are served by satisfiers.

A habitat service system (city) could be designed as a solution to the problems of human need fulfillment by coordinating access to services as satisfiers. The subsystems of the habitat manifest themselves in concrete usage patterns. A usage pattern is observed as people being motivated by certain values using services and objects for a specific purpose in a particular environment (e.g., in a city, the service circulars and sectors provide for these functions) at a repetitive interval. It is thus an integrated pattern of thinking and doing that becomes a well-functioning habitat with a flourishing population. Usage patterns can be determined through research and provided for by engineering. This pattern is observable and to some extent understandable independently of a particular model of human needs. It is thus important that usage patterns form the basis of research on the way in which people satisfy their needs by living in a habitat.

It is possible to develop and maintain a plan of service (Read: operational service system plan) that addresses the integration of human physiology, human psychology, human performance, and the interconnected system of the human and habitat in a highly integrated manner.

Needs occur in space and time, and hence, they may be physically and temporally indexed (i.e., need at time,  $t$ ). Together, human needs are best expressed in the form of a spreadsheet or database, although they are often seen visualized within a triangle, square, or circular shape.

Where **needs** describe priority functioning, **satisfiers** describe that which is environmentally necessary for the functioning.

In system's usage, needs are complied into lists, so that categorization, sorting, prioritization, and statistical calculation are possible on the data set:

1. A 'needs list' documents the exigent inputs and/or conditions needed [for a system].
2. A 'human needs list' documents the exigent inputs

and/or conditions needed for human survival and flourishing [for the stability and continuation of a human societal system].

**CLARIFICATION:** *An information need is an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need (or, motive) for information. Information demand refers to a demand that may be vocal or written and made to a library or to some other information system.*

## 5.1 The fundamental structuring of 'need'

**NOTE:** All living bodies contain and can read instructions in deoxyribonucleic acid (DNA).

The structured expression of 'need' is described by access to a specifically desired environmental composition using time to complete a system cycle. In other words, the completion (i.e., fulfillment, achievement, etc.) of a need necessitates an environmental structure that includes two variables, composition (formation) and frequency (timing):

1. **Composition:** What is the form/structure of the satisfier? How is the relationship composed? How is the relationship not composed?
  - A. Needed composition - that which is optimal or adaptive.
  - B. Actual composition.
2. **Frequency:** What is the frequency of the satisfier? How often is the relationship initiated? How often is the relationship concluded? The frequency of a need can be any of the following:
  - A. Continuous.
  - B. Periodic (cyclical).
  - C. One-time, Multi-times.

In their completion, each of the two variable attributes (composition and time) have a performance measure of one of the following (as fulfillment completes):

1. **Optimal** - the frequency and/or composition of the completion of the relationship is the best available to maintain capability.
2. **Adaptive** - the frequency and/or composition of the completion of the relationship is not the best available to maintain capability, but is the best available for adapting/extending capability.
3. **Sub-optimal** - the frequency and/or composition of the completion of the relationship is not the best available to maintain or extend capability.

Every need state [identity] is composed of these three concepts (meanings):

1. **Focus** - what is your attention on? Focus on your desire, on your desired feeling. Feeling is life.

2. **Language** (word construct) - what are you saying to yourself? What is our running commentary in our heads creating meanings and interpreting at every moment? Is the commentary empowering and expansive or limiting? Emotion is life.
3. **Physiology** - is the foundation of all effective focus and change.

In terms of the meaning of a need for service, service states may be designed to meet specific needs (and wants) of people. There is a direct relationship between the need and the output. These outputs can be categorized in three ways:

1. **Desirable to undesirable.**
2. **Intended to unintended.**
3. **Immediate to delayed.**

## 5.2 The substitutability of 'need'

**TRUISM:** *There is a common desire for accessing what is needed, when it is needed, at a cycle that is needed.*

Substitutability refers to the ability, or not (non-substitutability), to substitute one capability or object (e.g., a decision, need, resource, case, etc.) with one set of properties for another object with another set of properties. In [economic] decisioning there exists the idea of demand substitutability. A state of substitutability exists if one course of action, can be substituted for another, and obtain roughly equivalent outcomes in terms of their prefer-ability. The question is: Does substitutability exist between two decisions (courses of action), or not? Substitutability is a binary state between two courses of action—it either exists or does not. If it exists, then there is a state in which two courses of action can be substituted for one another “without loss”, without a significant change. In the context of society, this “significant change” is the prefer-ability of outcomes expected to follow from deciding between various courses of action. A state of substitutability exists between two sets of decisions (e.g., economic behaviour) if it is possible to swap one for the other, and then, to find no significant change in the prefer-ability of outcomes. If a point of substitutability does not exist, then there isn’t a state in which two courses of action can be substituted for one another without a significant change in the prefer-ability of outcomes predicted to obtain from them.

As organisms, humans have two types of [economic] relationship with the environment in concern to demand substitutability:

### 1. Non-substitutable needs (threshold needs)

- encompass all needs (fundamental demands) required for well-being (as in, states of being: happiness, consistent flow, consistent health, etc.; e.g., states of having: food, energy, shelter,

transportation, contribution, etc.; e.g., states of doing: dwelling with a beautiful versus ugly view, nutrient rich food vs. poor quality food). Threshold needs (e.g., food, water, buildings, etc.) are things someone cannot make oneself endogenously, and must acquire exogenously. If some course of action doesn't satisfy a need, it simply cannot have expected outcomes as preferable as those associated with some course of action which does, and there is therefore no point of substitutability between the two. Herein, non-substitutable needs are met by tangible resources.

2. **Substitutable needs (non-threshold needs, not true needs, preferences)** - all the preferences (want demands) that may be nice to have, but are not necessary for well-being (e.g., using a boat to go fishing now instead of scheduling its use, using a gold toilet, cooking with conduction instead of convection, or eating one apple off a tree in an orchard instead of another apple off another tree in the same orchard).
  - A. In community, substitutable needs are decided by the critical selection of methods and “weighing trade-offs”, establishing an order of necessity.
  - B. In the market-State, substitutable needs are decided by the imposition of a dictatorial hierarchy, establishing an order of necessity.

Substitutability for the individual with the demand could exist between a flat white coffee and a latte (a slightly different white coffee), if the consumer expected roughly equivalent outcomes in terms of prefer-ability to follow from their drinking. To someone with a highly refined, sensitive palette, the difference between the two coffee drinks may not be substitutable; the variety and/or quality of the beans in the coffee or the same for the milk, may not be substitutable.

In community, a state of substitutability is likely to exist between two transport vehicles of the same category in two different cities, because they are built in the same optimized way with optimized locomotion, power efficiency, structural integrity, safety, etc.

**NOTE:** *Where there is need, self-denial is self-destructive, because self-denial is denial of a signal from the self that something is missing.*

## 6 Life needs

*A.k.a., Life-needs, life necessities, life requirements, life qualities, life attributes, life sciences, life studies.*

Organisms require certain environmental conditions (elements) to survive and to thrive. For example, biologically based need conceptions posit that organisms require certain requisite goods for healthy functioning, such as water, air, sleep, etc. These services and goods are requirements. All living organisms must satisfy (i.e., fulfill) their need for external, environmental system input, and stable internal conditions. Here, need are a-cultura/a-preference attributes of embodied conscious human existence together. Living systems are complex adaptive systems. Life needs are a first principle look at oneself and other selves as animals, and coming to the realization that animals have requirements for survival, flourishing, and successful reproduction.

A life need is something that is necessary for a living system (or 'organism') to maintain a healthy and fully satisfied life, from survival to flourishing (over generations). Needs are the 'nutriments' (or necessary conditions) that are essential for the ongoing growth, development, integrity, and well-being of all individual human beings regardless of culture. They are a component of the nature of a living organism and lie on a spectral continuum (i.e., a 'spectrum'). Herein, a human need is a state of felt deprivation of some basic, axiomatic form of human satisfaction, which requires energy and integration for the persistence and development of [embodied] consciousness. When deprived of the fulfillment of any need an individual is reduced in their life capacity. Hence, an unsatisfied need is a force of motivation, and by definition it requires some form of thoughtful and decisive action (Read: thought + decision + action). Human action is principally based on needs as a primary motivating fact[or] of behavior, and secondarily based on values. Values exist to orient individuals toward the fulfillment of their needs; they organize and orient toward [dynamic] states of fulfillment. Human need is the foundation from which humans have always operated; however, individual humans and society at large can forget that they have needs, and also, be conditioned to desire circumstances that inhibit need fulfillment.

What an organism (e.g., humans) needs in order to be happy and healthy was honed through its shared phylogenetic development, forming a basic set of inputs for all individual organisms of a species (e.g., for humans-people). Therein, individual's of a given species (e.g., individual plants) may vary to some degree in how much they can tolerate water deprivation, for instance, but this variance is constrained by the para-meter-ization of the need across the species.

Though perhaps not all individual humans, as members of a social species, suffer to precisely the same degree from access exclusion, there are likely few,

if any, who fail to feel a loss of fulfillment or increase in suffering. It is not necessary that the need processes are completely invariant for universality to hold; people can develop different dis-positions [onto-genetically] concerning phyo-genetically constant needs.

The best and most simple definition of living (alive) is:

1. 'Living' (or, alive) is a natural object that intentionally moves [primarily] against gravity, against the path of least resistance. A living entity can move against that natural progression of nature.
- A. Living is significantly a self-generating and self-sustaining system. A bird is alive because it can resist gravity by will of its body. An airplane can only do so because it has fuel added to it, and pilot-computation system added to direct its actions. A bird seeks and obtains its own fuel and directs its own flight. Hence, life in this context could be, a "conscious embodied" object that moves against gravity and the path of least resistance under its own self-generated and self-sustaining activity.
- B. Living requires memory (Read: DNA, genetics) and access to it.
2. 'Life' is the collection of all living entities.

The common definition for life is, any atomic system capable of performing specific functions, such as:

1. Moving (physical exercise of will, self-directing) - The cell is the first living entity as that which moves by itself (against gravity); the cell is the first Earth-based entity that moves on its own. In a functional sense, a living entity can move against gravity.
2. Eating - taking in nutrition.
3. Metabolizing - turning nutrition into energy.
4. Breathing - gas exchange.
5. Growing - becoming bigger.
6. Reproducing - creating a copy of itself. For example, the cell can create a copy of itself. This definition is imprecise, because a woman after menopause is obviously still alive, but can no longer produce offspring.
7. Responding to external stimuli.

The simple systems definition of a life need is:

- A 'life need' is that without which life capacities (a.k.a., life abilities-opportunities, life fulfillment, life potential actualization) are always decreased.

A life need enables life in a way not possible without it—the necessity condition of value. Life needs are possible connections or completions of a relationship that without which life capacities are lost. The sufficient fulfillment of need will leave an organism better off,

more capable, in better condition, and more likely to survive and thrive. Life act toward completing required relationships at some internally, or environmentally signalled ("triggered"), frequency. If life needs are not fulfilled at some appropriate frequency and with some appropriate composition, then there will be some waning in the optimization of one's life experience. There is a probabilistic certainty that the fulfillment of some need in some requisite period of time with some environmental composition, sustains [optimal potential] functioning and life capacity. Life need is intuitive self-evident to life (although awareness can be disabled) and commonly testable.

The defining principle of all universal human life necessities and goods is:

1. That without which the life capacity of anyone is reduced,
2. by the degree of the good's necessity,
3. to the extent of its deprivation when,
4. the means are available to provide it.

This is also the exact line and measure of economic in/competence and social in/justice at the same time. Economic and moral rationality are not opposed as they long have been in the ruling disorder. They are re-integrated in life-coherent framework to apply across domains.

The universal goods that are provided or deprived are, in turn, goods which have:

1. Objective value (sometimes called, intrinsic value) so far as they are felt and conscious to human being (e.g., the air, water, etc., are felt as values in themselves).
2. Instrumental or ultimate value without which human life is reduced or destroyed by degrees.
3. Mark injustice or dis-economy to the degree of the systemic life loss without them.
4. Mark social justice and economic advance to the degree access and sustainability is enabled through time.

The defining principle of all universal human life need (i.e., necessities) is:

1. That without which the life capacity of anyone is reduced (or destroyed).
2. By the degree of the input's necessity.
3. To the extent of its deprivation when the means are available to provide it.

Thus, every human need entails a set of principles that form what is commonly called the need axiom (or n-axiom). Every human need necessitates:

1. A universal service (i.e., a system, process, product, or good),
2. which is also a universal life necessity, and
3. holds across individuals and societal compositions,
4. if and only if, and to the extent that, deprivation of the need (N) always results in reduction of life capacity.

Accounting for life need is the threshold, and measure, between societal justice and societal injustice. Herein, the universal satisfiers (i.e., systems, services and objects) are provided or deprived, and thusly,

1. **Have "intrinsic" value (existence)** so far as they are felt and conscious to human being (e.g., the air, environment and fellow beings felt as values in themselves).
2. **Have "instrumental" or "ultimate" value (usage)** without which human life is reduced or destroyed by degrees. Instrumental life values are defined by the range of life-requirements that a given organism must satisfy if it is to survive, develop, and express its vital capacities. Human beings share with all other life-forms physical-organic requirements of survival, but there are more complex ("richer") cognitive, imaginative, and practical-creative capacities entailed by social and temporal requirements for which humans know of no real analogues in the rest of nature.
3. **Signal systematic injustice (suffering)** to the degree of their necessity, deprivation, and life loss without them.
4. **Signal social justice (fulfilling)** to the measure of the protection and enabling of their provision through time by society's process of generating and sustaining opportunities (benefits) for flourishing.

Herein, reduction in life capacities is quantifiable (measurable) by loss of life's functional (life-function) range. Although need satisfiers and choices may vary, a reduction of life capacities, without the presence of any satisfier whatsoever, is quantifiable by a loss of [life] function range.

Healthy living organisms have the innate ability to detect that which they need from their environment; possibly a desirable characteristic for survival. This innate ability can be interfered with, and possibly damaged (or at least, reduced in capability), by an aberrant environment during upbringing, and also in the reinforcing structure of a society itself. For example, humans, through aberrant conditions and conditioning, can come to participate with objects, and in actions, that degrade their own, and others, immediate and long-term fulfillment.

**NOTE: Life needs form part of the common life-grounded interest of humanity.**

From a systems perspective, life needs may be defined similarly as,

1. Needs, whose completion (at some frequency and composition) conveys a potential for life capacity (capability) and condition (quality of).
2. Needs involving physical life-processes with quality attributes related to [the experience of] life existence.
3. A need describes a category of bio-physical [life-] process; it is those bio-physical processes that sustain, evolve, or devolve the [potential expression and experience of] a living organisms.
4. A need describes a type of relationship, between a living system and its environment, wherein the relationship is required for the living system's continuation or evolution.

From the perspective of a living system,

1. Needs are impulses that initiate and guide particular actions (behaviors) toward particular states of the internal and external world to convey the development or optimal expression of capability in the world.
2. Needs as universally required conditions and inputs for optimal and adaptive [conscious-organismal] functioning.

From an entropic perspective,

1. Needs are states of dependency (in respect to not being harmed or artificially limited), which involve the having and using of resources, and the experience of environmental conditions.
2. Needs are the experience of an internal pressure [for the input of some physical or non-physical element].

Life has two interrelated, but primary categories of capacity. A life need is a need where the absence of the environmental input will reduce the potential [capabilities] of life to:

1. **Survive (life capacity to exist)** - The emergent presence of living.
2. **Flourish (life capacity to thrive)** - The emergent expansion of capabilities past those associated with survival.

## 6.1 Life

**QUESTION:** *What is universally necessary (i.e., required) for bio-spheric life, and human life therein?*

The nature of life is that of a consciously embodied existence in some physicalized system. Therein, life is

universally understood to require a source of energy and a mechanism with which to harness it.

Conscious self-questioning about life involves, at least:

1. What does it mean to live (feel)?
2. What does it mean to live well (feel well)?
3. What does it mean to produce materializations that meet the requirements for living well? (i.e., What does it mean for a society to produce materializations that fulfill human and ecological requirements for living well?)

What people need in order to be well in society?

1. What do they need to have?
2. What do they need to do?
3. What do they need to feel?

When the word 'life' is used, it implies that there is another state that isn't 'life', which entails a second set of socially conscious self-questioning:

1. Are "we" (individuated units of consciousness) having the experience of 'life'? If we are having the experience of 'life', then:
2. Can\* the experience of 'life' be *better* [for anyone]?
3. Can the experience of 'life' be *worse* [for any individual consciousness]?
4. Can the experience of 'life' be *optimized* [for ourself and/or everyone else]?

\*"Can" means "Is it possible".

Physics is, in part, a set of rules that happen everywhere in this reality. Life does not happen everywhere; it is not a physical constants that happens everywhere. Thus, if life is not defined as an objective value orientation (morality), then it is unlikely that it will be "positively" oriented toward. The existence of need means that there is a moral dimension to human [social] life. If unmet needs mean severe harm and/or an exclusion from social life, then they imply a strong moral decisional orientation to relieve that suffering and meet the needs that enable growth and participation.

**NOTE:** *Given what is known, every living physical embodiment is going to physically die (and de-attach) the embodiment.*

### 6.1.1 What is life?

Often, in natural language [to consciousness], the term 'life' alludes to a process, not to any specific entity or composition. Itself, the term 'life' is a linguistic noun (in syntactical grammar, or linguistic logic, which is used for the purposes of formulating syntactically correct[ly meaning] sentences). 'Well-being' is an informational construct, and 'happiness' is an operational state (or,

'feeling'), measured most precisely in the moment as 'life' satisfaction [of naturally conscious living objects]. In its proper context, the term 'life' alludes to an abstract concept as well as a syntactical noun. The Scientific category 'living' exists for figurative (conceptual) 'life' entities. In an abstract, conceptual sense, an entity has 'life', for the sake of scientific precision, an entity is 'living' or 'alive'. The term 'life' is an abstract concept only used in ordinary speech. Biology studies first and foremost, entities; specifically, entities categorized as living. In their proper context, the terms living/alive are dynamic concepts. They allude to a process, an activity, etc. Of course, all entities, whether living or non-living undergo various dynamic processes because they are perpetually moving (in some sort of mass/atom gravitational system).

Living is datum-absolutely intentional motion; a corollary to thinking, sensing, experiencing, behaving, acting, etc. Intentional motion in any environment is sub-characterizable by (i.e., has three needs, that of integration, matter, and information):

1. Motion and reflection (integration of 'now') - The two properties of integration here are that of motion and that of reflection, which go together and cannot precede or follow one another.
  - A. Matter (motion of 'matter') - In a material sense, a potential scientific definition of a living object could be: that which moves on its own against gravity (as well as, that which moves on its own, is self-directed, and that which can create a copy of itself).
  - B. Information (reflection or experience, motion of 'meaning') - In an informational sense, a potential scientific definition of a living object could be That which can experience itself as a whole sharply distinct from all other objects. That which can both act and be acted upon could be a secondary definition. This last definition leads to the idea and/or feeling that autonomy of thought and action, and non-coercion of choice, becomes optimal and is naturally desirable.

Machines are not living because they are not natural entities. They are artificial in that they are created by a living entity, and for a purpose. Machine purpose and human purpose is not the same thing but it's hyper-related. The machine purpose is based on the human purpose of surviving and to maintaining its species. Understanding that meaning and purpose of the machine essentially is perceiving our own meaning and purpose.

The characteristics of life include, but are not limited to:

1. Life has requirements of its environment.
2. Life grows and dies.

### 3. Life feeds back information to itself.

What is a sufficiently high-level, material definition for 'life' so to be transparent to all unknown compositions, characteristics and behaviors of any living [material] entity, whether on Earth or anywhere in the Universe?

1. Living entities undergo their own dynamics irrespective of the perpetual influence of gravitational pull from all the other entities in the Universe. Inert entities cannot accomplish such a feat. Inert entities are pulled by other entities without offering any self-directional resistance to them. Living entities necessarily resist the gravitational attraction from all other entities in the Universe.
- A. A living entity moves on its own against gravity.
- B. Before a living entity can breathe, eat or reproduce, it must move against gravity to do so.
- C. Before a living entity can be analyzed to prove it's made of cells, DNA, organic matter (CHNO) or whatever, it must move against gravity, otherwise nobody would study it as a living entity.
- D. Even for a cell, before it can nourish itself or reproduce, it must move against gravity.
- E. It is impossible for any natural entity to be alive unless it is resisting gravity.

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Newton's first law not being able to be violated (there is consciousness, intention to). All living entities violate Newton's Law; because, they move against the pull of gravity. Living is a term that refers to a natural object moving by itself against the gravitational pull from all the other objects. Resistance to gravity is the only dynamic criterion that unambiguously elucidates the observable materializing context of the term 'living'.

Life may or may not be the only self-sustaining process possible; there are biospheric processes, all of which inherently include life, including atmospheric phenomena, self-sustained within the atmosphere. Some of which are more influenced by the sun, such as twirling storms (e.g., hurricanes, tornadoes, typhoons, etc.). Given what is known, 'life' involves a chemical process that self-replicates. Before an entity can even begin to perform this activity (a), it must move against gravity (internally and/or externally). Cells can self-replicate. A robotic machine with sensors is not a natural entity, and thus, is not alive.

Something that is alive, must, move against gravity. The fundamental unit of a living entity is the cell. Cells are the smallest natural entities that can move on their own against gravity. Hence, they are the building blocks of all living entities. DNA is not the smallest life form, nor is it the building block of life. DNA, amino acids are inert molecules. There is also the decision space view of life, where all life has a decision space, prior to thought or action where processing can occur, or not, and decisions are resolved. That life decision space is highly determined by the organism being animated by consciousness. Where creators can consciously become their own creators, there is the likelihood of reflective decision, and the potential for true exploration.

A basic list of characteristics for living things, could be:

1. Bodily motion.
2. Breathing.
3. Organization.
4. Protoplasm.
5. Assimilation.
6. Irritability.
7. Reproduction.
8. Growth.
9. Adaptation.
10. Metabolism.
11. Excretion.
12. Conscious Motion.
13. Affection.
14. Contribution.
15. Empowering.
16. Suffering.
17. Pleasuring.
18. etc.

A sufficiently complete material definition of 'life' may be (i.e., A sufficiently complete definition of life may be

what?):

1. Given what is materially observable, before a living entity (whatever it may look like) eats, reproduces, or dies, before it can be comprised of cells, DNA, etc., before it can have any unknown material characteristics, A living entity must be able to move on its own against gravity. The only unambiguous and consistent characteristic that all living entities have in common is that they can move on their own against gravity.
2. A sufficiently complete conceptual definition of 'life': Given what is conceptually understandable, before a living entity embodies an object in physical-matter reality and starts to compute (this reality), before it starts to think for itself and take action to meet its own knowable requirements, before it can have any unknown conceptual characteristics, A living entity must have conscious self-separation of information and materialization [via a sensation interface].

### 6.1.2 Earth life-forms

On earth there are fundamentally three categories of life forms that operate against the flow of gravity:

1. Single-celled life forms - the cells operate independently of each other.
2. Multi-celled life forms - specialized cells co-join to form an animal.
3. Viruses - rely on implanting themselves into other cells to reproduce (special case of life gravito-transport).

### 6.1.3 The fundamental structure of life need

Each need by a living system can be sub-classified as follows:

1. **Need** type (*is* description, abstraction).
  - Environmental resource **satisfier** (*has* physical composition, and possibly, frequency, is 'necessities').
2. **Action** (*is* physical process over duration, frequency).
3. Internal **drive** (*is* feeling).
4. A **gap** between current constructions and demanded need constructions (*is* problem).
5. System responding **construction** (*is* capacity, capability, or condition).
6. System resulting **state** (*is* computed).

Or,

- Need | resource satisfier > act of satisfying the need > until need is satiated > as need is satisfied,

system responds to new information > satisfaction feedback > satisfaction periodicity.

For example, the human organism has a need for 'nutrition', wherein 'food' may be required several times a day as the environmental resource, and 'eating' as the act of fulfilling the need for nutrition. Therein, 'hunger' is the label given to the organismal feeling that drives 'food-seeking', and 'eating' action (behavior). The optimal or sub-optimal, and very continues existence, of 'the body' is the construction.

A visual sub-classification of nutrition is,

- Need (nutrition) | resource satisfier (food) > act of satisfying the need (eating) > until there is no hunger .

In other words,

1. Need type: Nutrition.
2. Environmental resource satisfier: Food.
3. Action: Eating.
4. Internal drive: feeling of hunger (*complex of inputs*).

#### 6.1.4 Biological needs inventory

A biological needs inventory is an list/database of the needs of a [biological] organism. Biology is a branch of science. What is science? 'Science' is the study of 'reality' using/applying [by consciousness] the scientific method (a process) to spatialized objects in [this dimension of] reality. In other words, science is the study of reality (i.e. existence) for the purposes of accumulating a collection of rational explanations (i.e. theories) for natural [reality-dimensional] phenomena using the Scientific Method. What is Biology? Biology is a specific branch of 'physics' (the knowledge structure of science) that exclusively studies objects categorized as 'living' (alive, etc.). Biology is the study of living objects.

#### 6.1.5 Life-needs are life-requirements, to an engineer

There is a unifying complete set of universal life needs (services, objects, goods, necessities, etc.) without which human beings variously (are likely to) suffer life capacity loss (towards inertia), disease and possibly death. In the unifying life-value framework of life needs, each is a universal life requirement, because no individual across societal compositions can be deprived of it without losing life capacity. And of course, each is a distinct from each other because none can be provided for by any or all of the rest.

When needs are understood in universal terms, applied across time and place, then humanity can plan for and measure progress toward social and environmental goals, both globally and into the future.

The universality of need rests [in part] upon the 'if,

then' decision structure:

1. If [human] needs are not satisfied, then
2. serious harm of some objective kind will result, and
3. sub-optimal expression is probable [by degree].

Notice the bracketed words in the structure above, "[human]" and "[by degree]", because this is where a society may be classified by how it expresses its "humanity" (i.e., how much a complete and sufficient human are they, by degree of need fulfillment)? In other words, the question, Is there humanity it that specific societal system? And, the question Is answered by inquiring into (studying) the universal fulfillment of individual human organisms therein.

This [primary] harm implies [unified (mental, emotional, moral, social, physical) societal system] obstacles to successful **social participation** and **adaptation**. All individual action is predicated on prior social interaction; hence, it follows that participation in some form of social life without serious systematic limitations is our most basic human interest. Basic needs are then the universal preconditions for effective participation in any complex form of social life.

To break down this complex meaning, this harm implies societal obstacles to successful social participation, individual expression and development. There are 5 primary ways (categorical information sets) of consciousness experiencing the physical world:

1. Mental (self-cognition).
2. Emotional (self-ignition).
3. Social (whole-relationship).
4. Moral (whole-relationship development).
5. Physical (the existing), which maintains inertia in the mental, thus generating a time, as the iteration of the constant now from a source (to consciousness) point of reference.

Simply, five ways consciousness experiences its unified societal system in a materialized and embodied form are: mental; emotional; moral; social; and physical; which, all become the unified, integrating experience of a conscious physical reality.

Often, this is best explained thusly, "Whenever there is a physical malady, for example, there is also a social disturbance (i.e., a social malady)". Almost invariably, whenever there is a social malady there is a physical (embodied, structural, etc.) disturbance; as well as a social and morally experienced disturbance also. They are a unified experience that generates greater and lesser states of fulfillment and/or suffering. Humankind is a social organism, innately. It is wired into our "nature" (used loosely here). There are [at least] mirror neurons for patterning, and otherwise entraining to that which may facilitate one's own development and help in bettering those who are an extension of themselves.

Hence, it is significant to remember that if there is an emotional malady, then there is a social disturbance. The

drama that feeds back against the repetition of mental narration disturbances, probably, throughout one's life experience.

The fabric of a embodied-human life [experience of] existence is a mental, emotional, moral, social, physical matrix, and when there is a "rip" in the fabric there is a statistical spread of disturbances, as signs of a problem in the total matrix of the social organisms' individual lives and social relatedness. In a more technical sense, when there is attachment to the materializing iteration, an inertia can build instability in the unified system generate emergent states of suffering (or fulfillment, i.e., "what may come next for humanity, more suffering by degree, or potentially greater levels of dimensional fulfillment)). A constant conscious inertia through attachment to materialized "conscious" objects (i.e., attachment to possessions at any level of unified experience) possibly, though this is speculation, maintains a conscious dimensional experience? Possibly, these 'constant dimensional patterns of embodied experience' or 'constants' are represented (per dimension) with the logical notation of a physics iteration (or pattern), time (t), and its change delta t or  $\Delta t$ ? These questions deserves further scientific inquiry and the knowledge therein is missing from the model.

**NOTE:** *Community is the conditions (the 'matrix' of Society sub-composed by its information systems: social, decision, lifestyle, and material; with the materialized habitat service system (ecology (native), decision, life support, technology support, facility support); and conscious embodied domains of experience (mental, emotional, moral, social, physical); and the human needs, goals, and other directives, which together, as a unified information set inform a projected design plan, to generate a the next optimal iteration of the society, a place where people can better thrive, can be [f]actually observed and studied (or designed) to thrive (i.e., flourish, survive and thrive, etc).*

## 6.1.6 Life's environmental signalling

**NOTE:** *Is early 21st century society mismatched with human needs (which is a natural system)?*

There are certain environmental signals (across millions of years of hominid evolution) that reliably signal either well-being and evolutionary success, or danger and failure. Recognition and cognition of these environmental signals allows for orienting the human species in the right (most accurate) time, space, and behavior. And, disrupting those signals reliably leads to dis-orientation, and the consequences therefrom. Humans have, to a large degree, become reliant on these signals to calibrate their embodied experience (e.g., training the immune system) optimally or correctly. In essence, there is a relationship between inner motivating states and environmental signals (as conditions).

Life has a need for environmental signals at some

periodicity, which trigger beneficial responses.

**NOTE:** *In a dynamic environment, the response of an adaptive system conveys the potential for a greater or lesser capability through time.*

## 6.1.7 Pleasure and pain drives [motivation toward need fulfillment]

**QUESTION:** *What does the relationship signal.*

Pleasure [to consciousness] is the result of need fulfillment, and pain [to consciousness] is the result of need insufficiency. George John Romanes, a prominent biologist and follower of Darwin wrote (Galindo, 2018),

*"Pleasures and Pains must have been evolved as the subjective accompaniment of process which are respectively beneficial or injurious to the organisms, and so evolved for the purpose or to the end that the organism should seek the one and shun the other [within reason and context]."*  
-Romanes, 1984

## 6.1.8 The conscious mental drives

The human body-mind has biological and sociological drives:

- There are biological and sociological drives for pleasure (met needs) and for the avoidance of pain.

## 6.1.9 The drive of fear

There are two primary categories of fear:

1. Fear of not being enough (felt insufficiency, social anxiety, shame) - not quick enough, not handsome enough, not good enough, not ... enough. This fear can have harmful consequences, but it can also have a growth potential because it keeps us growing. When you overcome this fear you grow for the sake of contribution and self-actualization/ evolution. This is a socio-logical fear.
2. The fear of harm to the physical body (fear of danger and of monsters). This is a bio-logical fear.

The human mind can feel fear. Fear can be overcome simply by changing the meaning a situation or thing has. Fear may be viewed as a triality force-based model:

1. **Force 1: Driving force** - Motive to select a direction. Composed of top 2 needs. The driving force is the target of life, and includes, but is not limited to certainty, variety, significance, connection/love, growth, and contribution.
2. **Force 2: Guiding force** - Motive to select an orientation. The guiding force is the orientation, composed of a model (value, belief, or other

- system) that processes information for alignment with a direction. For example, a global value or belief system, and rules for information processing. Force 2 results in action on the part of needs.
3. **Force 3: Active choice** - Emotions selected, given that which is available. There are empowering and dis-empowering environments.

## 7 Human needs

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*A.k.a., Human satisfiers, inelastic demand, human life satisfiers, human requirements, human life requirements, human necessities, human life necessities, human standards, human life standards, human life qualities, human modalities of flourishing/wellness/well-being, social-psychological theory of motivation, natures socio-economics, nature's economics, natural economics, natural law, human essentials, human life elements, human categories of potential life quality, life conditionals, human life gaps, human life cycles, life self-becoming gaps, human capabilities, human life capabilities, human needs of the system, biological inventory, basic human goals, fundamental human motivations, human vitals, etc.*

Human needs are the proposed requirements of human flourishing. Human needs are the universal needs of all humans, universal to all human; all humans seek to meet their [common] needs. What is shared among individual humans is a desire for individual fulfillment therein. Human needs specify the necessary conditions for human growth, human integrity, and well-being. Fundamentally, when human needs are fulfilled, individuals experience improvements in well-being and life-satisfaction. Human needs must be understood as a system; that is, all human needs are interrelated and interactive. People have real needs while embodied in a real-world environment. In other words, to remain well embodied in a physical environment the conscious body has certain elements that must be interacted with and conditions that must be met to live well. Human needs are universal. All living humans have human needs (that can be met more or less optimally). All human needs are aspired to be fulfilled optimally.

*"Human needs are a powerful source of explanation of human behavior and social interaction. All individuals have needs that they strive to satisfy, either by using the system[,] 'acting on the fringes[,] or acting as a reformist or revolutionary. Given this condition, social systems must be responsive to individual needs, or be subject to instability ... "*  
- Coate et al. (1998)

Human needs are innate and universally common to all humans. In other words, all humans have at the very least a similar set of principal and common needs, which are objective and scientifically discoverable; they are verifiably experienced. Needs exist apart from knowledge of them - they are *a priori*. Human needs can be physical (or material), such as nutrition, energy, rest, and shelter, or they can be mental (psycho-social), such as the needs for growth, connection, and contribution. In general, needs do not change over time, but the way in which they are satisfied may change with advances in knowledge

and technology, or changes in the environment. Social science (a.k.a., human science) is an umbrella term for a number of disciplines involving human environments and human behavior, and in a fundamental way, it is about human needs (and structures that meet, or do not, those needs). Here, the experimental and applied sciences (a.k.a., hard sciences) can be used improve and optimize the structures that meet all human need. Hard science is applied to engineer the habitat; social science explains the purpose for its engineering, and then whether the engineered habitat result meets individual human expectations.

All of humanity shares a common human experience and a set of common human needs. Humans have objective and discoverable needs. Human needs are distinguishable from the specific culturally conditioned and temporary environmental desires of a particular human being. All of humankind shares a set of common needs, including but not limited to nutritious food, clean water, a healthy and aesthetic living environment, and accurate information to effectively plan a fulfilled life together on a shared planet. Fulfillment is a common pathway. If there is a common lowest denominator, then it is the fulfillment of human needs. And, the Community exists as a primal structure in the facilitation of human fulfillment.

Humans need a number of essentials to physically survive, psychologically thrive, and to maintain well-being in general. These needs are common to all human beings and include both material and social elements (or 'motivating factors') required for human growth, development, and healthy functioning, as well as all those things humans are innately inspired to become and driven to attain. The fulfillment of these needs leads to progressively higher states of potential well-being and flourishing. Herein, to flourish means to live within an optimal range of emergent human functioning, one that connotes well-being, generativity, growth, and resilience. Herein, growth and all forms of development are stunted when fewer [needed] nutrients are available.

Bio-physiological organisms require nutriments from their environment if they are to survive and to flourish. In particular, when the environment does not meet a developing human brain's need for optimal conditions (e.g., nutrition and sensory affection), then the brain does not develop optimally or even properly (qualified by later-in-life neuro-plasticity). When the environment is lacking, development and healthy functioning are by consequence also likely to be distorted or lacking. Human needs explain why only some efficacious behaviors [and values] actually enhance well-being, whereas others do not. Effectively, a hierarchy of prepotent needs structures values, in terms of their relationship to [objective] human fulfillment.

If there is a need, then there is a frequency [of need]. There is a "need frequency". For instance, humans need water every so frequently, they need air of a certain composition among a frequency of breaths, and they need shelter every so frequently. A community is a

structural organization that facilitates the frequent fulfillment of needs.

Needs represent the reality of what is occurring to individuals in any given situation. The idea of "needs" is accurate in its description of what is really occurring with individual human beings and their required inputs from, and relationships with, the environment. Wherein, needs allow for the realization of complexity [in relationship and structure] in the real world. Needs are inclusive and their true fulfillment does not innately generate structural states of polarization between people, for they are commonly verifiable. Hence, evaluations of life and behavior based upon needs are "more true" in their accuracy at orienting toward greater states of human fulfillment.

Necessities involve relationships with objects that are indispensable for the full spectrum of human fulfillment. They include but are not limited to: shelter, food; water; habitation; energy; healthy relationships; learning systems and access to society's accumulated knowledge (as opposed to nonsense or error); the "pursuit of happiness" and self-esteem, self-development; the pursuit of a higher and meaningful purpose; leisure time; love and connection; the means to communicate, locomote, and cooperate; and so on.

Human beings have [eco-, socio-, psycho-logical] needs, which drive motivation throughout the life of their human existence. From needs arises the conscious experience of emotion[al drive]. When consciousness is aroused to move toward completion of some need, it will engage in exploratory behaviors directed toward re-configuring the environment to complete the need, and experience the pleasure of that opportunity. When the desire (arousal) is satisfied, the system is restored to something akin to an equilibrium.

Observations and critical integrations create the potential for momentum. This momentum allows an individual to "break free" from the gravity of thoughts and actions that do not serve needs and do not explain the observations. Individuals must first move (behave) if they are to attain their goals and to overcome the inertia of the universe or procrastination within a dogmatic [belief] system. Momentum represents movement toward change, and emotion is the instantiation of that momentum. All levels of action are goal-directed [by consciousness]. But, not all goals are created equal because some goals are more directly satisfying (or sustainably fulfilling) of needs, and some are less satisfying or even thwarting of need fulfillment, and thus, have different effects on total well-being. (Ryan, 1996)

Herein, the conception of emotion and feeling has two related definitions:

1. **Emotion** = "causing movement", from the Latin *emot-*, past participle stem of *emovere* ("move through" or "move out") + -ive, *emotive*, meaning "capable of emotion". Emotion as stimulus; energy plus motion (e + motion).

2. **Feeling** = the conscious experience of a signal of the complex of arousal in an interaction (i.e., in an experience).

**CLARIFICATION:** "*Emotion*" is an initial [felt] response to a specific stimuli; whereas, "*feelings*" are a complex of factors in response to a stimuli, and may potentially be consciously chosen/controlled (are controllable based on optimized physiology and self-knowledge). "*Mood*" is the characterization of the way someone is feeling at the present.

Behind feelings are needs and desires. Feelings and emotions are internal signals (or indicators) telling someone that one's needs are, or are not, being met. Figuratively speaking, there is a feeling of hunger or longing when needs are insufficiently fulfilled that propels someone to act. For instance, a living organism has a need (e.g., for bio-physical nutrition), which gives rise to a feeling (e.g., hunger), and its sensation by consciousness propels decisive action (e.g., food seeking behavior). This is how human beings function [in part] at a known and scientifically verifiable level. Based on a feeling, such as that of hunger, which arose out of a need for food, "you" move into a state of [food] seeking and acquiring behavior. It should be noted that these internal signals can become confused and perverted under aberrant and otherwise noxious developmental conditions.

As well as physical needs humans have interpersonal, social needs -- humans are implicitly a social species. Human beings are social organisms, and they have not, and do not, function in complete isolation. Any given human individual exists within a continuum, a chain of social actions that are influenced from other social actions. There is no escaping the social element of the self. For a start, it takes two humans to make another human, and so, there is a requirement for at least two or three to begin with. Also, humanity's primate ancestors relied upon one another for their health and survival (e.g., grooming behavior of primates). (Dunbar, 1998) It is commonly known that humans developed as a species to hold approximately 150-250 unique human relationships (this is known as "Dunbar's number"), thought to be the size of most early human communities. (Hill et al., 2003) For millennia, the qualities and coordination of these interrelationships meant the survival of the individual as well as the entire tribe. Since the dawn of human history humans have lived in groups, and part of living in a group involves the evolved adoption (or adaptation) of interpersonal needs, such as trust, equality, respect, contribution, clarity and communication, and touch. And, these needs also give rise to feelings. This is, in part, the nature of human beings - humans have needs, they give rise to feelings, and then, individuals [have the potential to] act in a way that genuinely resonates with and fulfills their needs.

Human interpersonal needs are likely not as fundamental as persistence needs (a.k.a. primal, basic,

and life support needs), such as shelter, water, and food. If someone does not get food and water s/he will die within a verifiably set amount of time. Without the fulfillment of interpersonal needs, an individual isn't going to die, but s/he is likely to feel less alive. When social needs go unmet individuals are likely going to feel lonely and depressed, possibly hurt and threatened; they are likely going to feel separate from themselves, for that is how they are living their lives - they are living separated from their social selves.

In a community-type society, it is understood that individuals can only get their needs met fully if the other people around and are also getting their needs met fully as well. If some individuals are getting their needs met and others around are not, then soon enough the others are going to become unhappy and start causing conflict. And, the whole time the individuals with met needs are going to feel conflicted, and the more that conflict is suppressed, the more dis-at-ease everyone becomes. Herein, conflict presents an opportunity to take pause and to recognize [the insufficient fulfillment of] needs. When in a state of conflict one might begin to ask, "What are my needs and what are their needs in the generation and resolution of this conflict?"

When human needs are sufficiently fulfilled, humans experience greater comfort and well-being, and tend toward behaviors and interrelationships that maintain a state of "cooperative flow" and a space of active higher potential.

All human beings are continuously seeking to meet all of their needs. Although humans seek to satisfy all needs [sometimes simultaneously], some needs are clearly more immediately important than other needs—needs have a temporal and spatial nature to them. For example, humans need to eat at somewhat regular time intervals and the food has spatial-physical form. Needs, such as those of nutrition and connection must be satisfied (Read: satisfied fully) before other desires can be entirely fulfilled. The interaction, the ranking, and the progressive fulfillment of human needs largely determines how an individual lives and makes decisions towards its well-being and the well-being of others in a common environment. Needs are a factorial "determiner" of human behavior (i.e., they are a factor in the appearance of a specifically complex behavior). (Latham, 2005) Fundamentally, needs are a driving force in humans and there is no greater force in life to direct someone's "destiny" than the needs that are valued most and the environmental structure that facilitates or hinders their fulfillment.

Human needs are likely positioned within a "release" hierarchy. Humans have to have their base needs met to imagine (in an fulfillment-educated way) a better way to live. When people have fulfilled their basic needs, another higher level of need awakens in them, and they try and fulfill that higher aspiring need. Simplistically speaking, people may fulfill the first need of hunger, the next as comfort and warmth, until they get to a level where they have all these base needs fulfilled, and then,

higher aspirations start filtering into their awareness and motivations. As these higher aspiring needs are met, they may begin to acclimatize themselves to the whole set of available higher aspirations.

Human needs vary with respect to their *urgency, intensity, and priority*. This is known as the 'prepotency' of a need(s). Hence, the motives for learning behaviour are built into the biological constitution of the human organism as a 'hierarchy of needs', which can be described in terms of varying degrees of prepotency. One need is more prepotent than another if it is more urgent and inhibits other needs. The order of their succession is dictated by the fact that some motives are simply more physio-biologically urgent than others. For example, when physically threatened, or when survival is at stake, many people are likely to become more aggressive as a natural reflex to protect the needs of their physical form and to maintain the acquisition of nutriments. Hence, human motives are structured, and their arrangement within the structure is defined by their respective levels of urgency, intensity, and priority.

The fulfillment of needs is healthy, while preventing the fulfillment of needs or threatening their unfulfillment leads to dis-ease, illness, and behaviors that cause harm and suffering in oneself and others. Hence, the sufficient fulfillment of human needs represents the most rational[ly reasoned] self-interest of every human being. Sufficient fulfillment involves the recognition of the strategic requirements of one's life, one's happiness and well-being, and one's whole environment, and hence, acting in integral accordance with values, principles and understandings formed on the basis of such cognition. Herein, rational self-interest is not selfishness [as a fetish, hedonism]; it is a factual life-serving necessity that may become perverted under sufficiently adverse conditions for growth and development.

When conditions exist or events take place that limit someone's ability to meet their needs and to affect their bodily or psychological structure, then the experience of 'trauma' may be said to exist. As a result, in order to cope, individuals may engage defense mechanisms to block out awareness of their needs, or alternatively, they might desperately attempt to sate those unmet needs in a misguided (or hurtful) fashion. This cycle involving unmet needs, trauma and the engagement defense mechanisms is a central one that lies behind many of the most destructive aspects of all cultures.

The failure to fulfill some needs in the temporal short-term may result in death (e.g., "terminal dehydration"). Yet, chronic unfulfillment (e.g., long-term shaming & shunning) is likely to generate a persistent and correspondingly pathological state of insufficient fulfillment, of trauma. Therein, a state of neurotic psychosis (as defense) is [at least] a dis-ease of "arrested fulfillment", and possibly, of persistent deficiency (or insufficiency) in developmental fulfillment. And, it is a state that is widespread among people in early 21st century society, for early 21st century society [to a great extent] does not recognize or account for human needs,

and the systems that it creates are not designed to effectively fulfill human needs.

The definition of needs herein may be considered in *organismal* and *functional* terms. The term, 'human needs', assumes the potential for a fundamental human trajectory toward vitality, integration, and health (i.e., that humans are not broken by design), and further assumes that this organismal tendency will be actualized so long as the necessary and appropriate nutriments are attainable, but will give way to the emergence of non-optimal physiological and psychological outcomes, and social arrangements, under conditions of threat or deprivation. In other words, human needs specify the necessary conditions for growth, health, and well-being, and their fulfillment is hypothesized to be associated with the most effective functioning (and potential capacity) of the human organism and the flourishing of a human community. A further claim is that each need plays a necessary part in the optimal functional development of an individual such that no one need can be thwarted or neglected without significant "negative consequences", which reduce the manifested functioning of the organism.

Human needs include not only the obvious physiological needs for survival of the organism and the species, but also the basic psychological needs of a social organism, as well as those higher psychological needs that function to fulfill the full development of consciousness' experience as the organism. In the case of humans, this is sometimes known as "full humanisation".

Human needs are rooted in the instinct for self-preservation and are functional in human motivation evolved for learning and adaptive behavior. This general idea may be stated in two other ways: First, human needs are the intrinsic motivators for adaptive behavior and learning behavior; and second, as intrinsic motives toward adaptive behaviors human needs are the source of motivation for learning (i.e. 'intrinsic motivation').

Intrinsic motivation, unlike extrinsic motivation [as outside reward or punishment] engages personality growth and development; it does not inherently destabilize the personality of an organism [as occurs with extrinsic motivation]. There exist different stages of human growth and personality development wherein an individual's behaviour is dominated by the need that is motivational at the particular socio-cognitive stage that they have reached. These motivations (or "deep meanings") provide the individual with a sense of direction as well as the motive energy and psychological will needed to expend energy and carry out particular life tasks toward the fulfillment of their need(s).

Practically, if there are rules to the human condition, then needs are those regularities in the nature of humanity that when discovered and fulfilled manifest meaningful and empowering states of flow (or "abundant living").

Finally, the conceptualization of human needs may be approached from a larger perspective, that of 'systems thinking'. Systems have needs that require input to

maintain their operation and fulfill the larger purpose of the system. So, if the human organism was perceived as a system, then humans would have certain needs (or 'system objectives') that when fulfilled may reveal a larger and more meaningful view of humankind within a larger reality.

**NOTE:** *Without identification of one's own feelings and needs it is hard to identify the feelings and needs of others [in common]. In community, the self and other go together.*

Many aspects of behaviour, such as foraging, communication and mate choice, involve information processing, and many of the subdisciplines of behavioural science have considered mechanisms of information processing. For example, one can think of most of the basic processes of psychology (e.g. learning, perception, memory) as mechanisms of information processing. (McLinn, 2006:1119) Information processing is used in order resolve a requirement (Read: need), and it wanes when the requirement has been fulfilled.

**INSIGHT:** *When our basic needs are fulfilled, then we have a reservoir from which to further fulfill ourselves, to give back, and to fulfill others [in the community].*

One of the problems with the concept of 'needs' is that the word itself is used in a variety of different idiomatic usages, both as a verb and as a noun.

Three distinct generic meanings of the noun 'need':

1. **Need as an underlying internal force** that drive or guide our actions. For example, acquiring clothes and a dwelling to protect oneself from the biospheric elements. Failure to satisfy such a need has a detrimental effect on the overall felt state of the individual.
2. **Need as a configuration of environmental resources** upon which the individual interfaces and throughputs at some identifiable cycle. For example, the configuration resources that form clothes during the day and a dwelling every evening.

**CLARIFICATION:** *A 'need' is an information and/or material gap that occurs cyclically in the conscious life experience of all individual humans, which is temporarily resolved through information and/or materialization satisfiers.*

Simplistically, human conscious embodiment carries with it (i.e., has) needs:

1. **Being in need** - being a conscious physicalized organism (i.e., being in a physical body, at a specific location, understandable by consciousness as spatialized information).

2. **Doing what is needed** - discovering, planning, engineering, and contributing to what is required.
3. **Fulfillment of need** - survival and thriving in an environment where all individuals of the same species have common needs.
4. **Having what is needed** - access, as temporally/cyclically required, to material and informational satisfiers.

It is possible to define several quasi-subcategories of need, including (note: these are not technically needs, but are categories of life that relate to need):

1. **Felt need** - occurs when an individual senses something is missing.
2. **Expressed need** - occurs when the individual is not only aware of the gap, but can verbalize through to visualize it.
3. **Self-determined needs** - are those subjectively identified by an individual.
4. **Assessed needs** - are those objectively identified by a population of individuals.
5. **Normative needs** - refers to an actualized system's capabilities, functions, and qualities in relation to (comparison) a recognized standard (e.g., the Community Specification Standard).
6. **Comparative needs** - refers to an individual's actual capabilities and values in relation (comparison) to that of another individual or group.
7. **Process needs** - refers to some action, activity, or process, and/or constraints on the action.
8. **Tool needs** - refers to what a tool or instrument must do, and/or the condition it needs to create.
9. **Resource needs** - refers to some material surface amount (quantity).

Human needs apply to all humans on the planet. This is a powerful attribute because it enables a degree of comparability and repeatability and avoids some of the problems of relativism, although the ways in which needs are met are context specific. Human needs are also sometimes known as universal lists of well-being criteria, representing a set of basic constitutional principles that should be used to facilitate mutual, global benefit.

**NOTE:** *The idea of a sustainable form of societal development (i.e., 'sustainable human development') is generally intended to mean that there are a set of requirements for meeting all human need and extending to all the opportunity to fulfill their aspirations of a fulfilling life.*

Human needs provide life's essentials without which the person would incur serious harm of an objective kind. As such, human needs provide a critical minimum threshold of human well-being/welfare for global access decisioning.

Identifying specific characteristics of each need could enable their measurement. Whereas needs are considered universal, the ways in which they are satisfied (i.e., whether people are above or below a level at which the need is met[threshold of harm]) may vary indifferent contexts. For each need therefore, a list of need indicators may be derived by asking humans to describe conditions under which another human is doing well or badly for each need. This was equivalent to a human-needs threshold [of harm], above which a need is met and below which a need is unmet.

**NOTE:** *One of the key characteristics of something that is alive (and existing) is that it can die. One of the key characteristics of something that is alive and feeling is that it can suffer and flourish (i.e., experience a spectrum of feelings from those that feel "well" to those that feel "unwell").*

Human needs are the physical and non-physical elements necessary for human subsistence, growth and development, as well as those things humans are innately driven to attain, which together sustain well-being. Humans, because they are physically embodied in the genetics of a social organism require inputs, including physically objective conditions (e.g., food) as well as socially objective conditions (e.g., touch by another human). More simply, individual humans require objects, and specific configurations and motions of objects, to live and to live well.

Human needs are few, finite, and classifiable. In other words, human needs are knowable, experienced, and finite in count. Human needs (such as those contained in the system proposed) are the same in all cultures and in all historical periods. What changes, both over time and through cultures, is the way or the means by which needs are satisfied human needs are the same in all cultures through all historical periods. In the context of human need, for any given society, the one element that changes is the way the needs are satisfied. The dwellings have transformed from caves to high rise buildings.

There are different methods and strategies for meeting needs. For example, violence and coordination are two different strategies for meeting needs. Violence is an unfortunate strategy to meet needs as it involves the experience of conflict. Conflict can arise from competing strategies (i.e., value diversity, and not value unity) to meet needs.

'Fulfillment' and 'need' are concepts for living together; they are information with useful association to all humans, because all humans have exist with commonality in a common environment.

As a verb (process, action), fulfillment and need represent:

1. 'Fulfillment' represents the process to complete a need (to serve).
2. 'Need' represents a process requiring input, which

in a cycling ("living") system generates a drive (to motivation).

As a noun (conditional of the state of the world), fulfillment and need represent:

1. 'Fulfillment' represents [the state of the conditional world where there exists the] completion of a need (to be complete or resolved). The term fulfillment refers to the completion of an appropriate systems input.
2. 'Need' represents a cycling system with a boundary condition and system requirement for accepting input. The term fulfillment refers to the existence of a system with requirements in a given environment.

**INSIGHT:** *It is possible to list [for the current temporal context] every conceivable satisfier related to a need (e.g., shelter>dwelling), given what is known and available.*

The common, universal characteristics of need satisfiers (indicators of need satisfaction, success, performance, progress, pleasure and self-development and growth) include:

1. Adequate **nutritional food and water** (Read: the vitals).
  - A. The human organism is "wired" to eat.
2. Adequate **protective housing** for dwelling and work (life-work cities).
  - A. Sleep is a universal need of all human beings, and when sleep is abundant minds flourish, and when it is not, they don't.
  - B. Activity (work) is a universal need of all human beings. When healthy work conditions and spaces are available, healthy work results are likely to flourish.
1. **Non-hazardous environment.**
  - A. An appropriately safe life-work environment is possible for everyone when global coordination occurs.
2. Appropriate **medical care.**
  - A. The human body is physical and can vary in healthy functioning.
3. **Connection** in childhood and belonging throughout life.
  - A. The human organism is wired to socially connect with others.
4. Global **economic access** to all that humanity has to offer.
  - A. The human organism is wired to see socially unequal access to all that humanity and the biosphere have to regeneratively offer as immoral.

5. Mentorship into understandable complexity (**education**).
  - A. The human organism is wired to learn and grow, as well as facilitate the learning and growth of others.
6. **Contribution** to society.
  - A. The human organism is wired to do work to meet their own and others needs.
7. **Leisure** from society.
  - A. The human organism is wired to experience the flow cycle, which necessitates relaxation and flow.

Assumptions in relation to global human access-coordinated fulfillment, include:

1. Humans are wired to be nice to others when their needs are met (friendship).
2. Humans are wired to meet their own and others needs.
3. Humans have categorically known (predictable) requirements. Human needs (human requirements) are not categorically unpredictable.
4. Humans can coordinate the transfer of biospheric resources into optimal human habitation, and back into biospheric resources sustainably. The biosphere is the source of all life on the planet. The sun is the source of all planetary life.

## 7.1 The simple view of human need

**STATEMENT:** *Humans have need of a coordinated societal and habitat service system if they are to survive and thrive together in a unified biosphere.*

Human need can be sub-conceptualized through life-persistence concepts:

1. Life.
  - A. Life has 'needs' to persist in a material reality.
2. Cycles.
  - A. 'Needs' are experienced as cycles to life.
3. Gaps.
  - A. In an uncertain environment, life-cycles may have gaps in their completion (Read: the lifecycle gap).
4. Requirements.
  - A. Life (consciousness) has requirements for completing gaps in its life cycle if it is to persist and express its potentials.
5. Satisfiers.
  - A. Materials (for the physical embodiment) and information (for consciousness) are the two types of satisfiers that complete gaps in a life-cycle.

## 6. Capabilities.

- A. To meet requirements and complete gaps in a life-cycle, an entity (human) must have some ability (Read: capability) to influence its environment (Read: control, mastery). Note here that capabilities can be expressed at different levels of potential. The highest level of capability known is 'flow'.

## 7.2 Societal organization and human need

**INSIGHT:** *The simple insight is that once individual happiness is no longer based upon possessions (but instead, 'human need') everyone gets along better. Most things someone could reasonably want are available, and thus, there is no need for (i.e., no encoding of) laws of violence and coercion to protect property. Community does not encode or structurally materialize the idea of 'property' (defensible personal ownership of materiality).*

Needs represent an axiomatic relationship, a principal organizing structure for human [societal] life together. The optimal condition for a social population would be for individuals of the population to meet their own needs, while facilitating, and not deterring, the fulfillment of others' needs.

Growth like any ongoing function requires adequate input from the environment to meet the needs of the growing individual. Colloquially, needs have been called "experiential vitamins" with the attendant benefits and decrements that nutritive processes generate (i.e., thriving when nutrient present, withering when absent or in excess). In both the conditions of surviving and thriving, there is possible obscurity inasmuch as 'need' is sometimes applied to the objective [shaped-environmental relationships] and sometimes to the implied requisite [feelings], though both can be accounted for.

For example, some needs are psychological "nutrients" that are universally required types of experiences that afford optimal functioning. Under this view, everybody needs to have these "nutrients", but, like each plant in a plot of farmland, the extent to which each person (or plant) is receiving adequate amounts of the required nutrients can vary from person to person, and so, individual customization and satisfaction may vary. Maslow (1954) likened psychological needs to vitamins, and so his famous hierarchy outlines a view of a healthy psychosocial experiential "diet".

The content of needs derive, in part, from the requirements of being:

1. A competent member of one's [physical-organismal] society.
2. Of avoiding fundamental, physical harm [to

functional capability].

Whereupon, the societal structuring of need becomes sub-divided at a high-level into the self-individual scale, and that of the larger socio-technical scale, of need[ed] recognition:

1. **Commonly individual-human needs (common human requirements)** as the set of needs common to all individual humans.

**A. Common socio-technical human needs (common socio-technical requirements because a common habitat)** as the engineered Habitat Service System has a set of needs, which are common to all city systems and fulfilled through operational processes, and relate back to their source at individual human needs.

Human needs may be viewed as tendencies to seek out certain basic types of experience, to a somewhat varying extent across individuals, and to feel good and thrive when those basic experiences are obtained, to the same extent across individuals. Most research to date supports the notion that the needs for autonomy, competence, and relatedness are experiential requirements. A lonely person should seek company, an incompetent person should seek greater mastery, and a person who feels controlled should seek greater autonomy. This definition encompasses both ontogenetic imperatives to obtain certain incentives or experiential rewards and phylogenetic tendencies to benefit when those experiential rewards are obtained.

People become dispositionally oriented to pursue certain types of goals and incentives more than others, via early learning and reinforcement.

Some types of goals, even when achieved, may not lead to positive outcomes, whereas other types of goals do produce thriving and growth. Therein, rewards and punishments "sensitize" people to different types of experiences, such that they develop characteristic motive dispositions, which affect the front-end perception of situations and the affordances they may contain.

The pursuit and attainment of culturally congruent aspirations and life values should be associated with well-being only to the degree they provide greater satisfaction of the human needs. Therefore, a distinction is made between intrinsic aspirations (i.e., goals such as affiliation or personal growth) and extrinsic aspirations (i.e., goals such as attaining wealth or fame).

**APHORISM:** *If you want to change peoples minds, you have to address their needs and wants.*

In the narrow, short-term sense of the term, "needs" are uncontrolled necessities or compulsions; these are conditions, objects, activities, or services. People need air to breath, water to drink, balanced food to eat, and time to sleep. However, the need for balanced food

doesn't imply that the food should be tasty. People don't need tasty food for their bare existence; they want to eat tasty food. People need to sleep somewhere from time to time. Yet, they do not need to sleep on a bed under a roof in a closed room; they want it. Still, for many people, eating tasty food and sleeping on a bed under a roof in a closed room are considered as real needs.

**INSIGHT:** *Humans need sensation. The quality of the sensation affects the quality of the experience. There are fulfilling experiences where the need is met and the quality is high, and there are less than fulfilling experiences, where either the need is not met or the quality is not high.*

What, above all else, do humans strive to avoid losing connection with, and in what order? What categories of experience will they fight most to protect? Now, design a society that doesn't signal that desire to protect by fulfilling what the organism requires to develop, and be, a full expression of themselves (to be fully capable in the world).

**INSIGHT:** *It is, in part, the sufficient fulfillment of needs (B-values) that lead to peak experiences for individuals.*

All individuals everywhere in the world, at all times present and future, have certain common needs. All humans, everywhere in the universe, at all times present and future, have certain basic needs. These needs must be met in order for people to:

1. Develop fully.
2. Avoid harm.
3. Participate in society.
4. Adapt to (reflect critically upon) the conditions in which they find themselves.

**IMPORTANT:** *When the basic needs are met, there is more time for play and development. When children's and adult's basic needs are met, then they have plenty of time to play and explore.*

Here, needs are universal terms, applied across time and place, and hence, a population can plan for and measure progress towards social and environmental goals, both globally and into the future.

When needs are understood in these universal terms, applied across time and place, humanity can plan for and measure progress toward [social and environmental] goals, globally.

Human needs are physical and non-physical elements that individuals are innately driven to attain and which are needed for human growth and development. Human needs are the basis for generating a set of indicators for both quality of life (QOL) and subjective well-being (SWB). Human needs are the generic requirements of human beings in order to be healthy and experience fulfillment.

**INSIGHT:** *The organismal experience, can be understood through conception and measurement. For the individual, sensation is truth, but when individuals come together as society with technology, they use instrumentation and networks to collect and share measurements. Measurement science, collection and sharing can be used to facilitate an individuals sensation of a shared measurement as accurate ("truth").*

The human organism has a set of needs (human requirements) common to its organism. This type of need is generally called: common needs, human needs, human requirements, and human goods. Human needs (requirements) are the necessary conditions for healthy human development and functioning. Human needs are a distinct category of demand, because they have no obsolescence, and are by their nature, necessary and continuous (because they necessary for survival and thriving together as humankind). The fulfillment of human need maintains the conscious, living, physical and social existence of a human organism. Humans have a common set of objectively required inputs, also known as needs. Individual humans experience conscious and unconscious desires, feeling, and yearnings to fulfill these needs, which provide for functioning in a real world. The pull by these needs can be sensed [by consciousness], and can be lessened or made more sensitive [by consciousness training].

Simply, human needs are the particular physical and psycho-social experiences that form the necessary inputs for human survival and thriving. Having those conditions produces optimal growth and development (given what is known), while being deficient in them will hinder growth and ability.

**NOTE:** *Possibly, humans are a meta-conscious learning system that can not only learn "things", but also to discover how to learn "things", the most salient of which are those "things" most required by humans.*

Consciousness, while embodied in the human organism, is innately driven [encoded informationally] to attain an initiation, integration, and completion of some physical relationships, periodically (and possibly after if beliefs are maintained?).

**NOTE:** *In concern to human needs, a "satisfier" is any element (material or non-material) whose use, consumption, or sensation determines the fulfillment or satisfaction of a need, desire or aspiration.*

Human need is central to a human organism's identity and interface with the world. The drive toward required fulfillment is innate and instinctive, because the body and mind exist together as an organic experience. Therein, however, cognition and behavior can be aligned or misaligned (by degree) with that which is fulfilling

and/or required for fulfillment. In other words, human recognition and cognition (i.e., embodied interface operation) can be aligned with its own fulfillment, or not (i.e., can be taking decisions and actions that cause suffering and inhibit fulfillment). Human needs are the preconditions to achieve well-being.

**NOTE:** *That an organism requires certain elements to thrive is both a long-standing and innate; though, its sensation and very recognition can be diminished, bodily and conceptually.*

There are a set of universal human life experiences (frequency states of composition with temporal and physical relationships) without which human beings variously suffer life capacity loss towards inertia, higher entropy, disease and death. In other words, a human need is a type of environmental relationship or condition that involves the human organism and requires periodic fulfillment (in the form of: connection>integration>release through the human organism), and relates to the fulfillment of the human organism. Fulfillment of human need generates human existence and well-being therein, as well as performance toward goals; whereas, thwarting need leads to ill-being or performance decrements.

**INSIGHT:** *Those basic needs that are innate to a cell are also innate to the base existence of the human organism. If not the same needs, the type of needs humans and cells experience are, at least, similar. The needs of cells (living system with a boundary) are related to need of a human (e.g., nutrient input, waste removal, area for movement, a conducive electromagnetic environment, etc.).*

Not anything that some human may claim to "need" is, after critical inquiry, a human need. The common test for a human life need (necessity) is whether anyone could live without it (under the same habitat as everyone else) and not suffer a loss of life capacity (regardless of whether the capacity is acted upon). Only that without which organic (or other dimensional) capacity is harmed regularly and unequivocally counts in identification as need.

**NOTE:** *Experientially, there is an order of priority to human functioning. There must be land (a appropriate surface) beneath our feet before there is procreation and nutrition.*

Human needs can be fulfilled (satisfied) in ways that barely meet requirements, subsistence, or in ways that meet and possibly exceed requirements, flourishing. With available information, the external process becomes a matter of optimizing the fulfillment of a specific need, which is not a preference, but a technical physical requirement; the inputs of fulfillment being capable of comparison, and hence, optimal selection.

**NOTE:** *In any given situation there are things that matter most to us. Sometimes needs are recognized at a personal and social level as being those things that matter most, and other times not.*

The interrelationship between human needs and satisfying services (satisfiers) is:

1. Permanent (i.e., always present).
2. Cyclical (i.e., it has a frequency, cycle, period).
3. Dynamic (i.e. moves within a range).

A human (fundamental) need will (i.e., is highly likely to):

1. Have affective qualities (i.e., engage emotion).
2. Cause direct cognitive processing.
3. Lead to ill effects when thwarted (e.g., addiction, poor health, poor adjustment, etc.).
4. Elicit goal-oriented behavior designed to fulfill (satisfy) the completion of a relationship, and subject to motivational patterns, such as object substitutability and satiation.
5. Be universal, in the sense of applying to all people.
6. Not be derivative of other motives.
7. Affect a broad variety of behaviors.
8. Have implications that go beyond immediate psychological functioning.

### 7.3 Human motivation

**QUESTION?:** *Without feeling, why take any action? What in society is actually de-motivating or reduces motivation over time?*

Motivation is an internal state that induces a person to engage in particular behaviors, in a given environment (external state with a particular set of conditions). There are a complex of inputs that form a given state of human motivation, they include but are not limited to needs, goals, values and beliefs, rewards, and punishments. Behavior is lawful to need. Under an aberrant environment, human behavior (lawful to need) will be aberrant; need will be aberrant.

Most simplistically, if humans were compared to the four basic drives of bacteria, then the four evolutionarily pre-determined drives are:

1. Food
2. Reproduction
3. Friendship/family (social connection) and Shelter/Fire (protection)
4. Fighting (when the other three are scarce, or when sharing is not present)

Here, it is presumed that humans are not "broken" and it is more likely that humans will be nice to others (maintain friendships and not conflicts) when their needs are met, because they are not competing with

each other for the fulfillment of their needs.

In concern to fighting, for example, people can be motivated by the degree of inequality (in access to food, reproduction, and friendship opportunity) more than the state of well-being they have. Inequality is a powerful motivator of behavior. Among these are the individual's self-evaluation and one's psycho-social memory-interpretation of behavioral events.

Motivation ("drive") may also be noted in terms of its absence ("lack of drive"). For instance, a satisfied need is (temporarily) not a motivator of behavior. Motives that initiate and guide behavior tend to be salient at the beginning of an action sequence, whereas experiences resulting from the action sequence are salient at the end of the sequence.

Fundamentally, humans can have natural internal drives that they motivate them to act that they have little to no conscious awareness of.

**TERMINOLOGY:** *Enterception - ability to recognize the internal [need] state [from different organs of the body]. More precisely, it is the conscious reception of sensory stimulus from internal organs.*

#### 7.3.1 Needs and rewards

**INSIGHT:** *Relationships have consequences and consequences create a space for growth.*

Reward is a property (value) that an individual assigns to an input (or, incoming) environmental signal intended to satisfy or otherwise fulfill a need. There is a very simple and seductive model (Read: the 21st century addiction model, the "reward hypothesis") when processing the concept of reward, which is wrong; and, if society falls into it, it will have made a logical error from which recovery is very challenging, because it creates its own logically circular paradigm. That error is:

*If need does in fact have a physical property called [neuro-biochemical] reward, because consciousness is experiencing life through a physical embodiment, which causes individuals to express behaviors that meet needs (e.g., food seeking behavior in the case of hunger and the need to eat). Then, the logical circular paradigm of thought is that if the result of a behavior has too much reward (i.e., it's "hyper-rewarding"), then an individual will overindulge in it and become addicted.*

However, attention should not solely be focused on "reward" (or "palatability" in the case of food). For instance, why do different people like different foods? Billions of people around the world find various foods delicious that others might find unpleasant. Reward is internal to the individual, and hence, has a subjective component to it. And, in its subjectivity, it is also cultural.

The second issue with the reward hypothesis is, "Why do we ever stop seeking the fulfillment of a need?" In the case of eating, the question is, "Why do we ever stop

eating?" At some point an individual human does not want any more (in a single sitting) of a particular food, for example. The environmental signal (termed a 'reward') didn't change, the individual did. Essentially, reward is a subjective property individuals assign to a signal based on their past experience, and their current neuro-body physiological state. And, it underlies all individuals' motivations.

**APHORISM:** *The sated appetite spurns honey, but to a ravenous appetite even the bitter is sweet.*

## 7.4 The internal reward signal

**INSIGHT:** *Everyone needs something beyond life support, something more like meaning, purpose, exploration, restoration, and an environment conducive to supporting their development toward a higher potential.*

What is the internal signal individuals' experience that causes them to seek the fulfillment of their needs? For example, what is hunger? The signaling of a presence of a need is not a single motivation (or "force"). Instead, it is the interaction of several different processes. In the case of hunger, it is the interaction of four different clinically measurable, provably distinct biochemical processes:

1. **Satiety:** The mind-body's *capacitive state*. In the case of hunger it is the body's *nutritional and metabolic state*. It includes both the biochemical response to the absorption of nutrients, and access to stored nutrients.
2. **Satiation:** An estimate of future fulfillment. In the case of hunger it is an estimate of future satiety, based on the sensory and cognitive experience of eating.
3. **Hedonic impact ("likes"):** The pleasure someone experiences from an action. "Palatability" is the hedonic impact of food.
4. **Incentive salience ("wants"):** The actual motivation to obtain something that is "liked". It is largely, but not exclusively, a product of the other three motivations.

Note that it is important to recognize that likes and wants are not limited to food. Any experience someone "likes" - that has hedonic impact - is capable of producing a "want" for more - incentive salience.

It is also very important to point out that what is colloquially called "reward" is a mashing together of hedonic impact and incentive salience. Both vary independently, and both are properties relative to the subject; hence, the term "signal reward" (or "food reward" in the case of food), which implies a singular property of the signal itself, is intrinsically misleading because it creates the cognitive trap of the self-limiting [reward] model. Interestingly, the claim that "wants are

"infinite" represents a similar cognitive trap.

Satiation and satiety are synonyms in common usage: so, why are they distinguished? The answer lies in material space-time (i.e., needs have a temporal and spatial nature). In the case of food it lies in [at least] the gastrointestinal transit time: it takes hours for the nutrients in food to be digested and absorbed (or "assimilated"), which means that the satiety response is not a useful signal to stop eating.

The idea of pseudo-satisfaction now becomes relevant - it is possible to distinguish two types of satiation: positive and negative. For example, when people eat real food, they are rewarded twice: once by the pleasure of eating, and again by the pleasures of positive satiation and satiety. In contrast, negative satiation is that sick feeling people get when they have eaten too many empty calories. It is the body's way of telling them, "We can't dispose of any more of that." So they receive that quick hit of pleasure, or hedonic impact, from eating tasty but nutritionally empty non-food - but it's over the moment that candy slides down someone's throat, and the individual never receives the hedonic impact of positive satiation and satiety that tells them, "You're done, you can stop eating now." And with each bite of empty calories, people not only receive less and less pleasure - they make it more and more difficult to achieve the pleasures of positive satiation and satiety.

Furthermore, because satiation is the sensory experience of signal processing (e.g., eating), it can be fooled. It's well known that in the case of food:

1. People eat more in specific group configurations than when eating alone. (Lumeng, 2007)
2. People eat more when they're able to eat more quickly.
3. Hidden calorie preloads are never completely compensated for.

It is possible to fool satiation, but not so much food satiety, which modulates reward. And, satiety is the salient factor to understanding the signal-need, because:

1. Satiation is an estimate of future satiety based on the sensory and cognitive experience of eating, in the case of food.
2. Both a subject's likes and wants are very strongly modulated by satiation and satiety.

Three more factors interact with the signal to modulate fulfillment:

1. **Availability:** How difficult it is to get something that is wanted.
2. **Certainty:** How certain it is to get something that is wanted.
3. **Willpower:** The conscious overriding action of the forebrain, known as "executive function".

The problem with popularizing for mass consumption is that it's easy to simplify a concept until it's no longer true. In the process of oversimplification, concepts also become *politicized* - and the naive model, in which reward is a property of need that causes dis-ease (or, want is a property of the individual self that causes infinite wanting), is being used to resurrect a multiple false hypothesis [for a variety of agendas].

**QUESTION:** *For who does this fail?*

## 7.5 A commonly evolved nature (human commonality)

Human needs are an independently experiential and conceptually understandable base of commonality among humanity. From that initial base arises the temporal formation of a materialized service system architecture to fulfill humankind, together.

Infants do not have need categories that differ from one another. Their initial goal is to eat, sleep, expel waste, and experience social comfort.

Humans share a common (species) life-requirement boundary, because humans share a commonly evolved organic-psycho-social [material] nature. Humans also share a biosphere (as in, planetary ecology) where each individual human expresses a set of requirements from (i.e., demands on) the environment. Hence, the biosphere is a common interest, and without coordinated organization, the requirements placed on the environment by individual human beings may easily lead to disaster, such as resource depletion and systems that produce harm. Hence, the common interests of human life involve objective life requirements at ecological, individual and social levels. In other words, there are a set of life-interests common to all human beings, and these common life-interests are [at least] the life requirements of humans and their ecology. Said in another way, there are life-interests grounded in life-requirements that are common to all human beings.

**STATEMENT:** *Human needs are a common interest and concern of all of humankind.*

Within the life requirement boundary, humans express a range of physical and behavioral variance. In some cases that variance is conscious; for example, someone can train themselves to hold their breath for longer durations of time, or train to perform well in extreme temperatures. In other cases, the variance is environmentally determined, such as, when acquiring food from a completely wild landscape. Humans living in a jungle will have access to a specific set foods, whereas humans living in a temperate climate will have access to another set of foods. And further, within each food "landscape" there will exist some degree of access, from scarcity to abundance. Therein, social exposure to the different degrees of access is likely to produce a set of commensurate behaviors adaptive [given what is

known] to that environment.

It is significant to understand that individual, psycho-social development (i.e., conscious embodied experience after birth) can change an organism's relationship to the natural world, but natural necessity never disappears from human life, and remains as a constant underlying set of life-requirements.

Although people's stated wants may differ significantly from person to person, what humans truly need in order to be well, happy and healthy was evolved through our shared phylogenetic development, and is the same basic set of inputs for all humans. To extend the example of an organism, individual organisms of a given species may vary to some degree in how much they can tolerate water deprivation, but this variance is constrained by the parameterization of the need across the species.

**APHORISM:** *We can experience nature in common.*

## 7.6 Human nature

**INSIGHT:** *There is a common humanity. Among community, when we see nature, we see the interconnection of consequential information.*

If human nature is a thing of any kind, then it is [at least] the needs of the human organism that have a terminal consequence on its behavior in the context of an environment. Human nature, in this sense, is the manifestation of behavioral traits, psychological characteristics, and emotions under particular environmental and learned conditions that support or thwart the fulfillment of common and persistent human needs. Herein, human nature is characterized within the context of human needs. To claim that human nature is any one behavioral trait, such as stating that "humans are violent and greedy by nature," without identifying the environmental characteristics and existent relationships in which the behavior manifests is scientifically incorrect. To de-contextualize "human nature" from human needs, physiology, and from the totality of the environment is unlikely to facilitate fulfillment, and is likely to spawn forth self-generated illusion and human conflict. Essentially, human needs are a frame of reference for inquiry into human nature. Human behavior is a direct result of the reality in which the behavior exists. Human behavior can be highly predicted based on the environmental context in which the behavior manifests. Fundamentally, environment shapes behavior, and the behavior of organisms can be changed by changing the environment. Of course, humans are genetic beings, and thus, all behavior must necessarily center around the topic of human genes, human needs, and the total environment. Importantly, the basic animal behaviors (on Earth) are: predation, feeding, foraging, mating, and habitation.

**INSIGHT:** *There is a human instinct to understand, to find meaning, to map oneself and*

*one's actions and the world.*

Human behavior exists within a vast ecosystem of experience that is always adapting to stressors and incentives. When specific societal structures (Read: social, decision, material and lifestyle) become endemic in an area, it is very likely that we are going to see adaptations of the humans in that environment. Exposure to elements within the environment highly shape behavior, physiology, and overall life experience. When societal structures are out of alignment with human need fulfillment some of those humans living in that environment are likely going to manifest dis-ease, psychological and/or physiological in form.

Humans are at least conscious, bio-psycho-social organisms that react to their environment (physical and mental). Humankind is by its very nature a social organism (i.e., there is a psycho-socio-physical dimension to human life), and by consequence, social-technical organizations (or systems) have evolved. An awareness of one's "human nature" (as self-knowledge common to all) is also an awareness of the self as a social organism beyond (and within) the persona or 'ego'. Social norms as well as individual behavior cannot be taken as a given, uninfluenced by an environment of connection and interrelationship. If human nature is claimed to involve a behavioral trait, then the statement must include qualifications that accurately describe the environment within which the behavior manifests and an evidential rationale of the human need (or common terminal consequence) that the behavior seeks to meet. All behaviors, wants, desires, and preferences are eventually traceable to a terminal human need in a larger systematic environment.

As humanity defines who it is, how its bodies and minds work, how evolutionary pressures shape what humanity has become, then humanity may find that the scope of variables expand through interconnectedness. Humanity may find that it is impossible to define who humanity is without also defining what is in and around it (i.e., in the surroundings): the air that is breathed, the sunlight that bathes the planet; the food taken in; the social connections with others; the shared mental models; the trillions of bacteria that are on everyone, and within, everyone; the shared DNA with all living things. The deeper humanity looks, the more it is likely to see the interconnectedness of all things.

The environment is an essential component part of the variability element of what is commonly referred to as "human nature". The behavior (and personality) of humans is greatly influenced by their environmental conditions and conditioning. In other words, behavior does not occur in a vacuum, it is considerably shaped by environmental variables. Human nature, if granted such a thing exists, is an amalgam of human needs in an environmentally embodied context. In short, what is going on in the environment shapes individual brains and behaviors. And, there exists a discoverable relationship between needs and the surrounding sources of their

fulfillment.

Environmental conditions signal, incentivize and compel people to behave in specific ways. The conditions of early 21st century society compelled people to exploit and be exploited. There, everyone was trying to get ahead of their competition, down to the last individual. Such conditions cultivate some of the worst qualities of human behavior and normalize them.

Genes are not independent initiators of commands; they rely on environmental triggers to come into effect (i.e., to be 'expressed'). Recent scientific papers show that it is the surrounding environment which is often more important than a "perfect" stem cell. There can exist a near "perfect" cell (i.e., stem cell), but it will still not develop and function optimally if the surrounding environment is diseased (or "off"). If the environment doesn't offer all of the signals necessary for the cells full functioning, then that cell will not have a structure from which to develop toward its fullest potential.

Humans display behavioral propensities under certain environmental conditions (i.e., under particular environmental contexts). It is generally the environment that triggers these propensities. As such, there is not necessarily a fixed human nature, there is human behavior dependent upon an environmental context that to some degree either meets or does not meet needs; there is consciousness dependent upon sensory information, which thwarts or facilitates the fulfillment of human need. Therein, the flourishing of the positive traits of human behavior arises when humans experience the sufficiently free fulfillment of their needs. And, a failure to fulfill that which is desired by fundamental human nature will produce results that are personally and socially destructive (e.g., fearful primitive reactions and the desire to control or manipulate others' lives).

The world is not someone's egoic projection; it is the world as it is, the world in its natural form - nature is the model. Nature is not "out there", every individual is a part of it. Nature does not have to be split from humans or from the social. People project their own values onto others, and that is where they are wrong about others and about human nature.

Any definition of human nature that is not grounded in evidence common to all humans for its claim is likely to establish an ideology of artificial limitation and mar an individual's or culture's perception of their fellow human beings. Some things that are assumed to be human nature are very much cultural, whether this be food choices, leisure activities, work behaviors, discrimination biases, and violent tendencies. The real question is, what is human and what is cultural? And, how is the universal human condition shaped by culture?

Some people believe that human nature is "flawed", and then, they go on to claim that society needs a government made up of humans to do the "right things" and make the "right choices". Some people believe that authority is the fix for the mistake that is humanity.

Some cultures have become rather impoverished in their understanding of human nature and also rather

impoverished in the range of what they consider to be human potential. Many individuals become victims of the culture into which they have been conditioned -- their sense of themselves, of others, and of what is possible is caged by the culture-bound choices of those who have come before them. And at a neurolinguistic level, it is very easy to reinforce one's own prejudices by repeating declarations about what one believes human nature and one's own capabilities are limited to. A slight change in repetitious thought pattern can bring about major effects [over iterative time]. There are real attachment disorders to real[ly unpleasant] experiences of existence.

In each moment, individuals choose from among those possibilities in their awareness, and their lives are expressions of these choices. Perceptions are not always accurate and choices are not always made rationally, and this is largely due to a distorted view of who one is (and the self-limitations that one repeats to oneself).

Nature is not "out there", humanity is an evolving part of nature. Rather than viewing oneself as an isolated individual at odds with the outside world (and sometimes, oneself), and in conflict with others who are essentially similar to oneself, it is wise to view one's self as part of a single unified field of existence. How might that perceptual change influence the way a population interacts? How would individuals treat others if they understood that everything they do to them and how they treat them, that they are ultimately doing to a part of themselves? How might an individual treat oneself if one were to realize that much of what one says and does to oneself, one is also doing to others?

Most inaccurate perceptions of human nature eventually translate into the fallacious assumption that the interests of the individual and those of society are mutually exclusive (i.e., not inclusive). This dichotomous view of social reality perpetuates prejudice, bigotry, oppression, exclusion, and multiple other forms of corrosive ideology. It creates social problems that are in fact unresolvable 'pseudo-problems', which must be approached from a more accurate perception of human nature (and natural systems thinking in general) to adequately resolve.

In early 21st century society, perpetual neglect of human need by other humans in early 21st century society is a societal experiment being carried out right before everyone's very eyes and tested on a daily basis in nearly every form of media you can image. If one's needs are not met then one's behavior and values are more likely to manifest into "negative" human characteristics (i.e., harmful thoughts and behaviors), which are then used for judgment and punishment by "authorities" and other "negatively" confused individuals.

In a very real sense, the only limitation on human potential is nature, the laws of which all of humanity are all a part. In any culture humans have all manner of potentialities for what they may become. What they do become, however, depends largely on which possibilities are cultivated and which are hindered and repressed.

The exploration of a higher potential depends greatly on the kind of society an individual lives in, since all humans can only exist as social beings.

It is not scientifically accurate to say that "human nature dictates" ... anything. For is now know that the human system (and all living systems in general) reconfigure themselves through [at least] environmental signaling. Hence, anytime someone says, "Human nature dictates ... ", wait for the ideological statement that follows, to more greatly understand where they (Read: their active belief systems) are originating from. Fundamentally, both heredity and environment interact with each other to influence the development of the individual. Life is, in part, an adaptive response.

**INSIGHT:** *The structure manifests the individual.*

### 7.6.1 The natural, organic-social nature of human need

**INSIGHT:** *Needs do not necessarily imply awareness by the needer.*

The social self-consciousness that enables humanity to generate meanings, is not an abstraction, but a development of the specie's organic, genetic nature. Human social (and cultural) evolution arises organically from the adaptability of the species to an environment. Although adaptability is structured into the genes, it is possible for adaptability to operate (at a higher level of organization) through mechanisms in the societal system itself (and, at a lower level, in the central nervous system of individual organisms). In this sense, there are "natural" needs, as needs which are programmed into the organism by nature. They have evolved over generations as mechanisms by which the organism survives and thrives.

**MATERIAL LIFE SERVICE STATEMENT:** *Humans maintain a requirement for the interface and input of adequate material elements of [at least] air, food, H<sub>2</sub>O, and waste-handling [cycling] systems.*

Human nature is [at least] organic-social. To be a human being is to be an individual of a species that can construct its own society, evaluate it according to theoretical, hypothetical, and moral standards, and change it in response to systemic problems and contradictions (given the necessary conditions to do so). The natural ties established between human beings and nature by organic life-requirements are also social ties binding individuals to one another through different forms of "collective" input (contribution or labour), and through which these societies are built, interpreted, and changed.

The total life-ground for human beings is inextricably natural and social. Therein, work, as the most basic social requirement of human life, connects the natural and social sides of the human being within a materialized environment. In society, work occurs through the

structure of an [economic] decision system, understood in its instrumental life-value as the structure and activities through which human beings fulfill human life-requirements. In community, the [economic] decision system is the necessary condition for effecting a change of matter between humankind and nature.

In order to universally fulfill all human need, any materially fulfilling economy must prioritize the system's production and cycling of use-values, which have life-value. Since human life cannot persist without the production of life-values, the first shared socio-cultural requirement of human life is an decision (economic) system that is in fact life-grounded. The material environment, and any economic movement therein, is a space of social interaction within which intrinsically life-valuable cognitive and creative capacities can be developed and expressed.

There are at least three assumptions underlying the claim that needs are present for individuals, and that they can be fulfilled together at the social-/societal-level:

1. Needs relate fundamentally to the life of an organism.
2. The appropriate fulfillment of needs make it more likely for a healthy self-organism and commonly healthy social structure to emerge and be sustained.
3. Needs fulfillment/satisfaction provides a firm basis for forging a common identity between individuality and sociality.

#### **7.6.1.1 Social life-requirements**

There are a set of objective, universal social requirements to human life. These requirements of social life are not relative to distinct societies. The comprehensive conditions for well-being are not reducible to the physical-organic requirements of life; there is also, from multiple organically similar and interactive individuals, a social dimension. There is a shared human life-requirement for social organization that enables all individuals to participate as socially self-conscious agents in the ongoing processes of socio-economic development and societal evolution. A social life requirement is the requirement for transparent organization that enables the effective contribution of individuals to sustain and developed evolution of the society. Socially, human life (i.e., individual conscious intention) becomes capable of accessing life's requirements fairly and optimally.

Whether life requirements and personal goals are accomplished depends on the physical availability of resources and knowledge. If there is sufficient resources, the problem is not natural scarcity, but the structures (institutions) and value system(s) that manage the use of those resources. All societies have some organized ("instituted") means of arriving at and taking ("making") commonly ("collectively") binding decisions on the access and usage of resources.

In the market-State societal model, these institutions are commercial and political, and they function to determine how collective life will be governed by force. In community, there is an open source, unified information model that algorithmically resolves a decision space, which materializes change in the physical environment. Some of that change is performed by humans, or else it is performed by a variety of automated services. There are macro decisions, such as how access is determined (as personal, common, etc.), and there are micro decisions, such as group requesting access to a set of resources, or possibly a change request to the materialized habitat service system (i.e., city).

In the Market-State, human life often becomes reduced to a tool or instrument[al form] of exchange. Therein, the harm to which people are liable as socially self-conscious agents is to be reduced to the status of tools or instruments (of systems and/or other human). What is harmed is the human interest in the socio-economic system, as well as the human capacity to effectively participate in the determination of decisions.

#### **7.6.1.2 The first social life-requirement**

The first social life-requirement is an organized, higher order 'decision', and lower order 'economic' system that organizes and coordinates contribution ("labor") to produce use-values that have instrumental life-value as well as producing organic life-requirement satisfiers.

- **Instrumental life-value** - resources, structures (institutions), relationships, and practices that maintain life.
- **Intrinsic life-value** - the expression and enjoyment of the capacities that the satisfaction of life-requirements enables.
- **Good** does not express a mere subjective preference, but an objective determination that the object will satisfy a real life-requirement so as to enable higher-level expression and enjoyment of life-capacities.

All human values are at the root life-values: they are a conceptual object which satisfies a life-requirement and that in human experience and activity which is enjoyed as an expression of human capacities to feel, sense, think, imagine, and create.

#### **7.6.2 The nature of human need, requirements of a human life**

Prior to any social (socio-cultural) shaping of consciousness, consciousness is born with a human body, whose possibilities and capabilities do not belong to any culture. The experience of the body may be socio-culturally influenced, but the body itself, prior to social experiences, provides limits and parameters that ensure a great deal of overlap in what is going to be experienced where hunger, thirst, desire, and the senses

are concerned.

The basic requirements of a human life are not cultural or social constructs. Human biology is not an abstract [mental] construction, and it is not superseded by historical events or socio-cultural creations. If eating is not a material reality, and it is just a social construction, then so too is mass starvation a social construction. If mass starvation is a social construction, then it cannot be criticized on the basis of the life destruction it causes, because there is no material reality to be damaged. Consciousness, in its thinking, can abstract itself from the life-ground that forms the real material conditions that keep the consciousness alive in a physical body. Actual ignorance of the real material conditions of life would kill or cause significant harm to the body. Similarly, actual ignorance of the real social conditions of life would cause suffering to be likely. Fundamentally, there is a difference between a construction and the materials out of which the construction is built.

**ASSIGNING MEANING:** *It is possible to assign some meaning to some thing in material reality that does not naturally or intrinsically carry that meaning. There is nothing in the thing (standard) that causes it to mean anything more or less than what it expresses, or what it might express under different conditions.*

Humankind, like all organisms, lives (i.e., continues to exist) in some degree of alignment with its evolved biology. When organisms do not live in a sufficient degree of alignment with their biological-organic requirements, then there are biological-organic detriments that are likely to lower the potential [life-capabilities] of the organism.

#### 7.6.2.1 The life requirements

All life exists within (i.e., requires an environment of a specific composition):

1. Requires definite ranges of tolerance.
2. Requires definite ranges of environmental conditions.
3. Requires definite ranges of inputs of natural resources.

Each factor (or, fact-or) is measurable (or potentially measurable) due to its existence within a physical, material environment.

The fulfillment of each required factor (tolerance, condition, and input) is affected by a given society's organized structure and the active value system therein that encodes ("legitimates") that structure. The material requirements of life are not only environmental, but include the active value system that determine the access and usage of environmental resources.

#### 7.6.3 The nature of a set of life requirements, known in part, as human needs

There are at least three dimensions of human nature through 'human need', which are universal:

1. All human beings are **organisms**, and these organisms encodes physical-organic requirements of life.
2. All human beings are **potentially socially self-conscious agents** (Read: social potential, opportunity). The realization of this potential depends on the satisfaction of definite social requirements of human life.
3. The lifetime of all **human beings is finite**, and the **free realization of an individual human capacities depends** on both the quantity and the quality of the environment (and life-time therein). Thus, there is a distinct life-requirement for freedom (free time), without which the free realization of human capacities is not possible. Free-time is time away for open-ended structure activity free from externally imposed deadlines, this time is required for flow "time". (Noonan, 2014)

The above three universal dimensions of human nature become the three high-level categories of human life requirement fulfillment:

1. **Organic ("physical-organic") life requirements** (biologically material requirements) - Physical-organic requirements of biological life. Life happens through a physicalized vessel, and in this reality (dimension), it requires a biological vessel (*given what is known*) There are a set of physical-organic requirements to all living organisms (i.e., to human life), including: air, water, food, shelter, etc. Fulfillment of these requirements leads to the development, sustainment, and optimization of biological life. Access to life support is required.  
A. Wherein, insufficient fulfillment here is likely to cause harm in an organisms biology.
2. **Socio-logic ("socio-cultural") requirements of life** (socially material requirements) - The conditions of self-conscious, socially engaged agency require the satisfaction of definite psycho-sociological requirements of human life, such as the ability to contribute and participate, and access to information. Psycho-sociological requirements are the social conditions required to develop the individual capacity to identify with and care about others—as opposed to encountering them as competitors or potential rivals for access to means of subsistence or other life-requirements. Fulfillment of these requirements leads to the

- development, sustainment, and optimization of social life. Access to community services is required.
- A. Wherein, insufficient fulfillment here is likely to cause harm in an organism's humanity.
- 3. Temporal ("personal") requirements [of free human life]** - Requirement that the environment afford/allow sufficient free time to develop any capacities or interests, beyond staying alive, that someone intends to develop and express. Time is required if social self-conscious agency is to develop optimally. What are the access opportunity requirements, given a temporal and condition environment, free[ly self-integrating] human life.
- A. Wherein, insufficient fulfillment here is likely to cause harm in an human organism's potential.

## 7.7 Human emotional intelligence

*A.k.a., Human need of emotional intelligence.*

Emotional intelligence encompasses the ability to recognize, both in oneself and in others, the emotions that often act as the driving force behind our actions—whether these emotions operate at the forefront of our consciousness (macro- and micro-expressions) or linger in the depths of our subconscious minds. Being emotionally literate, or having the skill to give an appropriate name to what is felt, becomes a cornerstone of effective communication and self-awareness.

Moreover, this emotional intelligence extends beyond mere recognition. It involves the understanding of how to control and direct emotions in a manner that channels their energies constructively, preventing people from falling to the potentially destructive influence of specific (harmful) emotions. This understanding applies not only to individual's personal lives, but also to the broader global societal issues. Emotional intelligence is a skill in thoughtful, empathetic, and impactful self-recognition and other-recognition as connected a common humanity with common human needs while existing on a common planetary surface.

The top-level words and concepts related to the provided information on emotional awareness, expression, and influence include, but may not be limited to:

1. Emotional intelligence: This overarching concept encompasses the ability to recognize, understand, and use emotions effectively in oneself and others. It includes emotional state awareness and self-regulation of one's own emotional state.
2. Emotional literacy: This refers to the ability to recognize and name one's own, as well as others, emotions accurately and understand their sources (to human need).

3. Emotional regulation: The capacity to change/control one's emotions, ensuring they are constructive and do not negatively impact behavior.
4. Emotional communication: The skill of effectively talking about emotions, including those related to complex topics.
5. Influence through emotions: Understanding how emotions can be used to influence or sensitize others to specific topics, to bring awareness and influence action and/or inaction (a.k.a., persuasion, rhetoric).
6. Empathy: The ability to understand and share the feelings of others, which is closely related to emotional awareness and communication.
7. Human need awareness: Knowledge and understanding of human needs as axiomatic societal issues/directives, including the emotional aspects associated with human need completion and scarcity.
8. Behavioral impact: Recognizing that emotions often drive behavior, emotions have sources, emotions can be conscious or unconscious, and understanding emotions and how to change emotions to create better outcomes.

Emotions are an integral part of the human experience, and they can become classified as "high" in two contrasting scenarios, both contextualized by human need:

1. when fundamental needs are not met, and
2. when fundamental needs are fulfilled, leading to moments of celebration.

In situations where needs are unmet or threatened, such as the need for security, belonging, or recognition, emotions like fear, anxiety, frustration, and anger can surge. These emotions serve as powerful signals that something essential requires attention or action. They mobilize our resources and drive someone to address the challenges at hand, prompting problem-solving and adaptive responses.

Conversely, when needs are genuinely met or exceeded, it often leads to a surge of positive emotions like happiness, celebration, joy, and gratitude. Celebratory moments, whether big or small, mark the culmination of efforts and the fulfillment of desires. These emotions not only provide a profound sense of fulfillment, but also strengthen social bonds as we come together to celebrate achievements, milestones, and shared successes.

Emotions, in both scenarios, serve as a parametrized and expressive aspect of human nature, guiding responses to life's [human need] challenges, and potentially, when engaged with intelligently, expressing more joy and love in life. Recognizing and understanding emotional responses can empower people to navigate

experiences with greater self-awareness and enhance their ability to connect with others in moments of both adversity and celebration.

## 7.8 'Human need' universality, and thus, society

Universal needs provide an common grounding for the planning, design, and living development of society. Because life, and its optimization, has requirements, there are (intuitive and testable) requirements placed on society. A society can select to fulfill these requirements, or not, and by degree.

The method is to propose the satisfaction of 'basic' (Read:global, universal) human needs. There are different views on the complete overall view of the whole human system. One of those sets includes the recognized needs of: identity, security, and recognition, as the underlying organising principle for designing social structures, and to apply that conceptual framework to the task of creating functional institutions designed by working groups and members of the habitat service system team, working together. In other words, at the global level, the fundamental characteristic of all common, human categorical 'need', is [what do "you" propose; working together as an integrated and unified unite within a larger environmental system in which there is the potential of intentionally embodied movement.

This type of reasoning is sometimes called the 'needs-based approach'. The needs-base approach accounts for the sufficient fulfillment (i.e., sufficiency or enough) of needs through an access service system, transparent to everyone (so that that which exists can be accounted for commonly by everyone).

Here are the categories of experience as related to a common human experience:

1. **Nature (ecology/natural):** Natural services are the renewable and non-renewable goods and services provided by ecosystems.
2. **Information (memory and processing):** The information system consisting of human memory and externally accessible information repositories. An accurately aware ` information system is required for optimal operation of a resource using system.
3. **Coordination (social):** Time and place networks and norms that facilitate cooperative action. Cooperative action is required for optimal usage of resources and a the functional operation of habitat services (in the form of a city).
4. **Operation (built):** The habitat service system is a localizable set of [nature re-configuring] operations that use resources to produce goods and services that regenerate global fulfillment.

There are two general categories of need, given material conditions (materiality - the ability to think and act in a physicalized environment):

1. Material needs are those needs that cannot be satisfied without some level of material throughput in the economic system (i.e., the materialized habitat service system, material satisfiers).
2. Non-material needs can conceivably be satisfied without any extra material throughput beyond the [sharing of the] human relationship (i.e., internal and social conditional quality satisfiers; e.g., social connection, self-direction, and safety).

## 7.9 Human needs assessment

*A.k.a., Human research program, human systems design standard, human systems engineering and integration, human factors (human factors integration), human integration, controlled environment systems research.*

The output of a human research program is a set of working-group human system design standards. These are standards to be applied in human systems engineering (a.k.a., societal systems integration). Here, the idea is that the human organism is an integrated factor in the system's design.

## 7.10 Principal characteristics of the 'human needs' list

As with all systems, the system that composes that which humans require, described at the level of commonality (human need), has the following principal characteristic:

*As in many systems, the full satisfaction of a level [in the supra-system] is not necessary so that a human seeks and gets satisfaction of higher level needs.*

What is the acceptable level, the decisional selection, of need satisfaction? This necessitates the evaluation method of specifying a target level and then measuring the shortfall or error between observed levels and this target. Thus, a given indicator (e.g., 'health') shortfall or new dis-ease indices a measurable the health gap, which is a societal gap. The question then arises: how is the target level set?

1. **Basic need threshold** (for life support)
  - A. **Basic needs maintain a moral threshold (life support and some technical)** - the only morally relevant threshold for basic need satisfaction is the optimum level. In principle, [need] satisfaction is adequate when, using a minimum amount of appropriate resources, it optimises the potential of each individual to sustain their participation in those constitutive activities

important for furthering their critically fulfilling interests. This could be considered 'human dignity', such that everyone has that which they require accounted for as a single system.

## 2. Intermediate need threshold (for exploratory/facility support)

**A. Intermediate needs maintain a life developmental threshold (facility and some technical)** - Intermediate needs apply to properties of services, products, activities, and relationships that enhance health and fulfillment in society. These are Facility (service system) and some Technical (service system) needs. The threshold is where additional increments of an intermediate need generate decreasing increments of basic need satisfaction, until at a point no additional benefit is derived. This threshold point is called the minimum optimorum (or minopt) threshold: the minimum quantity of any given intermediate need satisfaction required to produce the optimum level of basic need satisfaction. In principle, this defines threshold levels for each intermediate need.

## 3. Inequality need threshold (for decision support)

**A. Inequality in access threshold** - inequality in access to services from common heritage resources and services.

### 7.10.1 Common terms related to the information category of 'human need'

There are two common terms related to the category, human need: universal needs and absolute needs.

#### 7.10.1.1 Universal needs

Think about universal concerns. Food, for example, is a universal concern; everybody needs it.

#### 7.10.1.2 Absolute needs

Absolute (or "categorical", "entrenched") is a [human] need, which if unmet during a specified time period, the state of reduce life potential or cause serious harm will result. Absolute [material] need categories are the same (universal) for each individual of the population.

In terms of the "I", absolute needs may be structurally defined as:

1. "I" need [absolutely] to have x,
  - if, and only, if
2. "I" need [instrumentally] to have x if "I" am to avoid being harmed,
  - if, and only, if
3. If "I" avoid being harmed, then I have x.

As a statement [of input]:

*A person needs [the input of] x absolutely, if and only if, whatever is possible to occur within the relevant time-duration, the person will be harmed if s/he goes without [the input].*

#### 7.10.1.3 Human basic needs (basic human needs)

Simply, a basic need is that which no one can live without and not suffer a loss of life capacity. For example, one cannot do without oxygenated air or potable liquid or caloric intake in any degree, without a proportionate reduction or destruction of life capacity. For all [basic] needs, there are scientifically establishable limits of life capacity range and the degrees of its reduction correlating with the degrees of deprivation of it. For example, one cannot live X number of minutes (average is 6 minutes) without any breathable air, x number of days without water, etc.

Individuals require access to basic human needs to survive. The basic human needs on Earth, in simple terminology, are [at least]: food, water, shelter and clothing, air, energy, and safety. If any one of these basic needs is not met, then humans cannot survive. After these basic needs are met, the community can express a more fulfilling form of human expression involving social life optimization needs (e.g., transportation, information processing, self-actualization, etc.). The essential basic nature of human needs have not changed (for instance, fire may now be necessary for food's relationship to health, but there is still food as a need), and they are universal requirements for personal survival and thriving together.

The ability of humans to satisfy these basic needs arises from the ability of humans to access ecological services (natural resources), construct operational services (habitat service system), and coordinate time & place tasks/activities (coordinated action). The ability of humans to optimally satisfy all human need arises from the ability of humans to cooperate and coordinate.

### 7.11 Satisfaction, pseudo-satisfaction, and the reality of needs for a stably directed society

**INSIGHT: Community facilitates stability in fulfillment.**

Human systems exist at several levels, not only at the individual level (also social, economic, and ecological). In each system there exist a set of human needs that may or may not be fulfilled by the structural design of the system. Therein, human societies are complex systems embedded within a supra-system, the global ecological environment. Since humans are dependent upon that environment for the necessities of life, and since human activities strongly influence both individual and environmental health, a society needs to be well-informed about the state of each interrelated system if it

is to remain stable. This implies the need to identify and monitor key indicators of the state of human fulfillment, socio-economic sufficiency (i.e., "public health"), and the health of the natural ecological environment. Further, stable societies facilitate open and integrated relationships between individuals such that needs are acknowledged and sought fulfillment synergistically and at a global-community level.

A stable community is one in which human needs are recognized and are sufficiently fulfilled (i.e., a threshold of need sufficiency exists) such that the highest potential direction for each individual is clear to themselves in the moment. When an individual's needs are not sufficiently met, then they are likely to act in an impulsive manner toward "getting their needs met", which often comes at the expense and cost of others. When society recognizes needs, then probabilities turn in favor of socially corrosive values and behaviors being washed out for examination by society. Alternatively, socio-economic systems that do not account for human need are highly likely to generate a systemic form of social instability (e.g., structural violence) and move society in a direction that costs humanity its "humanity", and ultimately, its highest potential. Some societal structures are mental illness producing mechanisms.

Of course, people are manipulative and seek power in an environment that incentivizes and/or requires those attributes in order to get needs met (e.g., in an environment of socio-economic competition). The behaviors that humanity expresses must be viewed in the context of the environment; when humans are in an environmental state of artificial scarcity and socio-economic competition, then there is some degree of certainty over the types of behaviors that likely to appear. And, when there is socio-technical cooperation, then there is some degree of certainty over the type of behaviors that are likely to appear as a consequence. Human behavior can be changed [in part] by changing environmental variables, through actions by other humans (subjects) and the natural environment (nature).

In early 21st century society, it is often the case that social instability starts with a lack of recognition that children also have human needs. Children, as common human beings, have needs that require fulfilling, just like adults. At a fundamental level, a more free society is a society that nurtures the fulfillment of even the young ... especially the young.

Recognition of human needs is necessary for social stability for at least two sapient reasons. First, human needs direct human action. This direction, in combination with environmental conditions and opportunities, allows for the fulfillment of needs and sets the course of human development. Secondly, human needs are a key factor in the adoption of new ideas, technologies, and systems; ideas will not be adopted by a society unless a presumed need for them exists. Some ideas, such as that of retribution and of infinite economic growth, are verifiably harmful to the well-being and needed fulfillment of individuals. When human needs go

unaccounted for, then it is highly likely that ideas which promote suffering will continuously re-manifest.

A social system for fulfilling human needs cannot be designed to provoke behaviors that lead to social corrosion and instability if it is to remain a viable long-term system. The basis of any society or "civilization" ought to be a socio-economic organization that is systematically designed to reduce and/or eliminate violence between individuals, to improve the alignment of conceptual understandings with nature, and to improve individuals' access to common resources - these are the characteristics of a truly civil civilization. Societies that systematically regenerate states of harm are not civilized.

Further, without an emergently formalized social system based upon human needs, how is any economy supposed to function sustainably and without violence. Instead, economies will continue to function via competitive gaming, authoritarian, and other structural forms of violence until they account for and are informed by the common lifeground of which all of humankind is a part.

A socio-economic system that maintains or exacerbates an imbalance in the fulfillment of needs is one of the most caustic organizations a society can have. This is in part explained by humanity's deep psychological need for connection, sharing, and a social communication. The human organism is a social organism with a social neurophysiological makeup that allows for empathic connection within its own species and with others. Humans are hard-wired for social connection, empathy, and support. In a community, an individual's well-being is often dependent upon the group's well-being. Fundamentally, the human brain is geared for socialization. At a functional level, the fulfillment of 'basic needs' and 'social needs' triggers the same reward centers in the human brain. An individual's psyche does not live in a solitary vacuum away from everyone and everything. Invariably people interact and influence each other's fulfillment, their emotional states, their needs, and their overall well-being. There exists an ongoing and identifiable relationship between human needs and the ambient cultural/socio-economic context that either supports the fulfillment or frustration of those needs. And, the way in which people orient themselves toward their social environment affects the environment's potential for providing them further fulfillment. Needs are commonplace in the real world. Needs are commonplace among humanity. And, a recognition of one's own fundamental needs provides the opportunity to recognize the same needs in others.

Humans are capable of experiencing both personal distress as well as distress for others (i.e., 'empathic distress'). When humans are distressed they behave compulsively and impulsively with causal regularity. Hence, a community-type society involves individuals who are aware of their human needs. It involves individuals who have awoken to their nature and to

the realization of why they behave in the patterned manners in which they behave, with recognition that some patterns are detrimental and others beneficial to the health and happiness of all individuals in society. For a society to remain stable, patterned behaviors that lead away from human fulfillment must be made visible. To ignore these behaviors or expect different results is a recipe for delusion and disorientation. It is commonly said that repeating the same behaviors and expecting different results is the definition of insanity. Those who are unsane are essentially stuck in their developmental understanding of what it means to experience the condition of human fulfillment; they are stuck in the true evolutionary progression of human consciousness toward greater levels of awareness, complexity, and morality.

Individuals have choices and have needs, and they can choose to fulfill their needs in ways that are meaningful and common to everyone, or in ways that are meaningful to their pleasure center in the moment and create suffering for oneself and others in the long-term. In a community-type society, individuals seek pleasures that are strategically life enriching, not vices that keep them in a static stagnant grip.

Under certain cultural and economic conditions manufactured, artificial needs (i.e., pseudo-satisfiers) become confused with objective, real needs. Needs are objective and exist apart from culture and economic [market] conditioning. In early 21st century, children are often used as pseudo-satisfaction for the[ir] adults' unfulfilled desires. Some people [for discoverable reasons] seek to meet their needs in the short-term, destroying everything else around them in the long-term. They do not identify their needs nor do they recognize ways of meeting needs that lead to strategic fulfillment as opposed to short-term pleasure and pseudo-satisfaction. They often sink down into regions of the brain that support instinctual survival and the rapid and obsessive short-term satisfaction (or, pseudo-satisfaction) of needs (i.e., compulsion). Compulsions overrule conscious thought (i.e., they over-rule thoughts and behaviors that have long-term and life-potential extending benefits. Early 21st century society maintains a dis-ease continuum that starts with a lack of fulfillment and the pseudo-satisfaction of real human needs and ends in warfare, scarcity, and ecological devastation. Pseudo-satisfaction represents the opposite of a higher potential adaptation and optimization. Pseudo-satisfied behaviors are often compulsive and irrational, and not oriented toward long-term fulfillment. And therein, people act most irrational right before they are about to acquire something they have a compulsion for.

When needs are truly fulfilled (or "sated") and not pseudo-satisfied, then impulsivity and compulsivity have the potential of being replaced with reasoned rationality and social intelligence. A single intense energy expenditure (that of reactive impulsivity) is replaced by a self-regenerating state of inquiry and fulfilling action that takes the form of rationality (as spectral ratio),

reason (as coordinated relationship), and intelligence (as integrated connection). Wherein, repetitive behaviors that are deeply unsatisfying transform into behavioral actions that align with that which has a naturally higher potential for being more fulfilling and more meaningful.

There exist things in this world that people perceive as needs, but are in actuality impermanent substitutes for real and deeply meaningful needs - there exist 'pseudo-satisfiers' (or 'pseudo-fulfillers'). Some of these modern substitutes among many other personal and socially stagnant and corrosive behaviors [and material objects] include, but are in no way limited to: lounging in front of the television; artificial flavoring and flavor enhancers, the rewards of "winning", commanding and controlling the lives of others, living through one's children, pigging out on ice cream, and gossip (or social drama). In order for a healthy individual to overcome the expression of pseudo-needs the real need must be identified and met.

Pseudo satisfiers are detrimental because they provide the sensation of need satisfaction when a real need is not actually being fulfilled. When real needs continue to go unrecognized, then individuals begin to consume more and more of what they don't need in futile compensation for what they do need - homes become cluttered, minds become confused, and people become fat and lonely [with over 7 billion people on the planet]. Nowhere is this maybe more apparent than in the context of modern [modified and nutritionally deficient] foods. Therein, individuals consume ever more quantities of food as their taste sensation is slowly changed with artificially loud and intense flavors. Also, industrial food stuff is nutritionally vacant and may be biologically incompatible; hence, it causes the body to feel ever more lost in hunger for real nutrition. The factual desire is for true hydration and biophysical nourishment, not industrially designed products marketed as food.

Deficiencies in [effective] fulfillment create cravings that are extremely difficult to deny. Commercial entities, in general, desire to engage a state of craving in their customers such that they have a deep desire to return to and re-purchase their products. They want (if not financially need) to engage a consumer's cravings and emotions, for that will cause them to continue the consumption of their products. For the purpose of "market share" commercial entities manufacture cravings and addictive behaviors that are very difficult to control once they have been engaged. Food manufacturing businesses, for example, are fighting for what they refer to as "stomach share" - the portion of your stomach that they can control and fill with their products (e.g., the bliss point and formulaic food "optimization"). (Moss, 2013) In other words, they are competing for control of the market share of "your" stomach. That is [in part] why they market their products using emotional appeal, and they manufacture their products with ingredients that maintain a high likelihood of creating a customer's desire to return to the food product over and over again. They want "your" cravings and your emotions engaged; they want "you" pseudo-satisfied.

Many real needs go tragically unmet within profoundly sick societies, some of whom begin declaring wars on natural desires, spawning forth states of individual and social instability. When societies begin declaring wars on various desires, such as "the war on drugs" or "the war on sex" the real needs become lost in the fight and frequently the war turns toward fighting the very expression of the real need. The war on drugs, for example, battles a sovereign individual's desire to experience different states of consciousness (i.e., consciousness exploration) and of plant/fungi "medicine" healing. The initiation of war against what is perceived as a social problem is not ever a rational decision; it is a decision from the State of greed and protectionism. Treating a problem as if one were at war with it will not solve the problem and will branch out new problems in the process. Has "your" society been declaring war on health symptoms? What if wars were distractions that serve business and the few, rather than the interests of human beings. There is a relevant maxim here: The first casualty of war is the truth.

What is not being said here is that there is never a time to fight or to struggle, or to apply willpower toward others immediate cessation of harm. These "warrior" defense instincts are part of each individual also, and they are important aspects of human nature and a humane desire to survive and live free, fulfilled lives. And, perhaps there are times when someone needs to trust his/her desire to fight or to struggle. But, what has happened in early 21st century society is that this particular response to problems, the response of fighting, struggling, and overcoming has become habitual to situations where it is not applicable; where its engagement doesn't cease harm, but re-generates a state of suffering.

When more people make more rational and meaningful choices, then healthy social interaction toward resolving systemic problems becomes probable. When reason and knowledge [and self-esteem] exist, then the idea of a deep purpose, and its unwavering pursuit, may enter awareness. When the state of need sufficiency exists, then progress toward a higher potential is more likely to regenerate itself in someone's perceptual field of awareness. When all psychological barriers to self-growth are dropped, then an individual has the possibility of entering into a state of constructive and creative flow, instead of re-generating states of self-limiting illusion. And, at a social level, *constructive flow* becomes *cooperative flow* wherein a more stable social state enters into the realm of probability.

Regardless of how human needs are fulfilled, if they are not fulfilled, then an individual's highest potential will always remain elusive and social cooperation toward a stable higher-potential for all will appear utopian (i.e., fantastically impractical; a fantasy).

There is no known greater force in life to direct destiny than the needs and the states of being that someone values most, for humans are highly likely to violate their values (and principles) to meet their needs [in environments that do not facilitate the real meeting of

needs]. Thus, if needs are not sufficiently fulfilled, then values are unlikely to coordinate optimal decisions as there is a high possibility that they will be overridden by the organism's instinctual impulse or compulse to meet an unsatisfied need, which has likely generated a persistent state of suffering.

If human needs are not capable of being fulfilled given a finitely regenerative system and transparent ecological conditions, then it would seem that humans may well be a non-viable organism. While the human population exploded, human societies developed in ways that have caused enormous damage to their own bodies and the ecologies in which they inhabit, which maintain their very survival and well-being. If, however, humans are capable of recognizing their needs on an individual level and fulfilling them on a sustainable socio-environmental level, then a stable platform might be persistently created for universal progress and cosmic exploration.

Living systems in all forms "evolve" and "respond to change" in ways that depend upon their internal structure and the characteristics of the environment within which they exists. It is desirable for purposes of the well-being of those who use the systems [in the community] to have the ability to evolve the systems themselves in order keep their re-creations in alignment with their emergent and dynamic intentions and ongoing issues of fulfillment. A preferential social organization would also be capable of responding to the ecological environment within which it exists and upon which it is dependent such that when the environment changes the individuals are capable of changing in-turn with grace and stability.

Fundamentally, when human needs are fulfilled dissimilarly or denied fulfillment due to limitations of societal structures, then how will that affect individuals' social behavior? If a population understands what its needs are and how they may be optimally fulfilled given what is known at the present time, then people can begin to resolve conflict and unify their solutions toward the mutual fulfillment of all of their needs. Needs exist along a continuum; they are not compartmentalized. All of humanity is part of a continuum of the same existence, for life is a continuum of existence (because it is life).

When someone's needs are met, then that individual is much more likely to develop into a fully functioning human being capable of expressing their highest potential, than if their needs were to go unfulfilled. No one goes through life happy while simultaneously going through life unfulfilled. A stress inducing void is generated when there exists insufficiency in the fulfillment of critical needs. Therein, stress can be a motivational and hormetic adaptor, or it can become an overwhelming disintegrator of motivation, personality, and social cohesion.

*"It's simply a matter of historical fact that the dominant intellectual culture of any particular society reflects the interests of the dominant group in that society. In a slave owning society the beliefs about human beings and human rights and so on will reflect the [pseudo-satisfied]*

*needs of the slave owners. In the society which is based on the power of certain people to control and profit from the lives and work of millions of others, the dominant intellectual culture will reflect the [pseudo-satisfied] needs of the dominant group. So, if you look across the board, the ideas that pervade psychology, sociology, history, political economy and political science fundamentally reflect certain elite interests. And, the academics who question that too much tend to get shunted to the side or to be seen as sort of radicals."*

- Dr. Gabor Mate

## 7.12 'Human need' inhibition, thwarting, and deprivation

**NOTE:** *Natural law brings the consequences of a life of dis-connection from a necessary frequency of fulfillment.*

Understanding the different processes that follow from acute and chronic effects of need inhibition (need thwarting) is important for further understanding need dynamics, as it allows another way of considering how needs and motives can become decoupled.

The absence of the significant [need] satisfiers is likely to cause harm, characterized by degrees of suffering off of the alignment of feeling fulfillment, feeling well. Harm and suffering are "to be" avoided; they are an intrinsic drive of motivation - to be out of suffering (the feeling of being in pain).

**QUESTION:** *How do we come to know our needs? We, individually, pay attention to our experience over time, integrating our senses and responses.*

Under chronic deprivation, a person's motive to get a particular type of experience may become extinguished because efforts to satisfy that need have traditionally amounted to wasted effort. However, though the motive is extinguished, the requirement is not and will still produce dissatisfaction. Thus, a person may develop a motive that maintains an aim to satisfy the basic missing requirement but, because the person does not perceive readily feasible routes, they pursue compensatory, indirect routes that often fail to satisfy the underlying need.

When conditions exist or events take place that limit our ability to meet our needs and affect our bodily or psychological structure, to some degree, some individuals experience a trauma. As a result, in order to cope, we then may develop defense mechanisms to block out awareness of or desperately attempt to meet those unmet needs, often in a misguided fashion. This process involving unmet needs, trauma and defense mechanisms is a central one that lies behind many of the most destructive aspects of a culture that doesn't account for needs.

When a need isn't sufficiently fulfilled, either in

composition or frequency, then there are body [stress] effects. When there isn't enough water to meet needs, then there is the experience of human stress (sometimes called "water stress"). However, there is complexity to the effect. For instance, a human can practice breath holding or reduced breathing and the body adapts by becoming more flexible and resilient (via eustress, hormesis). Conversely, the long-term stress of poor nutritional eating leads to the body experiencing a state of chronic dis-ease (a.k.a., chronic stress, distress). A need scarcity-fulfillment index (e.g., water scarcity index) is a measurement of the ability to meet all resource or condition (e.g., water) requirements for basic human needs.

Fundamentally, stress comes from social (and physical) pressures. Stress can be unnecessary, hormetic & adaptive, chronic, etc. A society that accounts for the presence of social and physical pressure will likely also reduce stress on the individual over all domains of measure.

**NOTE:** *Some societies acknowledge, account for, and fulfill human needs, and others do not. Sometimes human needs are confused with other conceptions, such as money or belief, and sometimes not. It is possible to not know what is missing.*

Vital signs of life naturally deteriorate when deprived of natural environmental form and stimulus. Insufficient breathable air leads quickly to incapacitation by the degree of deprivation, but deprivation of open space or light take far longer to show the loss of ability to function through range. Generally, it is not possible to be deprived of need fulfillment without losing life capacity towards disease and death. Deprivation of any of these universal life necessities (needs/services), and to the extent of this deprivation across the need categories, generates human suffering and social injustice demonstrably follow.

Human life is harmed, damaged, or reduced in life-potential when:

1. There is a failure of life-requirement fulfillment - the range of expressible activity is reduced because certain essential life-requirements have not been met. A failure of life-requirement satisfaction constricts the actual content of life-activity to a subset of its potential.
  - A. A life abundant in capacity expression is better than a life impoverished in this dimension.
2. There is the presence of social coercion - lives may be abundant in expressed capacities, but those capacities are expressed through coercion (e.g., coercive routines those imposed by the demands of the money-value system); versus the intrinsic realization of life-capacities.
  - A. A life abundant in capacity expression is better than a life impoverished in this dimension. The

free realization of life-capacities presupposes, in addition to the satisfaction of the first two sets of life-requirements, the experience of time as free.

Insufficient fulfillment produces harm. For instance, an insufficient amount of nutriments results in a failure to thrive (organically, socially, etc.). Some inadequately met needs will lead to death (e.g., lack of the correct atmospheric gas composition). Other inadequately met needs may not lead to premature death, but are likely to cause suffering and lead to the failure to achieve one's potential. Depending upon environmental factors, human senses and capacities may or may not develop, and, may or may not develop fully. Harm lies in the impoverishment of human sensibility and capability caused by a misaligned relationship with nature and other humans. Further harm lies in the emotional internalization of the impoverishment through the experience of suffering.

**NOTE:** Among community, whenever any condition, relationship (etc.) harms or hampers the prolonged, secure, universal fulfillment of needs, then dis-value ensues. To dis-value some condition involves a critical study of the condition and its relationship to human harm. Once complete, the newly understood information is integrated into the pre-existing value system, which becomes re-structured, re-orienting society more greatly toward fulfillment, and away from the information set now known/understood to cause harm. The category-level label given to this information set is, 'value'. Some values orient more greatly toward fulfillment, and others orient less greatly toward fulfillment, which means they orient more greatly toward harm [to fulfillment].

Humans, like all living organisms, have a life-capacity potential that is diminished when life-requirements are not sufficiently or appropriately fulfilled. Accompanying the diminishment of life capacity is the emotional aspect of insufficient embodied fulfillment, the experience of suffering. Deprivation of life requirements (inappropriate frequency and/or composition) will inhibit life capacity and generate suffering. Human lifeforms can be harmed and limited in potential by too lengthy a dis-connection from, or too malformed a composition of, a required input.

Humans are liable to shared forms of harm, because they have shared life-requirements. When value determinations become misaligned from this underlying, common life-ground, actions tend to generate more or less-destructive effects, on individuals, social fields of life-development, and natural fields of life-support.

If human social self-consciousness is to be able to produce meaningful constructions, then consciousness requires access to definite social relationships and organizations (or institutions), without which the highest level human-conscious capacities are less

likely, unnecessarily so, to develop. Possibly, these organizations (optimal organizations are as necessary to humans (as social beings) as oxygen and water are to humans as organisms (as organic beings). Where certain groups of people are denied access to these organizing systems of society (e.g., in the market), they are harmed in their humanity, just as those who are deprived of organic life-requirements are harmed in their organism.

In society, harm can not only come to humans, but it can come to the systems that support and sustain human fulfillment also. Humanity's common life interest is understood to begin with the universal life support systems that all human life (i.e., the life-ground), life conditions and fellow life depend on, the ultimate bottom line of terrestrial existence. When a societal system (decisioning, in particular) harms the common life support systems that enable the survival and thriving of all, then some degree of suffering and disaster is likely to follow.

**NOTE:** When humans go for a long time without having all of their needs fulfilled, then it is likely to become difficult for them to begin to personally allow for their needs to be met (now that the environment is different). For example, a person who doesn't get enough sleep may insist that they can do without. A person who has grown up without deep connection to others may insist that they prefer to live in relative isolation. Additionally, individuals who have deeply rutted routines will resist change when it is offered to them, making change all the more unlikely. Possibly, humans have a naturally protective process that occurs when a need goes unfulfilled. Therein, they develop beliefs that justify the ignoring of suffering, or if not suffering, then a lowered potential of capability in the world. They are in denial. There are a common set of human needs, for every single person on the planet needs such experiences as food, water, shelter, and sleep on a regular basis.

Because humans are social animals, they are capable of experiencing not only physical harm to their organic body, but also psycho-social harm from the social aspect of the environment. Without access to socially needed inputs, people are harmed in their humanity, just as those who are deprived of organic life requirements are harmed in their physical organism. Fundamentally, failure to fulfill social life-requirements undermines humans' capacities to be of help to one another, as well as oneself. In other words, failure to satisfy human social life-requirements undermines humans' capacities to work in both instrumentally and intrinsically valuable ways. It inhibits individual's ability:

1. To care about, to relate to, and to interact with other people as unique bearers of life-value.
2. To think openly, analytically, and critically; to imagine and plan for new possibilities of action and social organization.

3. To perceive and appreciate the beauty of the natural world and creative expressions.
4. To work together to ensure that society satisfactorily and continuously sustains the life-requirements of everyone.

**NOTE:** *The lack of awareness of loss brought about by a loss of connection with fulfillment may not always be realized [even though suffering is being expressed through consciousness]. For example, a human brain deprived of oxygen for several relative minutes will suffer damage to its cognitive capacities. These capacities may be damaged or limited to such an extent that the person in question may not realize or be able to articulate the full range of what s/he has lost. The loss, however, can be measured objectively.*

Fundamentally, people living in a state of disconnection and suffering create and sustain societal constructions that limit potential and inhibit self-development, rather than build fulfilling and restorative living systems. Life-deprecating services (and goods) include, for example, the production (and sale) of addictive and life-disabling ("junk" and "entertainment") drinks and foods, and further, the injection of toxins and carcinogens into consumables that afflict countless people with disease and a lowered life-potential. Some of the elements of these products are unresearched or undisclosed.

**NOTE:** *Outside of community, the fulfillment of any need can be hijacked and used as a mechanism of social control.*

Like the physical-organic requirements of biological life, the social requirements of human life are defined by the objectivity of the harms that ensue for those who are systematically deprived of them. The specific forms of harm caused by deprivation of the different social (socio-cultural) life-requirements find their common basis in the instrumentalization that anyone systematically deprived of them suffers.

### 7.12.1 Human needs and harm avoidance

Reasons for needing are essentially common, and involve a shared understanding of what sorts of systems (and decisions) actually do avoid harm.

The universality of need rests upon the experience that if needs are not satisfied then serious harm of some objective kind will result. Serious harm is the significantly impaired pursuit of goals which are deemed to be of value by individuals. Serious harm is 'fundamental disablement in the pursuit of one's vision of the good, whatever that vision is'. It is not the same as subjective feelings like anxiety or unhappiness.

It follows that a current population has obligations to protect future generations against serious harm, if such harms can be reasonably predicted.

If future generations are to exist, humanity has a requirement to ensure that the global life support system is not so damaged such that it threatens the basic needs or universal satisfier characteristics of future humans.

The idea of universal human needs provides two supporting arguments:

1. Humans have requirements ("obligations") to meet the needs of their children and grandchildren within the overlapping generational nature of society.
2. An individual's well-being will be severely compromised if s/he lives in a world where their other individuals (of the global population) suffer profound (or even just ameliorable) harm.

#### 7.12.1.1 Harm as stemming from some degree of impaired social participation

Another way of describing such harm is in terms of impaired social participation. Whatever our private and public goals, they must always be achieved on the basis of successful social interaction, past, present or future, with others. This definition explicitly acknowledges the social character of human action. Whatever the time, place and cultural group we grow up and live in, we act in it to some extent. Following Braybrooke (1987) we relate needs to what is necessary for social functioning. It follows that participation in some form of life without serious arbitrary limitations is a most basic human interest. Basic needs are then the universalizable preconditions for non-impaired participation in any mutually accessible form of life.

#### 7.12.2 Competition preference function and irrational behavior

The combination of irrational [behaving] humans with a [societal] protocol preference function orienting individuals, or groups of individuals, toward competition (e.g., the market-State) is a combination of unknown human decisioning (irrationality) and unknown preferences (the market solution). Observing the behavior of combining unknown human decisioning and unknown human preferences, then explaining the behavior in terms of many different combinations of non-rational decisioning, plus preferences is common in early 21st century society; and, is likely to miss, the real-world presence of fundamental needs not being met, the real life-grounded structure). There is a "fact of the matter" (i.e., there are facts) in real-world decisioning. Irrational [behaving] humans and a societal protocol based with a preference function as axiomatic is unlikely to use facts at the organizational level to sustain global [access] fulfillment (instead, it may use facts at the technical engineering level).

## 7.13 'Human need' and social justice

**NOTE:** Fairness is not the same as sameness. In other words, fairness in coordinating opportunities for socio-economic access is not the same as either an authority treating subjects equally or all individuals having the same interests and aspirations in life.

Inherently, the concept of human needs raises questions of human equity and justice. A societal system that encodes the value of justice [in part] as equity of fulfillment [by common heritage resources and contributed services] requires the following essential equity-based principles applied to absolute human needs:

1. No person's non-substitutable need may be sacrificed to the desires or lesser needs of any group of other people.
2. All humans have [sufficiently] equal access to all needed satisfiers.

A goal of fulfilling everyone's life needs is to enable everyone to fully develop, fully express, and fully enjoy their lives and capacities, together; thus, reducing the worst possible misery to its least possible occurrence. Take note, however, that this goal presupposes that the projects people engage in during their lives are consistent with the health of the natural field of life-support and other people's projects through common decisioning.

At the social level, the idea of self-significance becomes an important conceptual encoding:

1. Selfish: I only value my own needs.
2. Selfless: I only value others' needs.
3. Self-full: I value my own needs with others' needs (equally at the socially coordinated level).

## 7.14 'Human need' integrated into a materially significant social system

**NOTE:** When needs go unidentified, they are easy to neglect.

If all individual humans have a set of common needs (some of which are material), then needs become relevant at the socially significant level, and thus, must be accounted for at the societal level. At the societal level, the idea of 'human need' has material-social significance:

1. In science (human combined body of knowledge), a 'need' primarily represents a desire to know and understand more, to inquire into a material environment.
2. In engineering (human combined body of

processes), a 'need' primarily represents a requirement to resolve a socio-technical problem.

In a unified [societal] information system, the term 'need' is recognized as having applications at multiple levels of scale:

1. In the context of humanity, the term '**need**' is synonymous with: human need, life-need, life requirement (life-requirement), and human requirement, human interest.
2. In the context of humanity, the **environmental objects** (with geometric shape) that complete the need are called 'resources'. 'Resources' (a.k.a., need satisfiers) are that which exist and have the potential of completing the need/requirement. Synonymously, the idea of 'life-requirement satisfiers' (a.k.a., need satisfiers) is that there exist objects and conditions of relationship between objects that [f]actually satisfy the requirements of a given life.
3. In the context of humanity, the concept **completing a requirement as expected** is synonymous with: met requirements, fulfilled requirements, and satisfied requirements.
4. In the context of humanity, the concept **not completing a requirement as expected** is synonymous with: unmet requirements, unfulfilled requirements, and deprived requirements.

For a system to orient strategically, it must identify that it has a spectrum of needs [through to requirements] for expressing two capabilities:

1. Living in the present (sustainability), and
2. Planning for the future (attainability).

Contribution through participation on an InterSystem Team represents a higher level of socio-technical participation, where individuals are able to contextualise their own form of life, to criticise, and most importantly, to do something to transform it.

**NOTE:** Individuals [in society] have a need to understand the societal system in which they live; because, every society is designed, and before 'design', there is 'need' (Read: the need for a designed solution).

## 7.15 In service of 'human needs'

A.k.a., In service for humanity.

Because individual's needs necessitate an outside input for fulfillment, each individual needs the "means" to do be fulfilled. Together, humanity can organize a common "means", a unified societal information system with a materialized habitat service system, and in so doing, free

everyone for the experience of their higher potentials.

**INSIGHT:** *The way forward is having, sharing, and using knowledge about what is required to survive and thrive on the planet.*

The fulfillment of need through service involves (the 'service' syntax):

1. *Identification* of that service without which the life capacity of anyone is reduced.
2. *Determination* of the degree of the service's necessity and extent of its deprivation.
3. *Operation* of the service system when the means are available to provide it.

Fulfillment services (or goods):

1. Have ["intrinsic"] value so far as they are objectively felt by human beings.
2. Have ["instrumental" or "ultimate"] value so far as without them human life is reduced or destroyed by degree.

At a societal level, the fulfillment service spread identifies systematic, structural:

1. Injustice to the measured degree service fulfillment is deprived.
2. Justice to the measured degree service fulfillment is protected and provisioned through time.

The basic syntax of [habitat need fulfillment] service is:

1. The structuring of access (or activity or production),
2. for all individuals (in the population),
3. to life services (resources and goods),
4. whose generic criterion is: that without which human life capacity is always reduced.

### 7.15.1 Needed habitat services

**NOTE:** *In the fulfillment continuum of human needs, services are the satisfiers.*

It is upon the foundation of need that the habitat service sub-system categories are based (as where and when universal human fulfillment emerges). Every discipline/system that may be regarded as of common interest (i.e., commonly valuable) follows into an economic prioritization matrix for fulfilling all human demand, which includes firstly, human need. Of greatest priority are those sub-systems of the life support system, including architecture, medical, water, and energy. The technical system includes communications and transportation; and the facility system includes: art, sport, and scientific exploration.

*The encoding of these concepts into a society's information system opens a calculation space*

*where further crucial issues may be addressed; specifically, surrounding initiation and maintenance of cities (our integrated service systems), implicit and explicit motivational processes, human personality development, and optimal well-being.*

A population can fulfill [common] human needs through a [common] service system that cycles [common] human resources. That service system could be coordinated into continuous operation by teams working through the design and implementation of the societal system specification. From this cooperation come integrated service systems, of which the habitat service systems (i.e., cities) are one type of integrated system.

There are services and material products required for the flourishing fulfillment of all human. These services and material products can be designed, integrated, and used as either a service itself, or as an object of a service. The collection of things [to be] generated from work (including physical and organizational structures) are defined in a 'specification' as [habitat service] requirements.

### 7.16 'Human need' services

**INSIGHT:** *There are times when wants do not contradict desires, and those are needs. It is when that we see that all need it is service it is that we see more clearly.*

In order for a need to be completed, a service must have existed. Every service is an interaction between the provider and the recipient effectuated through four media:

1. The environment (the given information).
2. The organizational framework (the structure).
3. The needs (the requirements).
4. The method (the approach/strategy).

The classification of human needs, despite any deficiencies and incompleteness, establishes a falsifiable (capable of being proven wrong) model for classifying human [fulfillment] services.

Six key elements common to all human [need] services:

1. The provider of the service ("Employer").
  - A. Unified societal system.
  - B. Habitat service system.
  - C. InterSystem team.
2. The recipient of the service ("Customer").
  - A. The community of users.
  - B. The InterSystem team.
3. The environment of the service ("Externalities").
  - A. The solar-planetary ecosystem.
4. The organization of the service ("Market").

- A. The habitat service system.
- 5. The need for the service ("Human").
  - A. The human requirement.
- 6. The method ("Business-State").
  - A. The unified and open system.

**NOTE:** Omit the word "basic", stating that all human services share a common feature: they are all designed to meet human needs

Defining "human services" as responses to human needs rather than responses to needs indicates that the "human" attribute of "human needs" is significant. These are the necessary conditions required to allow "decent" bodily-human existence, or "decent" socially-human existence.

Human services to provide a support structure for humans to flourish toward their highest potential(s). Therein, human services are also those services designed or available to help people who are having difficulty with life and its stress.

The optimized, efficient fulfillment of need requires co-operation - systems of mutual assistance and transfer; global coordination, co-operation and complementation; shared resources and access.

## 7.17 'Human need' structural sub-conception

From the perspective of human-embodied consciousness, 'need' is sub-composed of the states of:

1. An internal being (inner being, feeling an aliveness):
  - A. An inner [consciously] motivating feeling-state (a.k.a., inner states). Feeling [shape] needs exist due to the consciousness that is embodied in a material [density].
    1. For example, the physiological needs of safety, belongingness, love, esteem, contribution, and self-actualization.
2. A material environment (outer being, doing an activity):
  - A. A set of relational belonging needs (a.k.a., material relationships) to which embodiments become actively related (a.k.a., conditional needs). Material [shape] needs exist due to the physics of the [material] reality in which the consciousness is embodied.
    1. For example, the human requirement for hydration periodically given the human individual.
3. A conceptual environment (conceiving, having a method):
  - A. A set of instrumental [control] needs (a.k.a., constitutive needs or 'values'), which exist due to an ability or method. Conceiving [shape] needs

- exist due to the information-based nature (structure) of conscious awareness (and thus, society as a whole).
  1. For example, the human requirement to optimize the technical hydration system given the technology resources state available now.

## 7.18 The fundamental 'human need' for measurement

In order to orient (in society, toward the fulfillment of needs) there must exist the ability for measurement (measurability) of an environment:

### Formatting of list:

1. The pure category (idea, object, interface).
  - A. The market overlay upon the pure idea/category.

### The human need measurement list:

1. Service (goods) - what is engineered; systematically contributed life services.
  - A. In the market, a service is any priced commodity which may be bad for ecological and human life, or any authority-determined output.
2. Necessity (need, requirement) - what is needed by the lives of human individuals.
  - A. In the market, the necessity is the demand of what those with money want to buy from private corporations (the State included).
3. Resources (supply) - the commons and ecosystem services.
  - A. In the market, a resource (supply) is any priced commodities, or anything for profit.
4. Productivity - optimization of life fulfillment (life-goods, life-potential).
  - A. In the market, productivity is measured by ever more manufacture, transport and/or sale of profitable commodities at lower financial (monetary) costs.

## 7.19 The testability of a 'human need'

There are, at least, four testable and systematic generalizations of need:

1. Needs are objective, because they exist (are true), independent of anyone's subjective perception of them. Existence is testable by embodied sensation.
2. Needs have unlimited validity, because there is no exception to them, which is testable by searching for one.
3. Needs are universalizable, because a system derives its existence from them.
4. Needs are the priority over other types of system

processes.

## 7.20 The standard linguistic expression of a 'human need'

A [human] 'need' is that without [human] 'life' capacity is reduced (in its efficiency to flourish), and it is only provided [for in 'fulfillment' > 'service'] by [human] 'life' capital (Read: information to material expression).

### 7.20.1 The relational need formula

A need [as a relationship's presence] may be expressed with the following conceptual formula:

- A need (S), if S is a necessary condition for A to achieve N, and N is either directly an approved priority or is a necessary condition for achievement of the accepted approved priority P.

What is a need?

- A drive or some inner state that initiates a drive.... Here "need" refers to a motivational force instigated by a state of disequilibrium or tension set up in an organism because of a particular lack. Individual organisms have needs, and species have common needs.

All needs are relational, in that they relate a system and its capabilities (capacities and functions) to the system's environment in which those capabilities are expressed. Relational statements generally conform to the structure:

1. Person (P) needs (N) in order to express (E, achieve).
2. Where, P refers to a living organism, E the function that is to be generated, and N is the resource that is required.

This meaning can also be expressed as a conditional: if E is to be functional, then N is required by P. Hence, any reference to a sub-category of needs as "relational needs" does not make sense, because all needs are relational.

All needs are also conditional, in that they relate the expressed and expressible capacities of a system to a set of conditions which must exist. A conditional statement is based upon the logic that for capability/event 'A' to occur, conditions 1,2,...,n must exist (or, P needs N, in order to E). A need always requires at least the occurrence of one external condition. Hence, any reference to a sub-category of needs as "conditional needs" does not make sense, because all needs have one or more conditions that must be met.

### 7.20.2 The 'human-life need' criterion (n-criterion)

The N-criterion denotes all life needs. Thought experiments (i.e., hypotheticals), as well as scientific findings, demonstrate that there is no vital [human-life] need that does not satisfy the N-criterion, and also, that a claimed need that does not satisfy this criterion is not a [human] life need.

To be a need, a criterion must be met - the need criterion (n-criterion, principled criteria for being a need) is:

- N is a need, if and only if (and to the extent that), deprivation of N (or N's input) always results in a reduction of life capacity (expressible as capability).

There is no life capacity that is not also measurable by this [N-criterion] principle; for example, the need for drinking water measured by the calibrated life capacity loss without it through time.

**NOTE:** *There is no life capacity (life function to survive and thrive) that is not also measurable by this principle - for example, the need for drinking water measured by the calibrated life capacity loss without it through time, or the need for the external storage of information, calibrated by life capacity lost over time.*

The syntax of [life] need (N) is:

1. N is a need,
2. if and only if,
3. deprivation of N always results in a reduction in a [desired] measurable capacity or condition variable.

### 7.20.3 'Human need' criterion selection

What is required at the baseline of understanding and prescription is an incontestable and sufficient criterion of [human] life necessity, coherent with others' same necessities. Such a criterion must solve for three problems (Note: these problems are unsolvable in the market-State, but are solvable):

1. How to distinguish needs (system required inputs) from mere wants and habits (optional system inputs)?
2. How to provide a criterion that is consistent with, and works for, all needs?
3. How to provide a criterion that applies across diverse ways of life and individual differences? The criterion must be capable of providing feedback through iterative testing and studied observation of change in the environment.

In order to error check the final set of human needs,

the questions of whether the need set is "too broad?" or "too narrow?" must be asked:

1. Is anything claimed that is not a demonstrable universal need/good by the N-criterion?
2. Or is anything missing from the set or any part of it?

#### 7.20.4 'Human need' criteria

What conditions define any given 'need' in particular. In order to distinguish between life-requirements and consumer demands we must ask: if anyone were deprived of the given resource, relationship, practice, or institutional structure, would they suffer harm to any of their human capacities to experience the world through the senses, to feel the range of human emotions, to think and imagine, or act and create in life- valuable ways?

If deprivation causes objective harm in the form of loss of life or vital capacity, such as would ensue if one were deprived of all shelter in a cold climate, then the object, relationship, practice or institutional structure in question is a requirement of organic-social human life. If only subjective feelings of relative deprivation ensue, as in the case of Marx's man jealous of his neighbour's house, then no life-requirement is involved, but only a preference, want, or consumer demand with no or negative life-value.

Since human beings have only a finite life-span, they are harmed to the extent that their life-time is structured as a closed routine rather than an open matrix of possibilities for life- valuable activity.

Universal human needs have (at least) six theoretical features that resolve identifying sustainable well-being:

1. **Human needs are objective** - statements about wants are subjective, whereas statements of need are extensional (i.e., their truth depends on 'the way the world is' and not 'the workings of my mind').
2. **Human needs are plural** - needs cannot be added up and summarized in a single unit of account.
3. **Needs are non-substitutable** - one domain of need satisfaction or objective well-being cannot be traded off against another. More education is of no immediate help to someone who is ill through lack of vitamin C. Thus certain packages of need satisfiers are necessary for the avoidance of harm. This is quite different from consumer preferences in economic theory, where substitutability is the default assumption: given a bundle of two goods it is always possible – by reducing the amount of one fractionally and increasing the amount of the other fractionally – to define a second bundle between which a consumer is 'indifferent' ).
4. **Needs are satiable** - It can be shown that the amount of intermediate needs required to

achieve a given level of need diminishes as their quantity increases, eventually plateauing. Thus, the contribution of calories, dwelling space, even levels of childhood security, to basic needs can be satiated. In the case of the basic needs of health and autonomy, thresholds can be conceived where serious harm is avoided such that acceptable levels of social participation can take place.

5. **Needs are cross-generational** - The consequences of current behavior progressively impose dilemmas of intergenerational fulfillment of human need. The epistemology of reasoning about needs remains extensional, not intentional, and thus avoids the indeterminacy of reasoning about future preferences. Until the genetic make-up of Homo sapiens changes significantly, population successors will need specific amounts of the full range of basic and intermediate needs. As technology and understanding develops the specific biological (or otherwise) constituents of the fulfillment of a category of need may change (i.e., evolution or de-evolution), but that category of need, itself, is unlikely to change. There are a particular set of biological experiences that form necessary inputs for human thriving.

#### 7.21 Cultural [societal] differences in societal structure

While basic needs are universal, they are satisfied in countless different ways and through different strategies, which vary across environments, societies, cultures, and times. Whether humans have needs that must be fulfilled to survive and thrive is not a choice, just as whether the sun is at the center of the solar system is not a choice.

What is valuable as a need satisfier (i.e., life-requirement resource) is anything that satisfies (or fulfills) the requirement. The local environmental (cultural) differences between the contents of life-requirement satisfiers (of groups in different geographic locations) do not express fundamental differences of the common human life requirements across cultures.

In some cases satisfiers, as conditions and resources, do not vary, and in other cases they vary enormously. However, the needs served by a satisfier (i.e., fulfilled by a service) can be shared and stable; and thus, it is possible to distinguish levels of generality and stages in causal sequences.

Image for a moment someone claiming to have a preference for one specific type of food. Here, context is important. There is desire and motivation because there is a need. That need does not come from the psychology of the organism, although it can be influenced by the psychology of the organism; instead, it comes from an objective requirement of the body for material nutrition.

At any given time there may be a selection of options from which to choose to eat. In nature, flavour is the guide for conscious selection between different (but similar) options. And therein, there is an optimal choice for nutrition given the body's own nutrient requirements and circumstantial conditions, otherwise, there is no need to eat. This innate body understanding of what is optimal to eat at any given time, and when to stop eating, can become impaired by aberrant psycho-social and material conditions (e.g., foods that confuse the body's own ability to tell what it requires as material nutrition).

It is claimed that cultural and individual differences, and beliefs about freedom, make any universal principles of good (fulfillment) and bad (insufficient fulfillment) impossible, or undesirable, or both. For example, some choose to satisfy their need for food in the form of fish and beans, others by meat and potatoes, and still others by vegetables and fruits, with many further variations among these menus. Hence the false inference arises that even the need for food is not universalizable, because of these cultural and individual differences. More careful consideration resolves the problem, however, because it recognizes that the organic need is for a complement of nutritional food which can be spelled out across these different fares by the objective N-criterion and primary axiom of value. No one "decides for others" this or any other life necessity and good. It is a necessity of life recognized by a scientifically verifiable criterion of life-value understanding, and it admits of endless degrees and choices within its objective principle of determination. Whether recognized or not, the objective criterion of life value always remains a constant.

Nothing worthwhile in life that is excluded because all that people do or choose to do requires life capacities, and they in turn require the goods that meet needs to flourish, however free and unique they may be. Whatever the manifold variations and choices within the generic goods of these universal life needs, no life-coherent possibility is pre-empted.

## 7.22 When services become an 'end' in themselves

When a societal system makes goods and services an end in themselves, then the alleged satisfaction of a need by the societal system, actually impairs its capacity to create potential for the individual with the need. In other words, when goods or services becomes the end, then the real need [of the individual] goes unrecognised, which reduces the individual organisms ability to sense its real world fulfillment; its sensitivity to its real world need fulfillment becomes diminished. Life, then, is placed at the service of systems, rather than systems at the service of life fulfillment. The question of quality of life can become overshadowed at a societal level by artifactual, system constructs.

In some societal arrangements, the speed of production and the diversification of objects become ends in themselves, and as such, human needs become

forgotten in the design of goods and services, in the design of cities and habitats, and in the design of society in general.

In a fulfilling [critical] version of society, it is not sufficient to specify the predominant satisfiers and economic goods produced within that society. Service systems must be understood as iterative productions, which are the result of accumulated knowledge, and consequently, liable to change. Thus, it is necessary to retrace the process of reflection and creation that conditions the interaction between needs, satisfiers and economic goods.

## 7.23 'Human need' as priority functioning [service] satisfiers

Needs are satisfied by a relationship of appropriate shape. Therein, satisfiers are material services (and/or material objects) that allow the relationship to complete its functioning. Satisfiers vary enormously in contextual application, whereas the needs they serve can be shared and stable. It is possible to distinguish levels of generality and distinguish stages in causal sequences.

**TERMINOLOGY:** *Access is being able to attain a functional capability. The idea of "access" exists between functioning and capability.*

The habitat service system exists between guaranteeing attainments and strengthening capabilities (in other words, service exists between functioning and capability). The habitat operational processes exist between orders of priority; for example, incident response is given highest priority, above facility servicing.

In a service system, there is the satisfier as a category (e.g., food), then there is the quality of the food, which arrives via a service.

## 7.24 'Human need' satisfiers

**QUESTION:** *How can a social group identify needs and appropriate need satisfiers?*

Satisfier disambiguation:

1. Max-Neef - satisfiers are processes/strategies.
2. Material - satisfiers are resources or other people.

In order for a need to be completed, a satisfier must exist. Need satisfiers are the systems, services, processes, activities, tools, relationships and goods required to satisfy needs in any given social context. Determining need satisfiers entails a problem-solving process, rather than a preference aggregating one. Meeting human needs requires a socio-economic system that produces and distributes the necessary and appropriate need satisfiers – and ensures that all this does not threaten planetary limits.

It is essential to identify the distinction between

universal needs and specific satisfiers. For example, the needs for food and shelter apply to all peoples, but there are wide varieties of cuisines and forms of dwelling that can meet any given specification of nutrition and protection from the elements.

Max-Neef identified five types of satisfiers:

1. **Satisfiers** [f]actually satisfy.
  - A. **Synergistic satisfiers** fulfil several needs at once.
  - B. **Singular satisfiers** that fulfil one at once.
2. **False-satisfiers** do not [f]actually satisfy (only viewable over the long-term).
  - A. **Pseudo satisfiers** are a unique case that give only fleeting fulfilment (a temporary feeling of well-being that does not last, and may degrade actual fulfillment over time).
  - B. **Violator satisfiers** (violators of satisfaction) inputs that claim to be actually satisfying, but completely fail to satisfy, yet one may be habituated to them.
  - C. **Inhibiting satisfiers** satisfy one need (often a short-term one), but at the consequence of reducing satisfaction of other needs.

The requirements of human physical and mental health relate inherently to the three human need modes:

1. Basic human needs (e.g., food).
  - A. Need as a noun.
2. A lack of basic human needs (e.g., these people need food).
  - A. Need a verb about the needing of a noun.
3. A lack of habitat service system (e.g., these people need a food service).
  - A. Need as a looped verb about the needing of a process (or service).

The third mode refers to a particular method or satisfier (e.g., food service as part of a habitat service system) for fulfilling the more general need (food).

The two need modes are:

1. Need is a term used, in an evaluatively neutral description or explanation, to refer to a drive for potential completion or want. Need as a factor that motivates individuals toward survival and thriving.
2. Need is a requisite for achieving an objective. Need as a functional prerequisite. What is required in order to do or achieve something, which in application are generally called 'resources'.

Satisfiers are ways of meeting needs, some of which completely fulfill the actual need, and others do not:

1. **Single satisfiers:** meet one need with one

environmental input or condition.

- A. For example, breast milk fulfills the need for nutrition for a baby. Note that in common parlance, the term satisfier is often used to refer to a behavior. In this case, the baby has a need for nutrition (sustenance) and someone provides the baby access to breastmilk through the behavior of breastfeeding. Breastfeeding is the satisfying behavior (or service). Breastmilk is the resource accepted by the baby as an input for nutrition.
2. **Synergistic satisfiers:** are a case where environmental input or condition meets multiple needs simultaneously.
  - A. For instance, where a habitat service system is designed to fulfill needs simultaneously. Humans have a set of common needs, and a habitat service system can be established to synchronously fulfill those needs. The habitat service system's services are the satisfying (fulfilling) behavior.
3. **Violators:** claim to be a satisfying need, but in the real world, it makes it more difficult to satisfy a need.
  - A. For example, a dictator claims to be fulfilling the need for protection.
4. **Pseudo satisfiers:** claim to be satisfying a need, yet in fact have little to no effect on really meeting such a need.
  - A. For example, using a social network to satisfy a need to intimate human connection. Or, a piece of sugary synthetic cake being claimed to satisfy the need for nutrition. In the case of someone starving, such a piece of cake would be a single satisfier. However, when not under extreme conditions, such a piece of cake is not a fulfiller of nutrition (and is more akin to eating entertainment).

## 7.25 'Human need' thresholds

**QUESTION:** By what satisfactory degree are human needs being met?

The idea of a need carries with it the idea of sufficiency and insufficiency (as well as threshold) for the system with the need. Herein, sufficiency is definable by the margin gain, or loss, of life range with, or without provision.

Sufficiency is reached when no life need is missing from this set without which life capacities are reduced—a condition that flourishing human lives and societies both enjoy and provide for.

Living in stress is [on the psychology and biology of most individuals among a social organism] living in survival.

Meeting human needs requires a societal (socio-economic) system that produces and distributes the necessary and appropriate need satisfiers, while ensuring that all action does not threaten planetary [capacity] limits.

Just like humans have capacities (functions) that can be extended and limited, developed and damaged, the planetary system has life-carrying capacities that can be expanded and limited.

Although there can be cultural (localized) variety in meeting needs, the only morally relevant threshold for basic need (through to flourishing) satisfaction is the optimum level for every individual, given what is known.

In concern to human need, there are two fundamental types of need thresholds:

1. **Survival Needs** - The needs for socio-organic functioning are met. Survival threshold needs are those needs that are necessary to be met for a life-form to relax to the degree to which it can effectively focus on things of even greater depth and importance than survival.  
A. To what relative degree is there survival?
2. **Flourishing Needs** - The needs for developing and sustaining higher intentional capabilities are met. Flourishing threshold needs are those needs that are necessary to be met for a life-form to express its capabilities to the fullest intended extent possible.  
A. To what relative degree is there flourishing?

Need is a threshold concept or, put another way, basic needs and intermediate needs (universal satisfier characteristics) are (temporarily) satiable. But how are appropriate thresholds to be decided and measured? Possibly, critical optimum levels of health and autonomy can be operationalized in practice by reference to the best level of need-satisfaction attainable anywhere in the world at the present time, or a higher standard which is materially feasible at the present time.

At the level of universal satisfier characteristics, it is possible to identify a 'minimum optimorum' (minopt) threshold. It is possible that increasing inputs of universal satisfier characteristics, such as nutrition or child security, will yield increasing increments of health or autonomy, but with diminishing returns, and beyond certain point there is no further benefit. As a principle this could possibly define threshold levels of each universal satisfier characteristic.

Future people will have needs for affiliation, cognitive and emotional expression, understanding and critical thought. To achieve these they will need specific minima or minopt levels of water and nutrition, shelter, a non-threatening environment and work practices, significant primary relationships, security in childhood, physical and economic security, education and health care.

**NOTE:** All socio-economic (or socio-technical) systems can need to be assessed according to their ability to produce enough appropriate need satisfiers.

## 7.26 Basic human need (the category of)

A.k.a., Basic human needs (BHN); the basic [category of human] need.

The notion of basic human needs has been in the rhetoric of modern economics since its beginning, appearing in the conversations of those attending the Lake Placid conferences (1899-1909). Brown (1985:257) explained that a small cadre of participants at Lake Placid believed families have a moral obligation to attain and gain satisfaction from attaining basic human needs. At the 1902 meeting, Alice Chown explained, "home economics in its broad sense was a subject for developing...the meaning of the physical, social, moral, aesthetic [sic] and spiritual conditions of the home" (as cited in Brown, 1985:263).

All human life, everyone in the world, at all times present and future, have certain basic needs. These human-life needs must be met in order for a human to:

1. Avoid harm (resilience).
2. Participate in society (contribute and participate).
3. Reflect critically upon the conditions (learn and create).

Basic human needs are the universal preconditions for effective participation in any form of societal life. Whatever a person's goals, whatever the configuration of practices and values, certain prerequisites or basic needs are required, in order to achieve those goals. Therein, to participate is to formulate goals, understand how to completely solve for them, and act to achieve them in practice through action in time.

There is general agreement that basic needs (whether survival- or non-survival-oriented) are central to human motivation, because needs are forces that induce people to action (Burns et al., 1989). Resultant human behaviour from these actions creates the living conditions of humanity.

### 7.26.1 Conception enables (Read: conceptualization - the ability to conceive)

Conceiving of human need as something common enables the conceptions of measurement and evaluative comparison of human experience, human well-being and life capacity, across time and space.

#### 7.26.1.1 Human life functions

The life functions are key. Well known life support functions include, energy, sewer, etc. All life support functions include technology as part of a unified habitat

service system [supra-function]. The technology support service enables all other services, of which life support is the priority and the facility (leisure and secondary-opportunity fulfillment are secondary; "wish" fulfillment needs come after life-support needs). The life and technology support services are the [InterSystem] engineering life [service system] functions of any given society. Note that under market-based conditions, what could be a unified [in operation] InterSystem Team becomes divided into a structure market labor-service competition among individuals -- people are not working cooperatively for everyone's fulfillment, people are working [at socio-economic organization] toward sometimes competing ends (objectives).

### 7.26.2 The primary axiom of [life] value

The N-criterion is based on the axiom of life value, which states:

1. x is of value if and only if (and to the extent that), it constitutes or enables a more fulfilled range of life than without it:
  - A. within the fields of life as thought (conceptual and image),
  - B. felt side of being (sentience, emotion, mood), and/or
  - C. action (animate movement through space-time).
2. X is of dis-value if and only if (and to the extent that), it disables life so pre-defined.

### 7.27 Unhealthy pathological responses

While negative emotional responses (anger, fear, etc.) are a natural and healthy response to a lack of complete fulfillment, they can become pathological when it is more frequent, intense, or persistent than necessary. Pathological responses can be characterized by:

1. **Frequent false positives** - where a need is actually being met, but because of someone's filters they are responding as if it is not.
2. **Inappropriate intensity** - where the emotional response to the need not being completely met is inappropriately intense and likely to create further issues and/or prolong the issue.
3. **Prolonged duration** - when the response to the need not being met (or, the false positive) goes on for an extended period of time (e.g., going to bed angry, or carrying anger on day-after-day).

## 8 Human requirements

*A.k.a., Human-life requirements, human-life needs, human needs, human necessities.*

Humans have requirements for the fulfillment of their needs. Human requirements are built from human needs and human objectives (and, they are influenced by goals and intentions). Human requirements include physical (tangible) and non-physical (non-tangible) elements necessary for human subsistence, growth and development, as well as those things humans are innately driven to attain. Life-requirements are not simply demands for use-values that are lacked, they are actual observably shaped connection to the natural field of life-support and the social field of life development. Thus, life requirements are the essential direction to the fundamental, practical question of what a life-coherent system must produce (and account for in the production of new relationships).

Knowledge may be used to resolve the identification of what an individual needs. 'Needs' reference knowledge, as the entire range of predictable understandings (formerly codified, explicit model) and accumulated problem-solving (procedural, tacit model) about human requirements. Knowledge about human-embodied requirements can be visualized in a knowledge space (a model).

### 8.1 Requirement

**NOTE:** *A society not constructed around the requirements for that social organism is likely to suffer a lack of well-being.*

On the demand scale, from the mental to the materially constructed, a 'requirement' is a usable representation of a 'need'.

Therein, a requirement is any one of the following three definitions:

1. A condition or capability needed by a system to solve a problem or achieve an objective.
2. A condition or capability that must be met or possessed by a solution or solution component to satisfy a specification.
3. A specified representation of a condition or capability as in (1) or (2).

Hence, a requirement is:

1. A representation, not the thing itself.
2. A condition or capability of some relationship to orient (or re-orient) a system by conferring an ability, a characteristic, or an experience.

And, from an engineering perspective,

1. A requirement is a representation of some relationship that could deliver value to a system by solving a [design and construction] problem.
2. A requirement can represent constraints that a solution must conform to.

Requirements include, but are not limited to, past, present, and future conditions or capabilities of an organization, and descriptions of organizational structures, roles, processes, logic, rules, and information systems. At the societal level, a requirement may describe the current or future state of any aspect of the society.

**NOTE:** *Requirements and Designs are labels used to express the determination of value [or value orientation].*

## 8.2 The nature of life-requirements

**CLARIFICATION:** *Life-requirements (life requirements) refers to the requirements for live to survive and develop.*

A set of human life-requirements can be systematically derived and applied (via systems engineering) to the benefit of everyone in society. The real material world, as described and explained by [material] science, may not be all there is to reality, but it nevertheless has its own dynamics to which humans must align for their survival (surviving and thriving). In this material reality, human beings and their capacities of thought and action are a product of, and entirely dependent on, material reality (and not the other way around). This extant relationship does not exclude the possibility that human thought can shape or change the material world - provided, of course, that the thought in question is located in, and acted upon by, living human beings. Human beings are in a direct and causative relationship to the life-sustaining, life-enabling as well as life-damaging and life-destroying dynamics of nature.

All human life requires [a frequency and composition of environmental] inputs to survive and develop fully. There is a connection between life and life's requirements-resources. Through [life] sciences, significant knowledge has been accumulated into what fundamental organic life-requirements must be satisfied if human life-capacities are to develop more, rather than less, fully.

It is an observable fact that all living things, and not just human beings, must exert conscious effort to maintain connection to that which sustains and fulfills their lives. Therein, conscious humans realize, to varying degrees, that they are dependent upon certain substances (at a specific frequency) from their environment. A human consciously experiences a need for air and water, which cannot simply be conjured out of nothing (nothing) or satisfied in the realm of mere thought. The human organism requires (i.e., needs) not only the surrounding natural [environmental] world, but also other human

beings, and the work they do as part a society to survive and thrive. Humans are not only naturally dependent (i.e., dependent on nature), but also socially interdependent in a way that is intimately intertwined with this natural dependency. Even the most self-sufficient foragers rely on the accumulated knowledge of their habitat and edible plants that is developed and communicated to them by others, including techniques for hunting and gathering.

In early 21st century society, no individual human being can fulfill even the need of living for more than a day or two into the future without relying on a massive amount of work done by countless other people -- growing, harvesting, and transporting food and other basic necessities; maintaining power grids and sanitation systems, etc. Need fulfillment plays an essential role in sustaining social bonds (with relatives, friends, and colleagues) -- humans tend to be fulfilled together (commensality); thus, reflecting the social relationships of individuals.

**NOTE:** *It is unwise to develop a false and entitled sense of one's own self-sufficiency, and take all that sustains one for granted.*

Humans have relations of material dependence and interdependence, and that experience can give conscious rise to an awareness of mindfulness, gratefulness, and willingness to act to maintain and develop the conditions that sustain them, from social bonds of connection to the cultivation of natural environmental resources.

## 8.3 Individual satisfaction of life-requirements

The comprehensive satisfaction of life-requirements is limited by the normal operation of global market-State forces -- zero-sum competition and a lack of transparency inhibit the universal and sufficient fulfillment of human life requirements. Alternatively, cooperation (or limited, non-zero sum competition) with a transparently shared and informed societal model is likely to sustain and optimize the fulfillment of human life requirements.

Societal failures to fulfill humankind's sociological life requirements undermine everyone's capacities:

1. To work in both instrumentally and intrinsically valuable ways;
2. To care about, relate to, and interact with other people as unique bearers of life-value;
3. To think analytically and critically and imagine and plan for new possibilities of action and social organization;
4. To perceive and appreciate the beauty of the natural world and social creations;
5. To work together to ensure that community continues to fulfill life requirements, and life itself,

evolves.

**NOTE:** *In community, as we develop in age, independence and capacity, we acquire the capability to access ("carve out") a life space for ourselves.*

### 8.3.1 Habitat exploration human research subsystem

The Human Research Project (HRP) shall:

1. The Human Research Project (HRP) shall quantify the human health and performance risk associated with habitat operations or exploration projects.
    - A. This HRP requirement is to quantifiably describe the likelihood and consequences of the risks. The uncertainties associated with these quantities should be narrowed to the target values identified by each standard or to the greatest extent practical to facilitate proper decisions for operation and exploration, including human procedures, hardware and software design, and project design.
    - B. The Human Research Project shall develop countermeasures and technologies to monitor and treat adverse outcomes of human health and performance risks.
  2. The Human Research Project Science Coordination System shall develop ways to improve estimates of the integrated human health and performance risk associated with human habitation and exploration projects. Generally, each risk is written with respect to an adverse outcome.
    - A. The intent of the HRP is to prevent the adverse outcome from occurring. If that cannot be done, the intent is to develop and validate novel countermeasures (devices, drugs, procedures, etc.) that will mitigate the adverse outcome. In this context, "mitigate" means "reduce the severity or reduce the probability of the adverse outcome."
  3. The Human Research Project Science Coordination System shall ensure that their processes and products comply with the standards directives and procedural requirements listed in applicable standards document.
  4. The Human Research Project Science Coordination System shall provide the enabling capability to facilitate human habitation with respect to the human system.
  5. The Human Research Project Science Coordination System shall ensure preservation and maintenance of core technical capability and expertise in human research, technology development, and operations coordination.
- A. The core competencies are those that are necessary to maintain and nurture an understanding of the existing evidence base regarding human habitation. This core competency involves sustaining and maintaining a dedicated scientific discovery and exploration InterSystem team, and robust scientific participation. It also requires adequate testing capability.
  - B. Preservation and maintenance of this capability is necessary to provide stability over the multi-decadal implementation of the vision for human habitation and exploration. This core competency is necessary to facilitate the following: Strategic planning. Identification and prioritization of the risks to the human system and development of long-range plans to quantify, prevent, mitigate, and treat the adverse outcomes requires competency of all inter-connected societal systems; to ensure proper direction to the research discovery-group for focusing their effort.
  - C. Acquisition development, planning, and execution. Acquisition of research and technology development is an inherently socio-technical function that requires core expertise within the with respect to research and technology development for the human system.
  - D. Operations support for planning real-time and real-time operational decisions involving the human system and environment. Laboratory facilities and the expertise to run them and interpret results are necessary to support an ongoing evaluation of the human system response to the space environment and to support the medical operations function during a mission. This involves the internal community, and to some extent, the external community where uniquely specialized expertise must be sought. The requirement is written at the HRP level and not specifically allocated to the Program Elements. However, the Program Elements shall provide inputs regarding their core competency needs and issues. As part of the annual Planning, Programming, Budgeting, and Execution (PPBE) process, Program Management will review the core technical capability of the Program Elements and adjust where appropriate.
  6. The Human Research Project Science Coordination System shall develop methods and technologies to reduce human system resource requirements (mass, volume, power, data, etc.).
    - A. The rationale: Methods and technologies

that reduce the human systems resource requirements for mass, volume, power, data, etc. must be developed to reduce the overall resource requirements. For example, producing countermeasures and technologies that fit within an extremely limited resource envelopes anticipated for a service project or exploration mission.

#### **8.4 Human environmental design requirements**

The environmental designers task is to bring the designed environment into equilibrium with the human biological and non-biological systems. Therein, architectural form, structure and space are no longer considered ends in themselves, but become means to establish this equilibrium. Formally stated, the problem of environmental design is the accommodation of the biological and non-biological requirements of the human organism through the appropriate organization of relevant variables in the designed environment. The decisioning structure in an environmental design problem involves the description of a system of human requirements. (Studer, 1966)

## **9 Need and wants**

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*A.k.a., Demands (need), and lesser demands (preference).*

The difference between a need and a want (or preference) is stability. Preferences are flexible ("plastic"), such that what someone thinks they might like in the future may turn out to not be what is liked; the individual may change their preferences (as a result of experience). Needs are originators of action; they engage, motivate and mobilize [people]. Wants overlay a naturally originating structure of action. Preferences are acquired over time and through experience; needs are due to the embodiment of consciousness in a physical, impermanent form. Need fulfillment sustains the optimal experience of a physically embodied consciousness. A lack of need fulfillment is likely to cause a void of fulfillment (experienced as suffering). Wants motivate people but are not normatively linked to human functioning as basic needs are. Fundamentally, there is a difference between a 'want' and knowledge of what is needed in order to survive and to thrive.

Needs don't change over time, but the way in which they are satisfied does. Needs are persistent, wants are shaped by culture and the development of social standards and technologies. People may be culturally conditioned (programmed and manipulated) to have certain thoughts in their heads concerning wants, which can supersede the fulfillment of needs. Yet, when individuals are not trapped in their conditioning, they can look at all situations as an opportunity to explore their desires, needs, wants and preferences.

The problem for any given society is distinguishing life requirements from the extraordinary range of demands people could possibly place on their natural and social environments. The first step in solving this problem is recognizing that there is a connection between life, the environment, and life's requirements therein; that relationship is most commonly called a 'need'.

In a community-type society, certainly, human life-requirements are distinguished from market-consumer demands, which sometimes are, but sometimes are not, tied to actual, objective life-requirements. The ubiquitous usage of the term, "basic needs", invoked by most market and State organizations is essentially vacuous. Humanity has been a long time without its most basic life-value bearings.

The concept of human need, and thus demand, must be open to continual improvements in knowledge and understanding; for example, advances in the biomedical understanding of health and disease. Demands can be artificially manufactured ("socially engineered") by profit seeking entities that implant desires and narratives that lead to views and purchases (i.e., the implanting of desires and narratives):

1. Purchase[d] political influence - lobbying and marketing.

## 2. Purchase[d] consumer influence - advertising and marketing (propaganda).

The test is, always, whether life-capacities (Read: common habitat services and individual opportunities therein) are more restricted or reduced in range without the life necessity service/good, than with it. The question can be resolved to an answer through empirical evidence (science), which will can confirm or dis-confirm. Every action that a person could choose to do could be said to be categorized by (or "require") life capacity, and the capacity, in turn, requires some set of services/goods that meet needs (inputs/requirements) to exist, and further, remain in an optimal state.

Behavior can be highly affected by environmental variables. Researchers (Geier, 2006) put a bowl of candy M&Ms on the concierge desk of an apartment building, with a scoop attached a sign below that said, "eat your fill". On alternating days, the experimenters changed the size of the scoop; from a table spoon to a quarter cup scoop, which was 4x as big. If people were only eating what they wanted, the scoop size shouldn't have mattered, but it turned out to be significant. When a bigger scoop was present, more candy was eaten. Under certain conditions, some humans don't have a fixed value of how much is wanted. Instead, under these real-life conditions, humans looked to outside queues to meet their requirements for candy, which is essentially a form of mouth entertainment. The cues in some societies all point toward consuming more, others less.

**APHORISM:** *If you spend more of your time noticing what you actually are, you will rediscover what you are creating. At that same moment, you will be able to choose what you are creating. Try not to get lost in fantasies in the process.*

Modern neoclassical [market] economics is generally either casually dismissive or else willfully silent on the subject of human needs. Most market economists eschews all discussion of needs as superfluous, believing human choices are more effectively viewed in terms of wants. In market economics, need is a 'non-word'. Many market economists group desires, consumer preferences, tastes, and demands under the category want, and insist that absolute human or economic need is nonsense. Market economists generally interest themselves in questions of market allocation of resources, and generally refuses to distinguish between different kinds of preferences or the motivations for the use of these resources. All transactions in the market [or, at least those allowed by the State] are assumed to represent the rational decisions of informed consumers, attempting to maximize individual utility in the face of the available choices and their own resource constraints. In reality, market economists collapse different categories of human needs into a flat plain of [infinite, insatiable, unlimited] wants. This means that material wants for goods and services are incapable of being completely

satisfied.' Where, occasionally, the concept of need is introduced, it will invariably appear only to be dismissed very quickly in favor of wants or preferences. Anderton (2000:3) for example, introduces the question of human needs on the first page of his undergraduate textbook on economics. 'Human needs are finite...' he concedes.' [But] no-one would choose to live at the level of basic human needs if he could enjoy a higher standard of living. This is because human wants are infinite.'

There are some modest exceptions to this tendency. In an essay entitled 'Economic possibilities for our grandchildren', Keynes distinguished between two classes of needs: 'those needs which are absolute in the sense that we feel them whatever the situation of our fellow human beings may be, and those which are relative only in that their satisfaction lifts us above, makes us feel superior to our fellows' (Keynes 1931, p.326). In the same essay, Keynes looked forward to a point in time - 'much sooner perhaps than we all of us are aware of' - when absolute needs had all been satisfied and we could devote our energies to non-economic purposes. Perhaps more importantly, the concept of insatiability underlies the entire edifice of the consumer society. Modern economies are themselves structurally committed to a continuing growth in the national income. Growth in consumer demand is regarded as a vital prerequisite for a continuing improvement in the quality of our lives.

Interestingly, producers, retailers, marketers and advertisers wanting to know how to design and sell products that consumers will buy use the field of human research (known as consumer research, economic psychology, marketing, human persuasion, motivation research, etc.), and have drawn quite specifically from the needs-theoretic framework that formal [market] economics has rejected.

There has been a long-standing and world-wide confusion on these issues. Amidst tireless variations on the slogans of "individual and consumer differences and choice" and "what is a need to some is a want to others," reveal the absence of any grounded understanding of humanity [f]actual organic-social life. In the background, for over 2500 years philosophers have largely avoided the issue of universal life needs and any common life-ground of moral meaning. Economists (market economists) have systematically conflated needs and desires with no recognition of their ultimate distinction by life necessity itself.

**ABSOLUTELY NEEDED DIRECTION:** *Humans have has something resembling needs, and among society, there is a decisioning procedure that will algorithmically tend to choose the thing that society has programmed into it that humans need, and humans prefer.*

Human behavior provides evidence for human needs and preferences. In general, the difference between a need and a preference/want is stability:

1. **Needs** are static and do not change significantly

in relation to experience -- needs are human requirements given a conscious human exists within a conditional environment (where, conditional = requirements). Needs are due to the embodiment of consciousness in a physical, impermanent form. Need fulfillment sustains the optimal experience of a physically embodied consciousness. A lack of need fulfillment is likely to cause a void of fulfillment (experienced as suffering).

2. **Preferences** are flexible ("plastic"), they overlay needs, and may change in relation to an adaptive experience (a self-interaction with an environment). Preferences are acquired over time. Preferences may not be stable; they may be dynamic. A preference system should be appropriately uncertain.

Statements about wants are intentional, whereas statements of need are 'extensional': their truth depends on 'the way the world is' and not 'the workings of my mind' (Wiggins 1987: 152). It is quite possible to need something that "you" do not want; for example, "you" "may need it without even knowing of its existence, as a diabetic needs insulin to avoid serious harm. More education is of no help to someone who is starving. Compared to the indeterminacy of future generations' preferences, need provides a firm foundation on which to build sustainability targets for decisioning, habitation, and ultimately, fulfillment.

What is to be done address various types of:

1. Needs (habitat service systems).
2. Wants (personal life and growth opportunities).
3. Preferences (customizations).

In application, values\* [encode] decisions that orient more or less greatly toward the:

1. Optimized fulfillment of need, and
2. Sufficient meeting of a flexible preference.

It is possible to perceive 'want' more clearly when it is seen as a level of social standing between people.

**NOTE:** *Values and preferences are acquired over time, through experience.*

Being 'human' comes with innate and stable "preferences" (misnomer) called 'needs' (a.k.a., fundamental/stable human fulfillment requirements). Because individual human beings have needs that may be sufficiently fulfilled to optimally fulfill, they are self-interested, naturally.

If there are preferences, then they are preferences over all of one individual's possible future human lives? And then, there is the social matrix of preferences

combined.

Human needs have a sound moral grounding that preferences do not. Human needs coherently link with principles of justice and equity that orient socially toward ever greater states of flourishing for everyone. Claims of need inform moral determination on agents that preferences do not. An important corollary of the moral import of human need is that meeting needs should be given priority over meeting wants whenever the two conflict or if resources are scarce. Human needs, present and future, are prioritized ('triaged') present (and future) before consumer preferences.

**QUESTIONS:** *How is the societal system optimizing and prioritizing for human needs and subjective preference? Then, with preference, there is always the question: Whose [individual] preferences are being optimized for? Which preferences are being optimized for, the current or future probable (i.e., what you want now, or what you want after having the experience fulfilled of what you want now)?*

Material interaction can go well or badly for human flourishing (and suffering) depending upon its regulating value purpose: well (toward flourishing), if steered by life-value coordinates to realize human needs; and badly (toward suffering), if steered to maximize private profits or state-party power. There are a wide variety of terms for the idea of material interaction, including 'productive force development', which means nothing but more material output.

Questions for differentiation include:

1. How is the societal system optimizing and prioritizing for human needs and subjective preference.
2. With preference, there is always the questions of:
  - A. Whose/which preferences are being optimized for?
  - B. Are they optimized for the current, or future probable, state (i.e., what "you" want now, or what "you" want after having the experience fulfilled, of what "you" want now).

There is a relationship between needs and wants:

1. Needs are innate for functioning efficiently, wants are products chosen - needs as anything people depend upon to function such that a state of optimization is experience by the system; for humans, this would be a high form of well-being and fulfillment. On the other hand, wants are products/services identified for satisfying unfulfilled preferences, or services that are not of a primary life-support type. The search for need satisfiers is influenced by societal, environmental, and technological changes, and wants are also

influenced by similar forces.

2. Wants can be created, needs cannot be created because they are considered innate and hence presented as beyond the influence of marketers. On the other hand, wants can be created because they are culturally defined, they are subject to learning, and they can be influenced by individual traits.

There are:

1. Absolute needs - those inputs required to remain alive (and living, 'well').  
A. A need is that without which life capacity is necessarily reduced.
2. Wants - everything else.  
A. If a want is not fulfilled, then life capacity is not reduced.

In early 21st century society, there is a conflation of needs and consumer demands. Objective human life-requirements can be rigorously distinguished from stimulated consumer demands.

**APHORISM:** *You can't truly do what you want until you know what you are doing.*

In community, individuals maintain a connection to the things we design and create after they have been placed in the real user world:

1. In the market, the perspective is, at least in part, getting people to want stuff.
2. In community, the perspective is, at least in part, making stuff that people want.

Life-requirements are not simply demands for use-values that we lack, they are our actual, positive connection to the natural field of life-service support and the social field of life-social development. As such, life requirements are an essential guide to the fundamentally practical question of what a life-coherent societal system must produce.

If human demands at any moment are infinite, then humans need infinite resources, and the problem of scarcity exists de facto. In concern to needs, at least, demand is not continuously infinite. Humans need specific amounts of various inputs (e.g., food, water, etc.).

**APHORISM:** *To get what you want, get what you need. We can't always get what we want, but we always want what we need, though aberrant environments may confuse what is needed.*

The second assumption is that there can be no self-management of resources, so society must create rules from authority in order to solve the problem of scarcity.

If a need involves a behavior, then to ever claim that you

are done with that behavior does not make conceptual sense. Peace is a process. In early 21st century society, going to the grocery store to buy food is a cyclical process, you are never "done" going to the store. The need has a cyclical task nature that requires the involvement of a self-initiating constructor to perform the task.

When we have our food and shelter needs taken care of we can start responding to the deeper demands for access and opportunity in society, the wants.

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In part philosophy is about helping you differentiate that which you can and cannot choose. Whether humans have needs that must be fulfilled to survive and thrive is not a choice, just as whether the sun is at the center of the solar system is not a choice. Knowing the difference between facts and personal/emotional preference. And also knowing what you do and do not have control over.

Human needs, unlike preferences have a foundational moral composition; they come with statements (claims, arguments) of justice (social access) and equity (economic access). Universal needs imply that there is an optimal, [f]actual way to generate human flourishing. In more simple terms, universal needs imply moral decisions, actions, and creations (or "obligations"). An important corollary is that fulfilling (meeting, satisfying) human needs should be given priority over meeting wants if the two conflict ("trade off"), or if resources are scarce (i.e., there is not abundance). Universal needs imply that specific formations of societal system are likely to sustain flourishing, while other formations are likely to deviate by degree from optimal flourishing. Human need fulfillment present (and future) is a priority over [consumer, individual, or fundamental] preferences. Note, the three words in brackets in the prior sentence are systems of belief, generally termed: consumerism; individualism; and fundamentalism.

#### DEFINITION: **accommodation (n.)**

c. 1600, "that which supplies a want or need, from French accommodation, from Latin *accommodationem* (nominative *accommodatio*) "an adjustment," noun of action from past-participle stem of *accommodare* "make fit; make fit for" (see accommodate). A home, today is a place where needs are satisfied. In community, the habitat is the place where needs are completely satisfied.

There are several possible processes that may generate preferences:

1. Adaptive processes.  
A. When people's desires or preferences are adjusted to what it is possible to achieve.

'Adaptive preference formation is the adjustment of wants to possibilities.

2. Preference change through learning that there is a better preference.
3. Pre-commitment.
4. Manipulation.
5. Rationalization.

If we aren't fulfilling our instinctual needs then we won't be happy. Why are people the way they are at the instinctual level? When we know that we will have a higher probability of making intelligent choices. We have to find a way to work with our instincts. If we don't meet our instinctual needs then we aren't going to feel "right". If you don't feel like who you are being who you need to be, if you are not serving those instinctual needs, then you will feel unfulfilled, you will feel unhappy, you will feel as if there is something wrong. But, this doesn't mean that we are a slave to our instincts, we need to change, and evolve to our new environment.

Prior to the "want", there is a need. When a need is not satisfied, it becomes a strong stimulus to action on the part of consciousness. Needs may be viewed as "drives", which spur actions aimed at fulfilling a need. A need may or may not be fulfilled by the conclusion of a wanted action or product. A want can have any of the following three characteristics:

1. Wants that express themselves as non-functional requirements.
2. Wants that express themselves as products and services. Here, want is a specific requirement at the product class level in the market. Needs become expressed as particular arrangements of the environment forming services (which are used), and products (which are used). In the market, products and services are identified for satisfying unfulfilled needs. In a community-type society we design systems that fulfill our common, individual needs.
  - Commercial standpoint: A want is something capable of being learned or experienced in a person's lifetime. However, want will constantly change, unlike needs which remain unchanged.
3. In the market, there are also brand-specific wants, concerning the choice between brands that produce the same class/type of product or service. In the market, products are brand specific. In community, products have no brand specificity; hence, there are no brand-specific wants. A brand-specific want concerns the choice between brands that produce the same class/type of product or service.
  - Marketing standpoint: Wants are learned, culturally influenced, and fulfillment is determined by the level of an individual's

resources.

Contextually, wants may be synonymous with several other concepts:

1. Needs.
2. Intentions.
3. Motives.
4. Drives.
5. Desires.
6. Goals.
7. Driving forces.
8. Feelings.
9. Expectations.
10. Preferences.
11. Customizations.

In regard to these terms, four orientations ("dichotomies") are available:

1. Needs can be recognized and fulfilled, or not.
  - A. Primary needs are innate and come from the code that re-creates humans.
  - B. Secondary needs (acquired or psychogenic, including desires).
2. Motives (orientations) can be toward the fulfillment of real world human need, or not; regardless, real world human need is experientially.
3. Goals can be generic or specific.
4. Driving forces are internal and external, responses from the inside to signals from the outside, and signals from the inside to which the outside (in scale) responds to.

**NOTE:** Take a primitive skills/survival course and one will quickly learn the importance of setting one's needs apart from one's wants.

## 9.1 Implication of need and want encoding for a societal decision algorithm

**NOTE:** In many ways, an intelligent approach is also about recognizing what we don't need.

In a sustainable societal system, the meeting of needs is given priority over the meeting of wants if the two conflict, or if resources are scarce. Each generation needs to pass down the conditions for well-being and the regeneration (sustainability) of satisfiers. This can be stated formally, following

1. Wp: present-generation human wants
2. Np: present-generation human needs
3. Wf: future-generation human wants
4. Nf: future-generation human needs

The implied priority rule is:

- $N_p = N_f > W_p/W_f$

**NOTE:** This "morality" protocol means that it is immoral to take action that provides [commercial] luxuries to some at the cost of others' access to [life] needs.

This is a principle or protocol that states that it is not permissible to fulfill the wants of the present generation if doing so would compromise the needs of future generations. The idea/protocol is given many names, including the "moderate sufficiency" principle.

## 9.2 Infinite wants

**APHORISM:** Never be so sure of what you want that you wouldn't take something better.

The "infinite wants" culture is a product of the system need for constant turnover in the market economy ("wants that go on and on forever"). One could think up any random item of "want" and then assume not everyone could have it. This is called "scarcity projection" and, in short, it implies people are utterly irrational and upon learning about some new material fashion/good, they will impulsively fight for it. Such thinking keeps the market in place and the consumption ethic going.

**MAXIM:** The market is a place of infinite wants and ignored needs.

Examine every desire and ask:

1. Is this a desire that is aligned with the highest truth for all?
2. Is this a desire that I want to satisfy my egoic needs?
3. Where does the desire come from? A feeling of lack, a sensation of lack (of something missing, of something not here).

Early 21st century society has confused needs with wants and also manufactured desires for products that have no human requirement in order to sustain a profit.

**NOTE:** Advertisers (marketers) use the presence of human needs to sell more products by associating a commercial product with real need fulfillment.

There is a large amount that could be said on the value system disorder that is essentially inherent in the statement that assumes that people have infinite wants, that everyone wants to live in that 10,000 square foot mansion, or that service systems couldn't be organized to provide everyone on the planet with an extremely high standard of living. The values present in early 21st century society continuously reinforces materialism and acquisition. These are, in part, value system disorders.

Market materialism and its accompanying value system disorder exists not only on the demand side of the employer-employee-consumer model, but also on

the production side also, the notion of "harder work" equals more pay. But in reality, low income workers are not poor because they do not work hard; they are poor because they are paid low wages.

**INSIGHT:** People preferences are shaped to meet industrial needs by advertising.

The following is the irrational argument for infinite (and/or the unplannability of) wants:

"People are different; people live differently. Since everyone's ("our") interests, values, and lives are different, everyone owns different things. Further, everyone's lives ("we") are constantly changing. What someone ("we") own today might not be what we own tomorrow, or even have an interest in, and if we don't make decisions about what to keep and give to others, by default, we will hold on to everything (and our lives will be packed with stuff). Depriving "ourselves" of the natural stream of infinite wants is deprivation, and deprivation is suffering."

Note how, in the argument above, there is little to no integration of commonality, either within or between the individuals. There is also no recognition in the argument that some systems for which humans require continuous input are of continuous interest, and ought to be planned out ahead of time. The idea of infinite wants is dominant in short-term thinking (and not the idea of extant logical and continuous, though temporally finite, relationship between an environment and a social organism, which necessitates complexity and long-term thinking).

In some societies, there is also the manufacturing of unhappiness via industrially manufactured and socially engineered wants, which are often attached to needs by advertisers.

What is less subjective is emotional responses that relate survival and the pleasure and pain principle. While it might be that some people are emotional dysfunctional to the point of not feeling much at all, we will all generally feel the pain of stabbed by a knife, lack of belonging, or of starving, of being homeless, or even just illness. We will all feel the pleasure of having our needs met and of feeling secure in life in general.

## 9.3 In comparison, the market (as a direction)

**NOTE:** Marketers create want; they create (or, at least, influence) a market of consumers for capitalists.

The monetary market ("want") mindset assumes that more productivity or material output automatically means better lives and life conditions for people. But, without any life-value criterion (i.e., any life-value mechanism) to show or enable this outcome, it is not

likely to be the actual outcome. It is unwise to assume that technological advances or innovations in themselves serve human needs and capacities to live fuller lives. They can only reliably do so if life-value standards are involved in decisioning. The idea of ephemeralization (most notably seen in the industrial method of factory and assembly-line production) expanding to ever vaster and world-changing forms can continue to be either by slave-like mass labour and ever more nature-destructive machines and methods or, at the other pole of possibility, organized by coherent life need orienting values (or standards) to ensure humanity's universal life necessities including human contribution and ecosystem integrity. This is the deciding choice process of social rule-system. Fundamentally, community and the market have different information requirements.

**NOTE:** *Competition at the socio-economic level often means that some course of action may be satisfying one need, while simultaneously inhibiting another.*

Advance or degradation of the human contribution and common access is the key on all sides—the ultimate need for life contribution and enjoyment which entails free critical speech, thought and creative action in realizing the life capacities and needs of people.

In the market, the claim that a certain product or service improves quality-of-life is a popular notion that is commonly exploited. It is frequently not clear how this concept is understood by those that claim their products and services contribute to the improvement of quality-of-life. On the one hand the multifaceted nature of this notion is more than often neglected; on the other hand the complexity of the subject matter is employed as an excuse not to stipulate how quality of life improvement claims could be verified.

**INSIGHT:** *The market-State system enforces participation under their jurisdictions. Without participation in the market, there is destitution. Without participation in the State (e.g., taxation) there is prison or death.*

### 9.3.1 Market needs

*A.k.a., Monetary needs, money needs, financial needs, currency needs, credit needs.*

People in early 21st century society do consequential economic actions for an abstraction called money; the structure of their society means that their very lives depend upon this abstraction. In the early 21st century, money is absolute in value, in that it is absolutely required to do anything, and in the hands of those who did good and those who did bad, it has equal [future] purchasing value. Alternatively, people in community do consequential economic actions for real human need and well-being. In early 21st century society, individuals are likely to feel pain when lacking money for any significant period of time. A lack of money tends to mean

a lack of access, and so we suffer and may even die as a result. In the real world humans can live without money, but they can't live without food, sleep, etc.

**INSIGHT:** *In the financial market, "you" need money to make money to live and not become destitute. In the ecological environment you need food, water, shelter, and other resources to survive and thrive.*

There are no currency related economic needs in community. There is no concept of " or domestic product" (GNP or GDP), no economic market, no abstracted costs, no profit, no paid work, no level of income, no private wealth, no trade/barter, and no monetary value. These concepts do not affect any aspect of society in community. Buying and selling is essentially anti-social in itself. It can be made more social (though still not being actually social) by differentiating money used for "good" (linking price to benefit, economizing positive) and for bad (linking price to harm, economizing negative). When currencies are linked to "bad" objectives and abstractions/concepts (i.e., such as trades) they are likely to take on unequal value (with one currency being more valuable than others), and distribute value (as fulfillment) unequally. In this way, an algorithm could scale the value of cost/payment of some product/service dependent on its knowable, statistically certain consequences.

**INSIGHT:** *Livelihood in the market is irrelevant when the market is not present.*

There are no secret or "indirect interactions" in a community-type societal system. "Indirect interactions" are another name for market-based interactions. Indirect interactions include all of the following types of societal organization: all businesses, all charities, and all State/government organizations (authoritarian or representational). Businesses are indirect, because the life cycle therein is separated (i.e., employee, employer, consumer), and not, unified (user-designers). Charities are indirect, because instead of replacing the old (socio-economic system) with the new (community-type), they do what is called patchwork. A good analogy is: you can catch a fish for someone and give it to them, or you can teach the person to fish for themselves and maintain the ecosystem from which the fish originate. Authoritarian States are self-evidently indirect because it is the authority that decides subjectively, regardless of an objectively real world. Representational States are indirect because the notion of something or someone being representational (of the actual thing) means, itself, to be indirect. Instead of an open source protocol, in a representational State, decisions are made arbitrarily or based on representational opinion, both of which are indirect, and not, unified organizational structures.

Human fulfillment cannot be explained with property, trade, and force, but you can do it with information,

resources, access, and coordination.

**QUESTIONS:** *Can the market-State define and explain human fulfillment in a mechanistic way? Can it tell you how well-being is achieved among the whole planetary human population. Fulfillment, as global well-being, is something different than what market economists and politicians are doing.*

### 9.3.1.1 Market and community perspectives on the atmospheric services

The natural atmospheric [resource] service of breathable air, open space, and light are neither conserved nor protected by the corporate-State rights system, but systemically deprecated insofar as:

1. The air is polluted by commodities production and uses.
  - A. Air composition protocols.
2. Open space is cumulatively occupied by same private uses and commodities disabling people's lives (e.g., visual and aesthetic obstruction, pervading fumes, and motor-spike decibels and subsonic propagations).
  - A. Open-space protocols.
3. The light of the sun has been made toxic by effluents having cumulatively destroyed the ozone layer for protecting the earth from infra-red solar radiations.
  - A. Sun-radiation buffers (by ozone-layer protocol).

### 9.3.2 Market price

**INSIGHT:** *Community exists beyond exchange, mutual or otherwise. Instead of exchange, there is coordinated access fulfillment.*

All that matters for the market's continuation is that there is an exchange, that people pay. The market is bound by price, by money-demand. When needed resources become commodities (anything that can be exchanged, bought and sold), the concept of 'price' becomes encoded as 'value'. For instance, food (as a resource) is no longer valued based on its dimensions of health (a "true", materially fundamental value), but on the tradeable features that can be valued as a 'price' in the market (i.e., its transactional relationship value). Value (that which oriented toward survival and fulfillment) and price are thus mixed up (confused in cognition). That which is of "true" value (i.e., orienting toward fulfillment) is a non-market dimension.

**NOTE:** *Advertising exists to convince people to do things that they would not, necessarily, otherwise choose to do (or, at least not prior to more intentional thought).*

### 9.3.3 Material acquisition and possessions as materialism

**APHORISM:** *Unless we think through what it is we want to happen we are unlikely to make it happen.*

The centrality of material possessions in current societies and for certain individuals has triggered a significant amount of research in the social sciences. Belk (1985:291) defines materialism through the importance a "consumer" attaches to worldly possessions. At the highest levels of materialism such possessions assume a central place in a person's life and are believed to provide the greatest sources of satisfaction and dissatisfaction'. At the societal and cultural level, materialism has been taken as a structural variable in order to compare societal types. In social sciences, historically, materialism has been identified with personal values (Richins et al., 1992) and individuals' personality traits, but not with differently encoded understandings of access (as in, cooperative societal structures versus competitive).

There is also the similar, but separate notion that materialist societies are those that focus on Maslow's lower order needs. Maslow regarded the lower needs as deficiency needs (doing, "D" needs) that for children had to be met by parent-figures, and the higher needs (Being, "B" needs, growth needs) as developing later through 'inner states of being' to the ideal stage of self-actualization.

### 9.3.4 Consumer demands

There is a difference between life requirements and objects of consumer demand, that is, the deprivation of the latter might produce subjective feelings of harm in some people in "wealthy" societies, but these feelings are not objective harms (though the self-created psychological trauma can be). Here, life requirements are separate from market-based consumer demands. In early 21st century society, there are inputs that all human life requires to survive and develop, and then there are a separate set of demands that humans do not require for their life capacity and full development, but they still demand. Needs (life needs) exist in contrast to conditioned market desires, preferences and wants, which are the opposite in principle, because without them no life capacity is reduced.

**NOTE:** *Life requirements may be distinguished from the extraordinary range of contextual and cultural demands of people.*

In the market, where all (or, most) human needs are classified as wants, there is likely to be very little agreement on what needs are or could be (because, they are intermixed with wants).

#### 9.3.4.1 Market demand creation

*A.k.a., Market created wants, market demands.*

It cannot be denied that individual humans can be (and have been) enculturated through advertising and marketing by commercial institutions to want objects and services that are verifiably detrimental to their well-being and to the ecology -- to want things that if the individual humans were better informed and with sufficient foresight, would immediately recoil from.

*"You can sell anything to the masses if you just display it well."*

- Professional display designer

It is important to recognize that the hooks some people have been enculturating into accepting are connected to the way they see/perceive life today. How they were taught, and now experience yearning, and even desire itself, is a product of a pre-existing system that they were born and conditioned into (a governing reward system), and it is going to take quite a bit of information processing and time to undue this programming. Socio-economic conditions determine a lot more than people in modern realize.

In the market, artificial "needs" are created through the logic of profit. The culture of profit and fundamental structural needs of the system tell individuals therein what to value. Through its acceptance we encode a value set into our lives and lifestyles that orient toward the achievement of these artificial needs and away from human need.

**NOTE:** *In a state of socio-economic competition, where everyone is out to meet their own needs at others expense, a predatory system emerges, and wants can easily become confused with needs.*

In the market, institutions and companies producing the goods and services, that people have from to choose among, are actually setting consumers' options, shaping wants. The available consumption bundles have been created by entities in the market, and not the individuals themselves. Thus, the goods and services may not be what the consumers' desire, dream of, or prefer under alternative institutional settings.

In the market, everything is called a "good", regardless of it is life affirming or not. Consumer "goods" subject to the forces of marketers and social differentiation are not always successful in contributing to human needs.

### 9.3.5 Consumer rights

When the [free] market is present, there are not [human] 'needs', only [consumer] 'preferences'. In the minds of some market theorists, there is the idea of "consumer rights", which establishes the following logic:

1. I the consumer has a right,
2. whatever sentience of other life is degraded,
3. because I have bought and paid for it,
4. this is my right and my freedom.

When there is ownership, then the idea of having "a just right" and "privilege" (i.e., hierarchical priority access), become active encodings over inter-dependent, mutual access (i.e., community access types). What if the desired capability for which people claim a right is for what stunts or violates life capacities at an ecological or organic level?

### 9.3.6 Societal-type input differences

**APHORISM:** *There is no such thing as 'fairness' in 'bargaining' (in the 'market'); there is only 'fairness' through 'contributed protocols' designed for 'cooperative fulfillment'.*

Different societal structures are responsive to different inputs:

1. **Capitalist markets** respond only to price signals (i.e., consumer demands). Price signals are generated by peoples' purchases. The socially constructed system has needs for its continuation.
2. **Community** responds to life requirements (i.e., humans have needs for their continuation).

Given the societal type, who has control over basic life-resources and life-services?

1. Private control (in the market there is price).
2. State control (in the State there is legal authority).
3. Commonly informed and openly engineered decision control (in community there are humans with systems science).

Socio-economies are complex evolving networks formed by individuals acting on the basis of inputs (and pre-existing structures):

1. In the **Market-State**, the primary input (signal) is some individual(s) psycho-sociologic position among competitors in a hierarchy of individuals. The primary structures are institutions, with multiple sub-institutions categorized under the labels "the market" and "the State".
2. In **community**, the primary input (signal) is the internal experience and external condition of human fulfillment. The primary structure is adaptive, optimized, and unified for human fulfillment. At the information-level it is a unified societal system, and at the physical level it is a materialized habitat service system.

Individuals with needs require a "means" to meet their needs. Therein, different societal types may select different "means" to/of fulfillment:

1. In the **market**, that "means" is money. The point of money is to make enough to do what you want to do -- fulfill your needs and add those market

- "luxuries" on top.
- In **community**, that "means" is collaborative development of a unified societal model at the macro scale and access to a materialized habitat service system (i.e., integrated city system) at the personal scale.

### 9.3.7 How conflict/anger may arise through dis-coherent wanting

**TRUISM:** *All conflict arises from misplaced desire.*

An "adult" does not get angry when s/he doesn't get what is wanted, because his/her wanting it was simply a preference, not a necessity. S/he therefore has no fear associated with the possibility of not getting it. Hence, no anger or conflict. S/he is not angry when s/he see others doing what s/he doesn't want them to do, because s/he doesn't need them to do or not do any particular thing. Hence, no anger.

**INSIGHT:** *In socio-economic competition, competitors are incentivized to reduce humankind's ability to self-regulate [toward fulfillment] in order to bolster their own powers and profits.*

In most product markets around the world today, most of the products are supplied by a small number of suppliers. There is very little diversity in terms of the products themselves and the number of suppliers. For most products there is a relatively low demand for diversity. Individuals everywhere all want the access that science, technology, and available resources can best provide at the time. And in the market, individuals pay for what we can be afforded or perceived as affordable. Hence, in many real world cases of wants, variety is not valuable or desirable; what is desirable is optimization.

**STATEMENT:** *Demands of human opinion will always be secondary to ecological demands if humans want to survive and thrive on this planet.*

There are authors who have well-conceptualized the link between human needs deficiency and social conflict. John Burton (1997) provides reasoning for that when, generally, there is insufficiently individual fulfillment of needs, there is social likelihood of "Deviance, Terrorism, and War: The Process of Solving Unsolved Social and Political Problems". It is possible to imagine that much of the protracted social conflict that is expressed as 'deviance, terrorism, and war' are actually frustrated human needs of identity, security, recognition, participation (and others), and trauma. (Burton, 1997)

Assume that the social structures of a community, or any society, are to some degree functional or dysfunctional for the purpose of providing or supporting the fulfillment of needs for a population. And, when those needs go unfulfilled, there are lesser states of

community, and under some societal structures and social dynamics, they may breakdown into conflict. It is sometimes one group of a whole population's efforts to satisfy their own needs, at the expense of others (or, another groups') needs (the satisfaction of) that actually fuels conflict, causing a difficulty to grasp in the consciousness of the individuals how need fulfillment becomes the obvious basis for conflict resolution.

**QUESTION:** *In what societal categorical state does 'conflict' exist? How is violent conflict handled by individuals (in particular, the three core of: murder and rape and assault), as a 'medical' and 'restorative justice' issue by some organizational/structural intersystem team of contributors, or a 'criminal authority' issue of enforcing monopolizers, or other? Is there profit off of conflict?*

If dysfunctional social structures and institutions are root causes of social conflict, then conflict resolution (justice and restoration to full freedom) should be a process for fundamental structural social coordination, so that social structures and institutions exist explicitly for the purpose of satisfying human needs as intentionally demanded and contributed. If the goal of conflict resolution is framed as a 'problem to be solved', then an analytical problem solving process can (i.e., requirements, *but not complete*):

- Analyze the existing social structures and institutions, in order to determine in what ways they are dysfunctional;
- Determine just what the culturally, socially and environmentally appropriate needs satisfiers would be in the conflicted community or society;
- Design a process for making the necessary operational changes or engineering the new structures that would suffice for fulfilling those unmet (gap-ping) needs that have been frustrated. This analytical problem solving process may be used in both a pro-active and re-active manner, when used proactively in planning, there might be the opportunity to prevent, some conflicts from becoming violent and protracted, ensuring risk reduction.
- Decide a resolution that denies power [over others] a place in the resolution of conflict. Outcomes based on coercion cannot be a basis for long-lasting and self-reinforcing societal decisions or resolutions.

#### 9.3.7.1 *The world is neither free of resource nor free of work*

To some people the term, "free", means that there is no resource consumption in a produced service or product. But, this isn't how "free" is defined in community. In community, "free" means that there are no artificial

restrictions on access to materials required for human fulfillment. Here, access to material resources and products comes without the necessity of participating in an exchange - community is a moneyless form of socio-economic organization. In community, the word "free" does not mean that a good or service is provided without using or otherwise being composed of resources. In the material world, every productive output utilizes resources, which are then reused or recycled following natural processes. In fact, resources aren't technically consumed, they are transformed. But, the total process of maintaining access to the productive result of material construction and re-configuration does have a technical component to it.

In truth, work as effort expenditure has been tied to our survival for a long time. Historically, we have had to do work to provide shelter, water, food, and fire for ourselves in order to survive. And, one of the consequences of this relationship between effort expenditure and survival has evolved our biological system to maintain an inherent desire to conserve energy.

In community, individuals are not actually giving a group or people anything. Instead, individuals are constructing via a contribution-based system that provides access for individuals to service systems that fulfill their needs, wants and preferences. Community is not a system where groups of individuals take from any other group, to give to any group, which is one of the characteristic roles of government.

Example: Given what is available now, "you" may want an "apple watch", but what do "you" really need? "You" need a communications and information processing interface, for which the current level of [un-/]common technological access may be a "apple watch". And, how many do you need? If it is an apple watch, then you want ("need") one, and maybe if it breaks you will want ("need") another.

Today, instead of becoming sensitive to that which is commonly needed and wanted, people are being conditioned to want certain things in certain ways, and to settle for certain things, certain ways.

### 9.3.8 Coordinated access by common [un] ownership

*A.k.a., Coordinated access through a unified information system.*

The earth's natural resources are essential to all forms of human life, and the earth's existence is not owed to any human accomplishments. Similarly, the earth is essential to all forms of life, and the earth's existence is not owed to any individual life accomplishment.

**NOTE:** *In a society, we are either all fulfilled, or none of us fulfilled, because we all exist within the same society and the complete fulfillment of any one individual necessitates the fulfillment of all.*

Common [un]ownership is logical, because the natural resources and spaces of the earth are nobody's achievement, and are required for human needs to be fulfilled. Individuals are only capable of creating complex accomplishments because of the efforts of past, as well as other current, individuals.

**NOTE:** *Obviously, humans are not the only users of earth's resources. Collective [un]ownership is a relationship among humans stating that all of humans have the same "claim" (i.e., access) to resources and spaces. That relationship does not imply that other lifeforms should not also have an opportunity to access and consume resources, or that the preservation of ecosystems does not by itself at least have ecological value that demands preservation.*

Different societal views on accomplishment:

1. In community (a *co-operative* system), individual accomplishments are informed by other individual accomplishments (going back thousands of years), producing an interconnected matrix of knowledge, technologies, resources, and spaces for current individual accomplishment.
2. In the market (a *competitive* system), individual accomplishments are the property of the final individual effort. Therein, when someone mixes their labor with something that is commonly owned, this object is thereby appropriated by the laborer as property.
3. In the State (a *dictative/authoritative* system), a portion of every final individual accomplishment is appropriated by the State to use as the State decides.

Egalitarian ownership is the view that the earth originally "belongs" to humankind commonly, in the sense that all humans, no matter when and where they are born, have some sort of symmetrical use (or "claim") to it. Egalitarian ownership identifies a common relationship among human beings and allows for a social recognition of concern about the usage of nature, and to the extent that nature is accessible, no human being has a privileged claim.

Four types of ownership-status:

1. **No ownership** (*a.k.a., common access, shared access, common unownership*) ± access directed by collective protocol.
2. **Private ownership** (*a.k.a., capitalism*) ± ownership directed by individual preferences.
3. **Shared ownership**
  - Joint ownership** (*a.k.a., public ownership*) ± ownership directed by collective preferences.  
Joint ownership means that each use would be

- subject to a decision process to be concluded to the satisfaction of each co-owner. Each co-owner must be satisfied on each form of use.
- B. **Common ownership** (a.k.a., ± in which the entity belongs to common population of individuals, each equally entitled to using it within explicit constraints. The first constraint being the inability to exclude other co-owners from also using it.

## 10 Preference

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*A.k.a., Customization, subjective needs, comparative options needs.*

It is because needs are based upon a common, social life ground that they are morally significant in ways that preferences are not. Preferences change in light of the options we have available – the phenomenon of 'adaptive preferences'. The concept of need is objective, whereas that of preference is contextual, subjective and environmentally determined. Preferences are subjective needs; because, although they are still common options to all of humanity, but they are the category of service-objects (provided under the condition of fairness; restorative justice) and not the fundamental structural direction itself, for everyone. Preferences define threads of the common, showing the separation between people's demands for needs, but "needs" categorize all people/humanity in society. In community, preferences are surveyed and observed on a shorter timeline than needs, which are appearing eternal for humanity. The accounting for preferences in a social system shows the accounting for local customization, and ultimately, freedom from coercion and conforming to various forms of dictatorship.

The privatization (in a market) of consumption preference precludes questioning the nature and content of consumer preferences, except within narrow limits. It is subject to numerous challenges on the grounds of subjectivity, epistemic irrationality, endogenous and adaptive preferences, limitlessness of wants, the absence of moral evaluation, and the non-specificity of future preferences. In a society where human needs are prioritized, then the action taken to have preferences fulfilled is reliant upon on the prioritized fulfillment of human need.

### 10.1 The logic of preference

**NOTE:** Preference can overlay (i.e., "colors the view) factual human need fulfillment, but it does not have to.

The Logic of Preference: An Essay, von Wright (1963)::

1. Preference is related to the axiological notion of betterness and the anthropological notion of choice.
  - A. Extrinsic preference - p is preferred extrinsically to q if it is preferred because it is better in some explicit respect. If there is no such reason, the preference is intrinsic. In other words, it is preferred because it can be explained to other individuals.
  - B. Intrinsic preference - If there is no explicated reason for the preference.
2. In a unified societal system with an efficiently

- organized economic system, only demands with reasoning exist actively in societal decisioning:
- A. Intrinsic "preference" (i.e., human needs) refers to evolved conscious-organismal requirements (e.g., human requirements), which are known or knowable. These are the categories of human requirement relevant to embodied consciousness, that when complete in some pattern to allow consciousness to feel, express, and respond optimally.
  - B. Extrinsic preference (i.e., environmentally bounded preference) states that, given what is known, an individual chooses to play one instrument over another. For example, there are an environmental set of physicalized and physicalizable instruments that a given person can play. Or, there are a set of physicalized and physicalizable wines (food>alcohol) that a given person can consume. There are a range of optimal human nutritional requirements, given nutrition is the intrinsic "preference" category.
  - C. Here, extrinsic and intrinsic preferences are interrelated and form a unifying system measurement system for human relationship fulfillment. There is an intrinsic category for which there exists a range of optimality, and a preference therein. For example, the decision and action to play an instrument, from a given set of instruments, may fulfill a need for self-actualization and/or health. There is a source for input (intrinsic preference, which isn't really a preference, but an absolute category), and then there is a range dependent (in part) on environmental availability and socio-psychological meaning. What are values, if not preferential orientations, given a direction (category of human requirement).
3. Notice the difference in perspective and complexity between the two views of intrinsic and extrinsic preference. From a market-based perspective, there can be "no reason" a demand is created or met. Conversely, in an unified societal system, there is always a reason, a source (trace) and posted organized location, for the instantiation of a demand into the societal decision system for re-organization of a common information-materialized environment (a space that affects every-one). In either case, someone can revise their preferences for many legitimate (or explicated), and non-legitimate (in the market) reason. There are mechanics with knowable dynamics that influence the probable resolution of a preference (value) for need (human requirement). In the market for competition over fulfillment, money is an abstract method for denoting the "value" (preference) of goods and services (Read: market assets). Money adds an additional layer of abstraction. There are components of valuation calculation in the physical world:
- A. Energy and materials required to produce - a biophysical baseline
  - B. Utility value - how useful is it in optimally fulfilling a human requirement (with a biophysical baseline), given what is known. How does the methodical re-orientation (i.e., value) of change relate to that which is optimally demanded.
  - C. With the least risk (e.g., opportunity cost, sunk costs, disaster recovery, etc.)
4. Here, energy is just another word for work (an operationally useful process). Useful (economic) work includes:
- A. Designing and organizing [information in the information system].
  - B. Reshaping the material environment (e.g., cultivation, production, manufacturing, etc.)
  - C. Habitat services for users (e.g., housing, medical, transportation, etc.).
5. In formal logical languages, states of a system (of "affairs") are typically represented as propositions, with the latter viewed as a set of possible system expressions (or "worlds"). All possible entity-access relations form all possible systems ("worlds") as 'betterness' relations, a model for a modal preference logic:
- A. A betterness model is a tripe  $M = W \leq V$ , where  $W$  is a set of system expressions ("worlds"),  $\leq$  is a reflexive and transitive binary 'betterness' relation  $\leq$  ('at least as good as'), and  $V$  is a valuation function for proposition letters.
  - B. Herein, all system expressions that are at least as sufficient at meeting current optimum access-fulfillment requirements are preferences (or preference relations). For example, someone can choose and have visualized a particular material object, an instrument for instance, and have it not negatively impact the access-fulfillment of the remaining population. All system expressions where possible instruments are produced are at least as good at sustaining optimum access fulfillment as the other -- and, this logic enters the decision system as a preference set. The individually preferred (relatively) materializations that do not impact the optimal materializations (the actual materially expressed access fulfillment) of every-one individual (i.e., of everyone). Within the preference set there is an individual (relative)

determination of preference. A preference is the relation between world expressions, quantifying over all world expressions.

- C. For instance, in the market, one prefers some house over another because the first is cheaper (market conception), and/or of better quality (quantitatively determinable) than the second. (Liu, 2009)

**INSIGHT:** All motivation to take a decision and act, originates from somewhere. What really is "a random thought"? Is there really such a thing as a "random" thought? How can you be sure it wasn't derived from some sort of stimuli, either known or unknown, conscious or unconscious, internal to the body or environmental? How can consciousness pay attention to what arises spontaneously, noticing and recording what comes, eventually tracing the information to a source.

### 10.1.1 The conception of preference

The conception of preference can be broken down into the following characteristics:

1. A preference is a preference for:
  - A. Utility (functionality).
    1. Featurality.
    - B. Aesthetic.
  2. Can pleasure and pain (happiness and suffering) be numerically standardized and measured [in terms of utils or utility units, which are considered as real as units of length, mass, or temperature]?
  3. Is there a natural 0 between pleasure and pain, or is pain (or death) 0, and a continuum extends therefrom, with the highest pleasure being that which is currently knowable, but not ultimately, statically defined? Can utility units have arithmetics applied to them. Biophysically, is a utility units index constructable from pulse, blood pressure, glandular activity data, rate of salivation, a degree of pupil dilation, or perspiration? Is there any way of comparing levels of satisfaction, human fulfillment, and expressed life pleasure among different people? Is there an objective way of measuring life satisfaction at two different times for the same individual? If all of life is subjective preference disconnected from that which is common to all individuals, then there appears to be no way to objectively measure life satisfaction. However, if there is commonality, a common genetic expression, a common environment, a common societal system, a common network of influence, then there appears to be a way of objectively (i.e., commonly) measuring satisfaction. Are there better alternatives to the current

environment that are the "best" for everyone in that common, current environment?

4. A unit of length is scientifically real for several reasons: first, there is a standard object which everyone can observe (sense) as one unit. Second, there is a natural zero for length. Third, units of length can be mathematically manipulated in relation to that which is observed (i.e., added, subtracted, and multiplied by numbers according to the rules of arithmetics), and the results make cognitive-logical sense (e.g., 2 meters + 2 meters = 4 meters).
5. Ask and observe the person: If it is asked: "How many units of happiness (nutrition) would you now get if I gave you a banana (food)?" If the context was a starving person. If instead, the question was: "Would you prefer an apple or banana?" If the context was a starving person. The zero state is death due to lack of nutrition (food). In the case of the true preference, the apple is at least as good as (Read: logical equivalence) the banana in meeting the current nutritional needs of the individual. It would seem that the first question and follow through (i.e., providing the food) would save the person from death, whereas the second question and follow through would do similarly, but allows for a "true" preference beyond the states of life or death (if the food objects are logically, sufficiently equivalent in meeting the individuals nutrient need, such that either choice meets the need).

### 10.1.2 The notation of preference

Notationally, let  $x$  and  $y$  be two logically and sufficiently equivalent (at least as good as) alternatives.

1. To symbolize the preference of the  $i$ th person.
  - A.  $M_i$  is the primitive "**mutual**".  
1.  $xM_iy$  is "I thinks (subjective) and/or measures (objective)  $x$  is at least as good as  $y$  and  $y$  is at least as good  $x$ "...at accomplishing some thing, at accomplishing something mutual. There is a specific type of presence, a choice where it is possible to have a preference, because difference exists in presence.
  2.  $[X]$  is at least as good as  $[Y]$  if and only if it is at least as good for the people who exist in both.
- B.  $R_i$  is the primitive "**given**".  
1.  $xR_iy$  is "I thinks (subjective) and/or measures (objective)  $x$  is at least as good as  $y$ "... given they are substantially equivalent at accomplishing the same thing. Note: the language "at least as good as" indicates the presence of a preference category. Given a concrete structure of the set of alternatives,

R can be associated with a preference in the following way: x is at least as good as y if and only if  $(x, y)$  is an element of R. Given this type of connection, the binary relation can be regarded as a representation of a preference, and can describe a choice over alternatives. If  $(x, y)$  is an element of R and  $(y, x)$  is not, then x is chosen over y.

C.  $P_i$  is the "**preference**".

1.  $xP_iy$  is "I prefers x to y" ...preference for a sufficiently equivalent thing.
- D.  $I_i$  is the "**indifference**" (i.e., no preference).
1.  $xli_iy$  is "I has no preference between x to y" ...no preference when accomplishing a sufficiently equivalent thing.
- E. If there exists a world where different environment compositions can accomplish the same thing (the set  $xM_iy$ ), then the relationship between  $P_i$  and  $I_i$  can be derived from  $R_i$  (i.e., where  $M_i$  is also  $R_i$ ):
  1. If  $(xP_iy, xR_iy \text{ and not } yR_iy)$  or  $(xli_iy)$ , then  $xM_iy$  is 001 - person i either has a preference or is indifferent between x and y, given a real mutual presence with the identifier 001 which x and y are similarly associated:
    - i. If, x is at least as good as y ( $xR_iy$ ), and not, Y is at least as good as x ( $yR_iy$ ),
    - ii. Or, there is not a preference for the preference between x and y ( $xli_iy$ ),
    - iii. Then, there exists a mutual preference set ( $xM_iy$ ).
    - iv. While, x and y are mutually equivalent at doing/accomplishing the same thing (with the identifier 001, or 1, or whatever).
  2. Without  $xM_iy$  there is no true preference, because there is no mutually substantial equivalence (i.e., no "preference" set), given a conscious receptor and the condition of an environmental context that connects with that receptor. In the context of humans, needs may be the receptor (i.e., human requirements), for which there are sub-receptors (e.g., human nutrition), and there are different environmental conditions (base on different environmental configurations) that connect with that receptor (i.e., different types of food, like carbs, lipids, a banana, a piece of fish). There must be a given substantially equivalent set for a preference to exist, otherwise the logic 'preference' is incomplete. If there is no substantially equivalent set, then the preference is arbitrary and subjective, and thus, the social coordination of decisioning [within a common environment] becomes unpredictable (i.e., the market).
  3. Where  $M_i$  is not also  $R_i$ , but  $P_i$  or  $I_i$  is  $R_i$ :

A. A. Not  $xM_iy$  - "I do not think (subjective) and/or do not measure when x is at least as good as y and y is at least as good x" ...at accomplishing some thing. Here, the common environment (the mutual existing) is unobservable and/or not thought about.

1. If, not  $xM_iy$ ,
2. Then, no existence for presence to occur within.
- B.  $xP_iy$  if  $xR_iy$  and not  $yR_iy$  (or  $yR_iy$  and not  $xR_iy$ ) - person i prefers x to y if (for what reason,  $R_i$ ):
  1. If, x is at least as good as y ( $xR_iy$ ),
  2. And not, y is at least as good as x (and not  $yR_iy$ ),
  3. Then, x is preferred to y ( $xP_iy$ ).
- C.  $xli_iy$  if  $xR_iy$  and  $yR_iy$  - person i is indifferent between (the preferences of) x and y; x is indifferent to y if x is at least as good as y and y is at least as good as x:
  1. If, x is at least as good as y ( $xR_iy$ ),
  2. And, y is at least as good as x ( $yR_iy$ ),
  3. Then, there is indifference to the preference between x and y ( $xli_iy$ ).
- D. So what? In other words, so what if person i prefers x to y if there is relationship to an environment including a common population? Where is the meaning between a population where preference exists and a common environment where resources exist the population uses? It would appear that without a set, without  $xM_iy$ , then there is no completeness.
- E. The fundamental axioms for real preference are:
  1. **Completeness (given presence, thought-observation)** - For some presence that exists mutually among a population (of thinking observers) it is possible to have a set in which the population has differences in preference in the way in which some thing, a presence, occurs,  $xM_iy$  and  $(x,y)R_i$ . In other words, for some "thing" that occurs commonly among a population, it is possible for individuals of that population to have preferences  $(x,y)R_i$  about the outcome or method of that things occurrence.
    - i. x equals y
  2. **Completeness (within the preference set)** - For any pair of alternatives (given substantial equivalence in "preference" set  $xM_iy$ ) x and y, either  $xR_iy$  or  $yR_iy$ .
    - i.  $x$  does not equal  $y \Rightarrow x >_y$  or  $y >_x$  (connectedness)
  3. **Transitivity (of the preference set)** - For any three alternatives (given a preference set of

$xMiy, z)$   $x, y$ , and  $z$ , if  $xRiy$  and  $yRiz$ , then  $xRiz$ .  
i.  $x >_y y >_z \Rightarrow x >_z z$

- F. Note that any model of preference that does not account for *presence* as part of its completeness is not complete. In other words, if a model for preference starts with, "preference within a set", while not acknowledging the presence of a "set", then that model is incomplete. A market-based social encoding of preference starts with the logic,  $xRiy$  or  $yRix$ , not with the acknowledgement that humans have common categories of requirement,  $xMiy$ . An poor analogy might be some individual who expresses the logic: "this is the way the world works (i.e., makes a truth claim), but simultaneously states that there are no truths that can be known about the way the world works." And so, there is no  $xMiy$ ; the preference logic starts with  $(x,y)Ri$ .

## 11 The human needs list(s)

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*A.k.a., Human needs list, human needs inventory, human needs database, human needs spreadsheet, human needs organization, human needs table, human needs index, human needs hierarchy, human needs pyramid, human requirements table, human requirements list, human requirements index, human life index, human life standards list, human needs taxonomy.*

Although the list of basic human needs does not vary and is universal, the ways in which these are met are context specific and may potentially vary over time. New human socio-technical advances may provide different means to meeting a basic need. Other changes in a socio-ecological context, such as, new environmental pressures or changes in the demography may also affect how needs are met or unmet. General improvements in human understanding may also lead to re-evaluations as to what constitutes meeting a basic need, thus shifting thresholds of harm over time. Despite the potential for thresholds to be context and time specific.

**QUESTION:** *What motivates healthy individuals?*

### 11.1 The primary [human] life processes

The four primary [human] life processes (or needs) are:

1. Sleep (restoration).
2. Move (locomotion).
3. Eat (nutrition).
4. Waste (material cycling).

The four basic life adaptation processes are:

1. Existence and survival (safety).
2. Relatedness and connectedness (social service).
3. Togetherness in habitation (technical service).
4. Self-growth and other discovery (exploratory service).

### 11.2 Real-world hierarchy of material life-cycling need

In a real-world, there is a hierarchy of material requirements for humanity:

1. **Universe:** Universal services allow for conscious existence in the universe (note: this could be considered an environmental need or condition).
2. **Planetary:** Biospheric and ecological services allow for life, and particularly, human life on planet earth (note: this could be considered an environmental need).
3. **Habitat:** Habitat services allow for meeting the requirements of human well-being at the habitat

- service levels of life support, technological support, and exploratory support (note: this could be considered an environmental/social need).
4. **Individual:** Individuals have physical and social capabilities and needs that must be met for humans to be well and flourish. The individual's body is a life ecosystem service itself.

### 11.3 Formal human needs lists (simplified)

*A.k.a., Prior human needs lists, models, schema and organizations.*

In past literature, there have been many different versions of a list of human needs. The following are the most common and well-known models, lists and schema of human needs (by different individuals and organizations):

*Note that some of these lists have variations.*

#### 11.3.1 Henry Murray (1938)

Henry Murray (1938) listed 24 needs in 2 categories:

1. **Biological demands (primary needs)**, the vitals - such as the need for oxygen, food, and water. These are fundamental needs for basic survival.
2. **Psychological needs (secondary needs)** - such as the need for nurturing, independence, and achievement. While these needs might not be fundamental for basic survival, they are essential for psychological well-being.

#### 11.3.2 Abraham Maslow (1943-1971)

Abraham Maslow (1943, 1954, 1968, 1971) listed 7 needs in 3 categories (originally depicted in the shape of a pyramid or triangle as drivers of human action):

1. The categories are:
  - A. **Existence needs** - physical physiological existence requirements, safety.
  - B. **Relatedness needs** - self and social connection (contribution, love & belonging, external esteem).
  - C. **Growth needs** - internal esteem and self-actualization.
2. The needs are:
  - A. **Physiological needs (bio-physical, vital)** - seeking food, shelter, air, water, warmth, reproduction (sexual intimacy), hygiene (e.g., excretion and toilets), sleep, and movement; seeking certainty of completeness of these bodily needs. Physiological needs are the

requirements of all biological creatures. These survivals needs form the base of Maslow's pyramid.

1. Physiological is at the base of the "hierarchy" and represents survival kinds of human needs.
  2. Physiological needs are the only needs which can be completely or even over satisfied.
  3. Physiological needs are continually recurring, so we must seek satisfaction of this basic need on a daily basis.
- B. **Safety needs (physical security)** - protection from harm; from disease, from physical insecurity, shelter; clothes; city/urban services; predictability, routine; familiarity; certainty; order; stability; limits/boundaries; seeking security in the market-State (through security of tokens, property, belongings, oneself and family, and employment), and in community, there are predictably planned socio-technical services, and health restoration (locally and globally). Someone can be safe, someone's personal objects can be safe, and habitat/city services can be safe when they work as expected, for human need fulfillment.
1. Safety refers to securing oneself and ensuring safeness in one's environment.
  2. In peaceful societies, safety needs are relatively easy to satisfy.
  3. Safety needs become highly important (become a priority) during natural disasters, fires, accidents, and other life threatening situations.
- C. **Belonging and love needs (social inclusion)** - affection; [positive] connection; family & friends; shared interest; bonding; seeking a sense of connection and belonging with friends, family, and others.
1. Love/Belonging refers to being able to have a sense of human belonging with others and an ability to embrace love.
  2. A person who has never experienced love and closeness will eventually devalue love and not be particularly worried over their inability to find it.
  3. A person who has received love and closeness during childhood will be able to love others, and not be devastated by the occasional rejection.
  4. A person who has experienced just a little love and affection will be strongly motivated to meet these needs, and might go about satisfying the need for love and belongingness in a pathological way.

5. Children need love in order to grow psychologically, and also, physiologically.
- D. Cognitive needs (intelligence inclusion)**
- understanding and creation; knowledge; meaning and self-awareness; imagination; discernment, creation; visualization; information curiosity; seeking intelligence and useful information; discovery and exploration.
1. Cognitive refers to intellectual understanding and the ability to create through knowledge -- the desire to know, to solve life's problems, and to be curious.
- E. Aesthetic needs (beauty inclusion)** - beautiful and uplifting; appropriate surrounding natural environment; biomimetic aesthetic; biophilic aesthetic; natural harmonic forms; harmony and setting; seeking beauty and natural biomimetic environments; search for beauty in environment, both as a real-world eco-system service condition and as an uplifting "awe inspiring" visual and auditory environment.
1. Beauty serves to elevate the feelings of individuals. It serves to broadcast the fact that you live in a society that cares about you. Exquisite objects and locations serve to bind society together through shared values and a deep sense of place and meaning.
- F. Esteem needs (self-social inclusion)** - self-respect and respect from others; high evaluation of oneself; achievement; confidence; competence; and the respect of others; seeking self-confidence, recognition, and achievement. Maslow distinguished between two levels of esteem needs: reputation and self-esteem.
1. Self-esteem comes from what you experience about yourself. Esteem refers to having a sense of ability to confidently engage with the world and affective decisions within it.
  2. Other-esteem refers to one's reputation in community, which comes from contribution and education. Here, there is someone having the feeling that others recognize and respect oneself, and that one recognizes and respects the abilities (and histories) of others.
- G. Self-actualization needs (self transcendence inclusion)** - self-growth; actualizing one's innate potential; seeking one's full potential; flow and peak experiences; challenge; problem-solving, understanding, exploration, discovery, self-development; personal growth (physical, mental, spiritual and mystical, and intellectual); realizing personal potential in self; seeking a desire to become better in all aspects of ones body and life; seeking a desire to help causes

- and reaching beyond one's own needs.
1. Self-Actualization refers to a higher order of human fulfillment, the desire for self-fulfillment and to realize one's potential.
- H. Other-self-actualization needs (self-other transcendence inclusion)** was added by Maslow in 1963 - helping others to self-actualize (may not exist for everyone); helping others to realize their potential; realizing person potential in others. Seeking a desire to help the cause of helping, supporting, and facilitating others in achieving their highest potentials at the societal and individual levels. Applying ones abilities during contribution in the mentoring of others could also be a form of other-self fulfillment.
1. An example of this is continuing to contribute into the "retirement" leisure phase of life, instead of leisuring through the remainder of life.

All of the needs below self-actualization are basic needs. Maslow also called these basic needs neurotic needs, deficiency needs, and deprivation needs, because if these needs are not sufficiently fulfilled there is likely to be fear and psycho- or socio-instability (i.e., "you" don't feel yourself. "You" can't operate from a calm, quiet center). Any unmet basic need causes problems and tensions that a human will seek (be motivated) to resolve. Maslow (1971) posited that the two layers, deficiency and actualization, are interrelated; however, the lower level needs must be satisfied before higher-order needs can influence one's behavior.

**NOTE:** *If both physiological needs and safety needs are satisfied, then individuals can turn their energies toward our "Higher" needs.*

The top four layers represent actualization needs, in other words, the quest for knowledge leading to character development. When these needs are met, the person experiences a greater sense of wholeness and fullness (wellness) as a human being. People learn to connect to something beyond themselves, gaining wisdom and enlightenment. Per actualization needs, behaviour, in this case, is not driven or motivated by deficiencies but rather one's desire for personal growth and the need to become all the things that a person is capable of becoming.

**NOTE:** *Maslow did not originally use the triangular (pyramidal) shape that has now become synonymous with his hierarchy. Instead, his initial description was narrative in style. Further, in his original article, Maslow proposed two separate hierarchies, the Hierarchy of Basic Needs and the Hierarchy of Cognitive Needs.*

Maslow expanded his thoughts on motivation in the book, Motivation and Personality (1970). Maslow (1943,

1954) tendered five levels of needs: physiological, safety and security, belongingness and love, esteem, and self-actualization. In 1971, he added a sixth level beyond self-actualization, that of self-transcendence, the need to connect with something beyond ones self. Maslow and Lowery (1998) added two more levels: cognitive (the need to know and understand) and aesthetic (the need for beauty, symmetry and order). The original five-level hierarchy of needs model remains a definitive classical representation of human motivation; and the later adaptations serve best to illustrate aspects of self-actualization, his original, fifth, highest order need.

If people are fortunate enough to meet their esteem needs, then they are ready to try to satisfy the highest level of needs in Maslow's hierarchy. A major difference between people who don't progress farther than the esteem needs stage is due to the adoption of core B-Values. B-values (Being-values) are what distinguishes the truly enlightened person (one who is self-actualized) from an individual who has satisfied all basic needs, yet still lives a life without purpose. People who embrace B-values will live a life of meaning and fulfillment.

- The B-Values are: truth, goodness, beauty, wholeness, aliveness, uniqueness, perfection, completion, justice, simplicity, totality, effortlessness, humor, and autonomy.

Maslow had indicated that each level when reaching a threshold of satisfaction would no longer become dominant as a human need. For example, if someone were starving to death, that individual would likely putting their physiological need for food high up on his/her set of priorities, and drawing a picture would be low in his/her priorities (unless it led to getting fed). Until some semblance of physiological needs are met, it is hard to move upward to safety, and likewise until some semblance of safety needs are met it is hard to move upward to love/belonging, etc. Human needs arrange themselves in hierarchies of pre-potency. Here, "prepotent" means that lower needs had to be satisfied before higher needs came into play.

Maslow acknowledged, however, that the natural ordering of needs may not apply in all circumstances, such as say a martyr that has chosen to give up food to make a statement of a political or social nature.

Maslow also indicated that indicated that humans can become complacent at a given level and not necessarily seek to rise higher. If someone is satisfied at the first four layers, under certain environmental conditions, that individual might not necessarily seek to achieve the fifth and highest layer of self-actualization, or to try and make the world into a predictable and orderly structure (cognitively and/or externally).

There are many variants of Maslow's "hierarchy", some of which try to remove the hierarchical nature, for instance, by:

1. Placing the needs side by side as continuum

extending from physiological on the right of the continuum to self-actualization on the left of the continuum

2. Placing self-actualization in the center and then evenly spacing the other needs in a circular manner around that center.

### 11.3.3 Ian Gough (2014) and Doyal

Doyal and Gough needs (depicted as a three dimensional list):

1. **Universal goals** - avoidance of serious harm; contribution, social participation, exploration.
2. **Basic needs** - survival, physical health, cognitive and emotional capacity, opportunity to participate, opportunity to contribute, critical autonomy.
3. **Universal satisfier characteristics** - nutrition, water, shelter, non-hazardous environment, safety (birth and childbearing), appropriate health care.

A conceptual bridge be built to link basic needs and specific satisfiers using the idea of 'universal satisfier characteristics'. If we define 'satisfier characteristics' as that set of all characteristics that have the property of contributing to the satisfaction of our basic needs in one or any context, then we can in principle identify a subset of universal satisfier characteristics (USCs): those characteristics of satisfiers which apply to all human contexts. USCs are thus those properties of goods, services, activities and relationships which enhance physical health and human autonomy in all societies. For example, calories a day for a specified group of people constitutes a characteristic of (most) foodstuffs which has transcultural relevance.

*NOTE: The concept of human need, and thus demand, must open to continual improvements in understanding; for example, advances in the biomedical understanding of health and disease.*

The universal goal for all individual humans together in society is:

- Minimally impaired social participation.

The basic human needs (core universalizable goals of human action) are:

1. Physical health/survival (health of body; organismal conscious).
2. Autonomy (critical autonomy, critical participation, integration, and contribution states).

The universal satisfier characteristics (a.k.a., intermediate needs) include:

1. Nutritional food and clean water.
2. Protective housing.

3. Non-hazardous living and work environments.
4. Safe birth control and child-bearing.
5. Appropriate health care.
6. Significant primary relationships.
7. Security in childhood.
8. Physical and economic security.
9. Appropriate education.

*\*Note here that the first six contribute, in part, to physical health, and the last five contribute, in part, to autonomy.*

Societal pre-conditions for need satisfaction are:

1. Universal pre-conditions:
  - A. Reproduction.
  - B. Production.
  - C. Cultural transmission (information sharing).
  - D. Political authority (State only).
2. Pre-conditions for optimization:
  - A. Freedom from civil and political rights (in market-State, this precondition means having rights; versus, in community, this precondition means freedom from coercion and authority where rights are given, taken away, and enforced by the authority).
  - B. Freedom to access to need satisfiers (in market-State, this precondition means having rights to access need satisfiers).
  - C. Contribution (in market-State, this precondition political participation).

#### 11.3.4 Martha Nussbaum (2000)

Nussbaum (2000) identifies needs as central human functionings and human capabilities (a.k.a., central capabilities (depicted as a list of capabilities, the "capability approach" (a.k.a., capability model, a functional -capability model).

The central human capabilities are:

1. **Life:** Being able to live to the end of human life; not dying prematurely or before life is not worth living.
2. **Bodily health:** Being able to have good health, including reproductive health; being adequately nourished; being able to have adequate shelter; being able to function well psycho- and physiologically to the end of life; having the ability to restore health after incidents occur.
3. **Bodily integrity** (similar to Gough's need for bodily health): Being able to move freely from place to place; being in safe social environmental conditions, high confidence that assault is unlikely.
4. **Senses, imagination, thought:** Being able to use the senses; being able to imagine, to think, and to reason - and to do these things in a way informed

and cultivated by an adequate education; being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech and freedom of religious exercise; being able to have pleasurable experiences and to avoid non-beneficial pain.

5. **Emotions:** Being able to have attachments to things and persons outside ourselves; being able to love those who love and care for us; being able to grieve at their absence; to experience longing, gratitude, and justified anger; not having one's emotions developing blighted by fear or anxiety.
6. **Practical reason:** Being able to form a conception of the good and to engage in critical reflection about the planning of one's own life.
7. **Affiliation** (similar to Gough's need for autonomy): Being able to live for and in relation to others, to recognize and show concern for other human beings, to engage in various forms of social interaction; being able to imagine the situation of another and to have compassion for that situation; having the capability for both justice and friendship. Being able to be treated as a dignified being whose worth is equal to that of others.
8. **Other species:** Being able to live with concern for and in relation to animals, plants, and the world of nature.
9. **Play:** Being able to laugh, to play, to enjoy recreational activities.
10. **Control over one's environment:** Political: being able to participate effectively in political choices that govern one's life; having the rights of political participation, free speech and freedom of association; (b) Material: being able to hold property (both land and movable goods); having the right to seek employment on an equal basis with others.

These central capabilities provide a basis to define universal material requirements for human flourishing, if it can be established that these requirements are instrumental and essential. (Nussbaum, 2000)

The "capability approach" purports that freedom to achieve well-being is a matter of what people are able to do and to be, and thus the kind of life they are effectively able to lead. The capability approach focuses directly on the quality of life that individuals are actually able to achieve.

This quality of life is analyzed in terms of the core concepts of functionings and capability:

1. **Functionings** (comparative quality of life) - states of 'being and doing'.
  - A. Being well-nourished (or not).
  - B. Having shelter (or not).

- C. Having access (or not).
  - D. Having opportunities (or not).
  - E. Feeling positively (or not).
2. **Capability** (theorizing about "justice") - the set of valua[-able] functionings that a person has [effective] access to. A person's capability represents the [effective] freedom of an individual to choose between different functioning combinations of a given environment – between different kinds of life [experience] – that the individual has reason, or not, to value. Having data on, and an awareness of, one's abilities is likely to optimize functionings related to particular aspects of [high-]life [value]; for example, the capabilities of literacy, health, or social coordination at the macro-scale; and, at the micro-scale, such activities as tennis, typing, meditation, and tool use.

**NOTE:** *Functionings should be distinguished from the processes (methods and/or technologies) employed to achieve them (as 'bicycling' is distinguishable from 'possessing a bike', or 'cultivating' is distinguishable from 'having nutritious food').*

Capabilities are:

1. What people are doing. These are currently active capabilities.
  - A. Current doings.
    1. For example, the market-State socio-economic system is what people are doing in the early 21st century.
2. What people can do. These are currently unused capabilities.
  - A. Could do currently, but are not doing currently.
    1. For example, modern 21st century humans have the capability, but unused, to significantly reduce and remove pollutants in their environment.
3. What people are capable of (have the potential to) do. These are potential capabilities given activities that move people from current to some desired future state.
  - A. Have potential to currently do.
    1. For example, modern 21st century humans have the potential to live and operate a community-type socio-economic system (representing a higher potential for human capabilities than the market-State).

**NOTE:** *Self-direction in an environment of high ability necessitates self-response-ability, and self-response-ability necessitates an environment of autonomy to sense, integrate, and express the response-ability.*

There exist important relationships that the "capability approach" identifies [adapted herein and significantly changed] (Sen, 1999:70-71):

1. **Individual physiology:** such as the variations associated with illnesses, disability, age, and gender. In order to achieve the same functionings, people may have particular needs for non-standard services/objects – such as prosthetics for a disability – or they may need more of the standard services/objects – such as supplementary food in the case of intestinal parasites. Note that some of these disadvantages, such as blindness, may not be fully 'correctable' even with tailored assistance.
2. **Local environment:** a complex such as biospheric elements as climate, epidemiology, and pollution. These can impose additional material output connection; such as, more or less resource usage for heating or clothing requirements.
3. **Variations in social conditions:** such as the provision of public/community services; including, but not limited to: education and security, and the nature of community life, technological, and exploration activities.
4. **Integration modeling:** The social, integrated understanding of how working together toward a unified and mutually beneficial operationalization of society. For example, a cooperative societal InterSystem team. An information system working group. An operational Habitat InterSystem team.
5. **Decision support operationalization (differences in relational perspectives):** accounting for differences in regional sub-community decisioning ("perspectives"). Local environments, constructions and customs are highly likely to determine each individual habitat's (i.e., individual city, or region of cities) social requirements of expected standards of behaviour and consumption, given the optimization of mutually planned fulfillment, flourishing, and well-being. For example, local requirements of 'the ability to appear in public without 'shaming' (by the social) or prison (by the State); or, to a lesser extent, in terms of acceptable clothing, which may vary widely between cities, both upon personal as members of the Habitat InterSystem teams, and at the socio-personal explorational level of society.

A capability approach [model] that accounts for well-being has to be assessed in terms of the freedoms and opportunities "to be" and "to do" what people have reason to value. Thus, human development is defined as the process of extending the real freedoms that people enjoy (i.e. enhancing people's capabilities) to all humans globally, through planning, coordination, and socio-technically contributed support.

Capabilities are the collection of functioning available to people. Functioning are beings, doings, etc. There are sets of functionings. Importantly, capabilities correspond to the various options (within a given environment) that a person can choose (their 'decision space'), according to his or her values, in order to achieve expected life-styles (as described by the lifestyle system specifications). Capabilities are composed of a group of achievable functionings. Functionings can be basic/elementary (i.e. related to life, such as nutrition) or more complex, such as contribution to a habitat InterSystem Team and having high self-esteem and high self-direction.

**INSIGHT:** *There are a set of values that all humans value together, and all humans together have reasons to value. What there is to value, there is reason (rationale) to value.*

Functionings (information and conditions) and satisfiers (materials and services) are the basis of human well-being. In part, capabilities are experienced as freedom of choice in a given environment (potential functionings/satisfiers) and needs account for well-being satisfaction (achieved functionings/satisfiers).

One view of sustainable human development is: the improvement of people's capabilities to adequately satisfy/fulfill their fundamental needs via self-capability, while simultaneously integrating the equitable distribution of socio-technical capabilities among the population, ensuring transmission of freedom of choice of and in materiality, and condition, across generations.

### 11.3.5 Erich Fromm

It must be noted that Erich Fromm, one of the early influential researchers on a human perspective of human nature and human need, maintained the understanding that there were two basic character orientations of the self, that of selfishness and altruism. Erich Fromm believed that pursuing a viable future for people and their world depended on reversing the powerful socially encouraged tendency (i.e., destructive incentives & structure) toward selfishness evident throughout the 'advanced' (post)industrial capitalist world. This, he argued, called for renouncing ways of life lived under the "having" mode of existence and moving progressively toward ways of life lived under the "being" mode of existence. Fromm claimed that it was being (and altruism) that are the only option that enables self-actualization, fulfillment, and abiding peace. In short, we can pursue unity through being with ourselves, with others, and with nature. Erich Fromms perspective is summed up nicely in the following quote:

*"Humans are rational creatures, with a reasoning faculty to express and actualize. In processes of affirming this capacity by knowing because we are 'moved' to know something, we authentically express who and what we are as a species. We actualize or realize what in a deep sense we are. This is compatible with all people*

*doing the same thing and with individuals collaborating with one another in expressing what they are. Living as humans becomes the major end in itself, and this option is open to all. In the having mode, by contrast, there is no need at all to affirm our being in the process of acquiring knowledge. Moreover, knowledge readily becomes a resource that we can use to advantage ourselves over others. The point of one person knowing in the having mode may be precisely to prevent others knowing or getting access. Knowing becomes competitive, exclusionary, and divides people into 'haves' and 'have-nots'. Destroying other people's knowledge or access to it can become (almost) as good as having knowledge oneself. This logic is buttressed by all sorts of mechanisms designed to discourage people from thinking they can know. Only some knowledge is 'genuine', 'legitimate', 'authoritative'. This becomes a way of robbing humans of their species capacities, by telling them they do not have them, and forcing them to acquire on a market or to 'get' the necessary training."* (Lankshear, 2003)

Fromm (1959, 2008) identified a set of basic existential psychological human needs:

1. **Relatedness** - connection and relationships through submission, power, or love.
2. **Transcendence** - life purpose and productivity.
3. **Rootedness** - feeling connected, family.
4. **Sense of identity** - awareness of self and environment.
5. **Frame of orientation** - mental model of the world.

Fromm (1959, 2008) further identified a potential for the decay or growth of human character:

1. **Negative components (decay) of human character (a non-productive orientation):**
  - A. Submission or domination (authoritarianism) - gain power-over-others to escape suffering.
  - B. Destructiveness - destruct to escape suffering.
  - C. Fixation - fixate to escape suffering.
  1. Exploitation - is more concerned with receiving than giving, and is not concerned that everyone has sufficient.
  2. Hoarding - is more concerned with obtaining and storing than using in common.
  - D. Adjustment to a group (conformity) - become what others desire to escape suffering.
  - E. Irrational goals - develop irrational goals to escape suffering.
2. **Positive components (growth) of human character (a productive orientation):**
  - A. Love - harmonious interconnection between the self and others (connectedness, "biophilia").

1. Biophilia refers to the 'self' direction of an organism who naturally needs to emotionally affiliate/connect with the biophysical environment. (Gunderson, 2014:187)
- B. Creativeness - exploration.
- C. Wholeness - understanding and interconnection.
- D. Individuality - self-directed, self-productive.
- E. Rational goals - develop rational goals that facilitate fulfillment.

Fromm argued that love of life and living beings will not become the prevailing character structure until society is capable of meeting three prerequisites for human flourishing (three social conditions that must precede the unfolding of love) (Gunderson, 2014):

1. **Security:** Society must develop a socioeconomic system capable of meeting basic human needs. In the early 21st century, the vital needs of every human being could be met but are not. The absence of a scarcity of human [economic] need fulfillment is a prerequisite for a "dignified life".
2. **Justice:** Injustice takes place when any person or group is used as a means for another person's or group's ends. Justice must precede biophilia as exploitation distorts and stunts the development of primary potentialities.
3. **Freedom:** Develop essential human capacities and participate in society in a meaningful, non-alienating, and productive way.

### 11.3.6 Manfred Max-Neef (1989-1991)

Max-Neef (1989) proposed a matrix of interrelated needs, in which, human (axiological) needs (a.k.a., axiological categories) encounter four existential categories that define humans as a whole.

**INSIGHT:** *A lack of fulfillment results in basic anxiety.*

The existential needs (of consciousness; typology of satisfiers) is based on an existential categorization by Max Neef of:

1. **Having (things, objects)** - person's life lies in accessible things ("possessions"), in the things s/he has access to and/or owns.
  - A. Here, what satisfies is having access to what is physically needed.
2. **Being (qualities, self)** - person's life lies in what they are (character, interests, values, etc.), not in what material things they have access to.
  - A. Here, what satisfies is having a real-world, positive and growth orientation.
3. **Doing (actions, activities)** - persons life lies in what they do habitually, as a lifestyle, to be

- productive, and as a life purpose.
- A. Here, what satisfies is education, exploration, contribution, and leisure; having a life purpose and doing things habitually to fulfill one's needs and the needs of others.
4. **Interacting (settings, environment)** - person's life lies in their relationships to other humans and to their material environment.
  - A. Here, what satisfies is having loving relationships and a harmonious and aesthetic physical environment where need fulfillment is satisfied and self-growth is a potential.

The axiological needs (axiomatic-logic of needs; typology of needs is based on nine values by Max Neef, 1991) - Human needs (i.e., aspects of human needs) include:

1. Subsistence: intactness, arrangement, intake, waste, movement, temperature, receptivity, adaptability, growth, will to live.
2. Protection: maintain physical subsistence, maintain mental & emotional well-being.
3. Affection: pleasure, trust, loyalty, respect, beauty, meaning.
4. Participation: receiving, giving.
5. Understanding: perception, cognition, emotion, reflex.
6. Creation: transform matter, transform symbols, procreate.
7. Leisure (idleness): catharsis, revitalization. Identity: physical disposition and appearance, personality, past experience, aspiration.
8. Freedom: choice, value.
9. Transcendence: affirmation of life, overcome meaninglessness.

*Note: Because development is about the qualitative growth of people, and not the quantitative growth of real objects (or abstract concepts reified), Max-Neef does not focus on objects per se. Objects and artefacts facilitate ways of being, doing having and interacting and increase or decrease the efficiency thereof.*

Manfred Max-Neef needs (usually depicted in the shape of a wheel (Max-Neef, 1992):

1. Water.
2. Food.
3. Fuel.
4. Shelter.
5. Protection.
6. Affection.
7. Participation.
8. Understanding.
9. Creativity.
10. Identity.

## 11. Transcendence.

*All exist within family, wider community, region, nation, biosphere.*

Manfred Max-Neef (1990) needs and satisfiers (usually, depicted as a table, a matrix of needs and satisfiers):

### 1. Needs according to:

#### A. Axiological categories (value categories):

1. Subsistence.
2. Protection.
3. Understanding.
4. Participation.
5. Leisure.
6. Creation.
7. Identity.
8. Freedom.

#### B. Existential categorises (modalities of being categories):

1. Having (things).
2. Being (qualities).
3. Doing (actions).
4. Interacting (set and setting).

Max-Neef makes a further extremely useful contribution by classifying satisfiers with regard to their utility. Satisfiers have different characteristics; they can be positive or negative. Destroyer satisfiers address one need but end up destroying others. Pseudo-satisfiers only promise to fulfil needs. Inhibitors satisfy one need while inhibiting others. Singular satisfiers meet one need while ignoring others. And, synergistic approaches not only satisfy one need but lead to the satisfaction of others. Manfred Max-Neef's (1990) five classes of satisfier (usually, depicted as a list, a tabular row of characteristics; needs according to satisfier type):

1. Violators and destructors of need satisfaction - these are claimed-supposed satisfiers, but are actually, violators and destructive structures, mostly connected with 'protection'-[oriented behaviors], and a feeling of fear and of lack of belonging. When 'protection' becomes the need to be satisfied without human context (e.g., through exile, censorship, bureaucracy, authoritarianism, profit maximization, arms racing, etc.), then any number of other (real-world, human) needs (e.g., subsistence, understanding, affection, participation, leisure, freedom, etc.) become impaired in their satisfaction. Here there are 'protection' enforced satisfiers.
2. Pseudo-satisfiers - these are claimed-true satisfiers, but are actually, elements [in the real-world] that stimulate [in "me"] a false sensation of satisfying a given real-world need.
3. Singular satisfiers - these are singular satisfiers

and are those which aim at the satisfaction of a single need and are, therefore, neutral as regards the satisfaction of other needs. They are very characteristic of development and co-operation schemes and programmes.

4. Synergistic (synergic) satisfiers - are those singular to complex of satisfiers that by the way they satisfy a given need, stimulate and contribute to simultaneous satisfaction of other needs. Here, there is a tabular [row] matrix of the categories of:
  - A. Satisfier (e.g., breastfeeding, education, air, buildings, etc.).
  - B. Need (e.g., subsistence, understanding, participation, leisure, etc.).
  - C. Needs whose satisfaction the prior need stimulates (e.g., any of the other needs not in category 2, etc.).

In working with the classifications in the field it has sometimes been effective to simplify the concept to three classes:

1. Positive satisfiers.
2. Negative satisfiers.
3. False satisfiers.

Max-Neef (1991) developed a 36-cell matrix, filling each cell with satisfiers (McGregor, 2010). Max-Neef proposed a process (called "satisfiers" or "strategies") that people can use to meet these nine needs. Strategies are cultural, contextual, specific, and negotiable.

What determines people's quality of life?

- Quality of life depends on the possibilities people have to adequately satisfy their fundamental human needs.

What are those fundamental needs and /or who decides what they are?

- Satisfaction of fundamental human needs is for Max-Neef the definition of quality of life.

Max-Neef does not model needs by recognizing basic needs and a hierarchy of needs. Max-Neef does differentiate between needs and satisfiers.

1. Needs are interrelated and interactive. In the same way there is no one-to-one correspondence between needs and satisfiers.
  - A. Need refers not only to deprivation but also to potential. Because of his view of needs as deprivation and potential Max-Neef uses the term actualize instead of satisfy.
2. A satisfier may satisfy various needs at once while one need may require more than one satisfier in

order to be met.

- A. A satisfier is a way of being, doing, having (in the sense of social institutions) or being situated (in time and space) that people use to actualize their needs. Satisfiers are ways of being, doing, having and interacting that contribute to the actualization of needs.
- B. A satisfier is the way in which a need is expressed, and goods are the means by which individuals apply the satisfiers to meet their needs.

In community, [habitat] services are the means by which individuals coordinate the production, distribution, and cycling of satisfiers to meet their needs.

### 11.3.7 Integration between Maslow and Max-Neef

Maslow and Max-Neef are two well known contributors that added context to human [re]-understanding of life's needs. Maslow (1943) proposed that the closer to a basic need an act or desire is, the more important it is. However, the hierarchy and the grouping are not rigid:

1. Elements on the pyramid can be swapped depending on culture, religion, etc.
2. Full satisfaction of a level is not necessary so that a human seeks and gets satisfaction of higher level needs. In the same article Maslow also identifies the preconditions that are needed for the basic need satisfaction, for example, freedom to speak, justice, or fairness.

In studying accounts of peak experiences, Maslow (1998) identified a manner of thought he called "Being-cognition" (or "B-cognition", which is holistic and accepting, as opposed to the evaluative "Deficiency-cognition" or "D-cognition") and values (not specifically virtues) he called "Being-values" (B-values). Maslow listed the B-values, which were present in manners of thought that led to peak experiences, as (14 total, including the following most relevant):

1. Wholeness - unity, integration, tendency to oneness, interconnectedness, simplicity, organization, structure, dichotomy-transcendence, order.
2. Perfection - necessity, just-rightness, just-so-ness, inevitability, suitability, justice, completeness, oughtness.
3. Completion - ending, finality, justice, fulfillment, finis, and telos, destiny, fate.
4. Self-sufficiency - autonomy, independence, self-determining.

Alderfer (1969) grouped the five categories of Maslow's

eight needs into three:

1. Existence, which combines Physiological and Safety needs.
2. Relatedness, which combines Interpersonal Love and Esteem needs.
3. Growth, which combines Actualization and Self-Esteem needs.

Huitt (2007) reorganized Maslow's eight needs into three levels:

1. Self existence.
2. Relatedness to others (personal identification with groups and significant others).
3. Growth (of self-knowledge, competencies, character and relationships to the unknown and unknowable).

Burns (1989) distinguished higher order human needs from survival needs, identifying the higher order needs of:

1. Survival needs.
  - A. Food, shelter, water, etc.
2. Higher order needs\*.
  - A. Sensation: The biologically-based need for sensation.
  - B. Uniqueness: The acculturation-based need for uniqueness.

*\*Neither of two higher-order needs are crucial to survival (like food, shelter and water), yet they do influence people's behaviour directed towards experiencing variety, novelty and complexity (sensation) and being different from others (uniqueness).*

To continue existing in society, a person shall have all possible services available to fulfill their life, technology, and exploratory needs. Max-Neef and Doyal & Gough justify a material basis for a 'basic minimum', through the notion of satisfiers of (or intermediate) needs, which are essential preconditions to meet basic needs. Both Max-Neef and Doyal & Gough delineate universal satisfiers from context-specific satisfiers in principle, but they give limited attention to concretely defining universal satisfiers. Doyal and Gough define all intermediate needs as having to fulfill the requirement that their lack can lead to a sustained degradation of people's basic human needs, which they define as physical health and critical autonomy.

Sound physical health is interpreted as freedom from chronic disability, disease, and impairment of cognitive function. Autonomy reflects the ability to learn, work, engage in and reflect on culture, and enjoy leisure. Wiggins (1998) also describes absolute needs as having to meet the test of being necessary and sufficient to avoid serious harm. Doyal & Gough's categories of physical

health and autonomy as directly parallel to the physical and social well-being related capabilities described above. Furthermore, the notion of harm avoidance is helpful to identify risks to well-being and the material conditions that can mitigate them.

Max Neef envisioned a matrix in which human (axiological) needs mesh with the four existential categories that define humans as a whole. Human needs satisfaction is then facilitated by the achievement or provision of a combination of satisfiers that are related to each existential category. In Max-Neef's proposition axiological categories are not hierarchical. By describing needs satisfaction in systems theory terms, Max-Neef deals with the problem of Maslow's hierarchy. He goes on to address the issue of whether needs are universal, or culturally relative and states something like, "Fundamental human needs are finite, few and classifiable. Human needs (such as those contained in the system proposed) are the same in all cultures and in all historical periods. What changes, both over time and through cultures, is the way or the means by which needs are satisfied."

Max-Neef further claimed that:

1. All human needs are necessary, and all are equal.  
Any need that is not satisfied reveals a human poverty, a compromise to a desirable human condition.
2. All needs can be satisfied at different levels, and with different intensities, and that needs can be satisfied at the level of the individual, the social group, or the environment (Alkire, 2002).

Human needs satisfaction is then facilitated by the achievement or provision of a combination of satisfiers that are related to each existential category. In Max-Neef's proposition axiological categories are not hierarchical and their relative priorities depend on culture and groups.

It may be possible to map a Max-Neef's type of classification of human needs to a classification of requirements. Requirements in artificial and man-made systems have strong mapping to human needs, and therefore a model inspired by human needs can be of immense use in categorizing requirements in man-made systems. It may be possible to organize requirements following Max-Neef's proposition of existential categories and grouped according to their value to stakeholders.

Axiological needs ensure user needs (and consequently requirements) do not have uniform value. Under these terms, human needs are reflected by user values or need levels, existential categories are reflected by the types of requirements that completely define a system, and satisfiers are reflected by system requirements placed upon it by the user.

Max-Neef proposed a framework, designed for utility (to put 'needs' into operation) rather than continue the

study of prove human-ability. Max-Neef proposed a framework (a schema) that offers two types of needs: 'existential', and 'axiological', which can be arranged in a matrix, allowing for a visualization of the relationship of complex of need-satisfiers. The axiological needs are (the modalities of life: being, having, doing, interacting. In the matrix, the existent[ial] needs are: subsistence, protection, affection, understanding, participation, idleness (leisure, sleep, relaxation), creation, identity, and freedom. Note that one of the meanings of idleness is "the quality or state of being lazy", which is not the intended meaning herein. This matrix allows for the formulation of fundamental analytical frameworks (such as, statistical mathematics) upon the results of a series of questions (decision inquiries) to compute various commands (operations/decisions); the most significant being the decision system's 'effectiveness inquiry threshold supra-inquiry, which could include, What habitat- and social-structures will provide for, or support the satisfied degree of fulfillment of:

1. Being-identified (recognition).
2. Having-subsistence (food, water, shelter, etc.).
3. Having-technicians (technical system access justice, fairness through coordinated planned of global access collaboration and distribution).
4. Doing-participative things (whole InterSystem Team contribution network).
5. Interacting-affectionately (global and local social group activity).

If one were to propose the application of Max-Neef's need framework to incoming orientees (or potential orientees), then it could be proposed in full an used for purposes of diagnosis, planning, assessment and evaluation. The matrix of needs and satisfiers may serve, at a preliminary stage for each individual (often in childhood), as a participative exercise of self-diagnosis. In community, the young through a process of what amounts to regular dialogue gradually begin to characterize themselves by identifying their personal interests and identifying the contribution points [on the InterSystem Team] where they feel the most passionate [or not]. The outcome of the experience of being on or being mentored on an InterSystem Team will enable the individual to become aware of both its deprivations and potentialities. Which, for the individual orientee (of the sub-type other societal mentee), may relax the market-State abstraction filter (so well visualized in the film), and, 'authority' in general, can be seen for what it is; in order to visualize that which is Community more clearly in the now.

**NOTE:** Today, information systems, including space agency information systems and sporting information systems, and medical information processing centers, hold significant data, from a significantly wide array of scientific studies and observations, into what humans require to be,

*live, and perform optimally.*

Max-Neef sets out "to make a theory of human needs understandable and operational for development". Every need, with its different aspects, has dimensions - like the temperature range that constitutes thermal comfort, or hormetic challenge. Designs features are best oriented toward these constituents. The dimensions of needs and the current satisfiers determine a set of requirements for their satisfaction. A non-hierarchical view of human needs means that one does not think of a house as a mere physical shelter but as a synergic satisfier that influences the satisfaction of all human needs. Here, 'being' is a description of the abstract value of a need. For example, within the Max-Neef matrix, the cell corresponding to 'doing-participation' might contain 'learning or discovering' as a satisfier, whereas 'doing-contribution' might contain 'InterSystem Team work'. The cell 'having-protection' might contain a dwelling. The axiological need of 'interacting' refers to the places and ways in which humans come together in society in order to have needs satisfied. Therefore, the cell for interacting-understanding might have an information system with a learning sub-application. In the market-State, the being-identity cell could contain membership in a gang or cult, which anticipates (or recognizes) the criticism that some satisfiers of needs are associated with creating conflict rather than resolving it.

Max-Neef doesn't propose it, and I wouldn't know how to draw it, but a multidimensional matrix might incorporate his assertion that needs can be satisfied in (at least) three contexts:

1. With regard to oneself (being).
2. With regard to the social group (doing with others).
3. With regard to the environment (having an interactive environment).

### 11.3.8 Simon Hertnon (2010)

Simon Hertnon's (2010) Nautilus of needs (usually, depicted in the shape of a spiral):

1. Existence.
  - A. Physical well-being.
2. Survival.
  - A. Mental well-being.
  - B. A safe and healthy environment.
  - C. Reproduction or limiting reproduction.
3. Happiness.
  - A. More respect from others.
  - B. More self-esteem.
4. Betterment.
  - A. Appreciation of 'life' and all that you have.
5. Contentment (and ongoing survival of species).
  - A. Doing good deeds (helping others to satisfy their unmet needs).
  - B. To understand the nature and purpose of

human life.

### 11.3.9 Qizilbash (1996)

The idea of prudential values include:

1. Certain, at least, minimal levels of health, nutrition, sanitation, shelter, and security.
2. Certain, at least minimal, capacities, including (a) literacy and (b) certain basic intellectual and physical capabilities.
3. Self-respect and aspiration.
4. Positive freedom or autonomy [of choice].
5. Negative freedom or liberty [from coercion].
6. Enjoyment.
7. Understanding or knowledge.
8. Significant relations with others and some participation in social life.
9. Accomplishment (the sort of achievement that gives life point and weight).

### 11.3.10 Narayan (1999)

The idea of 'social capital', in a market-State, is sometimes substituted for 'need'. The dimensions of social capital (Narayan, 1999):

1. Structural dimension - explains how people can obtain certain advantages through the use of personal contacts within the structure of social interactions.
  - A. Bonding.
  - B. Bridging.
  - C. Linking.
  - D. Corporate.
2. Relational - relationships built by people through a continuous series of interactions.
  - A. Knowledge-based trust.
  - B. Trust political institutions.
  - C. Trust public services.
  - D. Safety.
  - E. Tolerance and social sanction.
  - F. Generalized reciprocity.
3. Cognitive - resources that have a common code or a shared paradigm that facilitate a common understanding of collective goals and appropriate ways of acting in a social system.
  - A. Community cohesiveness.
  - B. Civicness (volunteering, helping others).

A second view on the dimensions of social capital (Yilmaz, 2012):

1. Group characteristics:
  - A. Number of members.
  - B. Frequency of participants.
  - C. Membership heterogeneity of purpose.

2. Generalized norms:
  - A. Helpfulness of people.
  - B. Trustworthiness of people.
  - C. Fairness of people.
3. Togetherness:
  - A. How well people get along.
  - B. Togetherness of people.
4. Everyday sociability:
  - A. Everyday sociability.
5. Neighborhood connections:
  - A. Asking for help.
6. Volunteerism:
  - A. Help others for their work.
7. Trust:
  - A. Trust people in neighbourhood.
  - B. Trust people in your team.
  - C. Trust the management.

### 11.3.11 Robeyns (2003)

The top-level capabilities include:

1. Life and physical health.
2. Mental well-being.
3. Bodily integrity and safety.
4. Social relations.
5. Political empowerment.
6. Education and knowledge.
7. Domestic work and other projects.
8. Shelter and environment.
9. Mobility.
10. Leisure activities.
11. Time-autonomy.
12. Respect.

### 11.3.12 Biggeri et al. (2006)

The top-level capabilities include:

1. Life.
2. Health.
3. Physical security.
4. Legal security.
5. Education and learning.
6. Standard of living.
7. Productive and valued activities.
8. Individual family and social life.
9. Identity, expression and self-respect.
10. Participation, influence and voice.

### 11.3.13 Goldin (2013)

The top-level dimension and components of human need include:

1. Health and basic goods - health, sanitation, water, shelter, sleep and rest, nutrition.

2. Education and literacy - basic minimum level of literacy and education, indigenous knowledge, a priori learning.
3. Certain basic mental and physical capabilities - innate capabilities that can be enhanced or undermined by the state.
4. Self-respect and aspiration - feeling good, feeling valued, having hope.
5. Autonomy and self-determination - control an individual has over his or her life.
6. Awareness - Knowing about external environment.
7. Understanding - Comprehension, knowledge.
8. Significant relations with others - Connectedness, belonging, meaning.

### 11.3.14 Gross National Happiness Index

*A.k.a., Gross domestic happiness.*

The Gross National Happiness (GNH) Index is an index composed in Bhutan to facilitate a measurement of the happiness of the overall population and to guide policy change, using the following indicators:

1. Psychological well-being.
2. Living standards.
3. Time use (& life radius).
4. Health.
5. Education.
6. Ecological resilience.
7. Community vitality.
8. Intelligence (good decisioning, good governance).
9. Cultural joy.

The concept of a 'gross national happiness' implies that human well-being should be the approach of progress. As of 2023, there 9 domains, separated into 38 sub-indexes, with 72 indicators and 151 variables. (Pillay, 2019)

### 11.3.15 U.S. National Aeronautics and Space Administration (NASA)

NASA has a list human research, factors and integration reports and standards:

1. NASA Human Research Program - there are multiple guidelines and requirements documents to design a human spacecraft and settlement.
  - A. NASA-STD3001, NASA Space Flight Human System Standards (SFHSS) consists of two-volumes that provide overarching principles applicable to all human space flight programs:
    1. Volume 1 - Crew Health. Standards needed to support astronaut health (medical care, nutrition, sleep, exercise, etc.).
    2. Volume 2 - Habitability and Environmental

Health. Standards for system design that will maintain astronaut performance (environmental factors, design of facilities, layout of workstations, and lighting requirements, for example). It includes classic human factors requirements; the chapters closely parallel those in the previous version, NASA-STD-3000.

B. NASA-STD3001 HIDH, NASA Human Integration Design Handbook - Each individual human space flight program will develop program-specific, verifiable requirements that meet NASA-STD-3001, using a companion document, the Human Integration Design Handbook (HIDH). For example, Volume 2 states that all programs shall define the user population and their size ranges, and that the design of systems shall then accommodate the full size range of those users. The anthropometric data to be used to define the potential crew size ranges will be in the HIDH. Together then, NASA STD-3001 and the HIDH provide a set of human factors engineering (HFE) principles that programs must follow as well as the information needed to derive verifiable requirements from these principles. The HIDH is divided into topic areas, which address the range of human operations in space:

1. Anthropometry and Biomechanics.
2. Human Performance Capabilities.
3. Natural and Induced Environments.
4. Architecture and Facilities.
5. User Interfaces.
6. Hardware and Equipment.
7. Facility Management.
8. Extra Vehicular Activities (EVA) .

Each of the above topic areas are to be subdivided into sections:

1. Introduction.
2. Design Considerations.
3. Critical Design Elements.
4. Example Solutions and Lessons Learned.
5. References and Background Research.
6. Research Needs.

Two primary uses for the handbook will be to:

1. Provide data and guidance for contractual program-specific human interface requirements - Users will include program managers and system requirement writers.
2. Provide data and guidance for human vehicle and system designs - Users will include human factors

practitioners, engineers and designers, crews and mission / flight controllers, and training and operations developers.

Significant NASA standards in relation to human needs include, but may not be limited to:

1. NASA/SP-2010-3407 Human Integration Design Handbook
2. NASA/NRP 8705.2B Human-Rating Requirements for Space Systems
3. NASA/JSC-64367 Exploration Life Support Baseline Values and Assumptions document
4. NASA/HRP-47052 Human Research Program (with multiple revisions)
5. NASA/HRP-47065 Human Research Program Integrated Research Plan (with multiple revisions)
6. NASA/HRP-4705 Human Research Program Requirements Document (with multiple revisions)
7. NASA/TP-2014-218556 - Human Integration Design Process (HIDP) - Health and Performance Directorate

The goal of the HRP is to provide human health and performance countermeasures, knowledge, technologies, and tools to enable safe, reliable, and productive human space exploration. The specific objectives of the HRP are:

1. Develop capabilities, necessary countermeasures, and technologies in support of human space exploration, focusing on mitigating the highest risks to crew health and performance. Enable the definition and improvement of human spaceflight medical, environmental and human factors standards.
2. Develop technologies that serve to reduce medical and environmental risks, to reduce human systems resource requirements (mass, volume, power, data, etc.), and to ensure effective human-system integration across exploration mission systems.
3. Ensure maintenance of Agency core competencies necessary to enable risk reduction in the following areas: space medicine; physiological and behavioral effects of long-duration spaceflight on the human body; space environmental effects (including radiation) on human health and performance; and space human factors.

Working group outputs (including but not limited to):

- NASA/TM-2014-217394 - 2014 International Workshop on Research and Operational Considerations for Artificial Gravity Countermeasures

### 11.3.16 Other significant contributors to the literature on human needs

Other well cited names in the literature on human needs include, but are not limited to:

*First and last name, publication date (professional identity).*

1. Paul Sites, 1973 (sociologist).
2. Johan Galtung, 1988 (sociologist and international relations).
3. John Burton, 1990 (international relations and conflict resolution).
4. Dennis Sandole, 1990 (political scientist and conflict resolution).
5. Ronald Fisher, 1990 (psychologist).
6. James C. Davies, 1988 (psychologist and political scientist).
7. Christian Bay, 1988 (economist).
8. Chris Mitchel, 1990 conflict resolution).
9. Ed Azar, 1978 (international relations and conflict resolution).

## 11.4 Human needs list: Orientation-modality (human consciousness triality) view

*A.k.a., The three modalities, the triality of consciousness, the triality of conscious form.*

There appear to be three states, dimensions, or modalities that compose human life experience. A human consciousness is experiencing behavior through accessible resources. Humans are individuated units of consciousness, subjects, that feel definable states of being (e.g., happiness, sadness, etc.). As individuated units of consciousness inhabiting physical bodies that effect within an environment, each body has access to a set of definable resources. Simply, humans feel their being, they do their behaviors, and they have access to resources and resource compositions (i.e., technologies). For a social population of individuals to take control of their direction it is essential for them to realize that there are at least three perspectives that must be integrated at once in order to sustain mutual coordination. Individuals come together within an environment where behaviors are expressed and access to resources increases or decreases. There is no need to fear the experience of empathizing with another.

There exist three forms of intentional self-orientation that together lead to other stable forms of orientation, including the possibility for a stable social-orientation. These three forms represent the perceptual orientation of experience from which conscious existence derives its source and iterates (Read:  $\Delta T$  - changes its temporal state). Each form represent one of the first coordinated orientations of the 'intentional self' in material reality.

The three functional coordinates as representations of the orientation of the self [toward the world] are known as:

1. A state of **being** - there are being [human] needs (psychology, cognition).
2. A state of **doing** - there are doing [human] needs (contributability, contribution).
3. A state of **having** - there are having [human] needs (habitability, habitation).

There is [a being of] consciousness because there is an awareness of existence. There is a haver because there is [having] access to existence. There is a doer because there is doing (and learning) through existence. Hence, conscious existence necessarily involves the states, attributes, and forms of being, doing, and having. And, a community's socio-economic system must account for the being[ness], the doing[ness], and the having[ness] of individuated consciousness. How it defines these states will define how it perceives its orientation, and hence, orients.

If these three concepts were applied at the 3 forces model level, then being would be the activating force of will, having would be the restraining force of availability, and doing would be the reconciling force of experience through intention, which leads to adaptive integration.

**INSIGHT:** *A different way of thinking creates a different way of being, creates a different way of doing, creates a different way of having. And, a different way of having creates a different way of doing, creates a different way of being, creates a different way of thinking. Simply, all ways of orienting affect all other ways of orienting.*

### 11.4.1 A state of being

**INSIGHT:** *In a conscious information system a 'concept' represents the integration of existent mental information by an actively [pattern] integrating consciousness.*

A "state of being" describes, not necessarily an acceptance, but more of a state of mindful and perceptual engagement with oneself and one's life, with existence and with how things truly are. A state of being is a state of engagement with [the nature of] existence. Consciousness is being - doing, not doing; having, not having - consciousness is without dissonance, but may experience dissonance. A "state of being" is an initialization of the state of conscious existence through the opening of [sensory] perception [to existence] for experiential integration, decisioning, and action. Therein, organisms maintain a consciously processing decision space indicative of a "function of being".

Unity through consciousness represent a far reaching experience, and when adopted as an essential element of perspective, then it is profoundly life enhancing. Herein, appreciation uplifts consciousness and generates a

radiance in consciousness that is hard to ignore. It is the state of perception that brings regenerative and eternal joy to experience; in some of us it is a flicker of light and in others it is the light of all experience. See a flower, appreciate its beauty and receive the radiant gift of pleasant feeling.

When someone is said to be in "an aligned state of being", then they are said to be 'alive' to the world and 'authentically related' to all that it entails - directly, and as expressions of what they are as human beings. Therein, appreciation is an entirely open option for humans, and moreover, it is the only option that enables self-actualization and common human fulfillment. Our experience is that at the end of a lot of arguing and talking there is being [expressed in a diversity of forms]. Herein, beingness becomes a collapse of awareness into a point of conscious awareness of the now, of the present moment of beingness.

The act of being is itself part of what it is to become who and what "ou are. The act of having learned something first hand by experiencing it is what makes you who you are. The act of learning by life experience has sufficient value that to just have someone tell you what you should and shouldn't do is not what makes you who and what you are. Who and what you are is what you do and what you learn [along the way] from what you did. You can tell someone something, but if they don't think it is true it will fall on deaf ears. A society must let people find out for themselves, and in the act of finding out is the "lesson", not the lesson itself. It is in the moment that we are learning what it is to be alive. Life experience feeds what we are today. Life experience feeds what "I" am today. Even if "I" am steeped in ignorance at some point in time in my life.

*"As long as you are unaware of Being, the reality of other humans will elude you, because you have not found your own. Your mind will like or dislike their form, which is not just their body but includes their mind as well. True relationship becomes possible only when there is an awareness of Being. Coming from Being, you will perceive another person's body and mind as just a screen, as it were, behind which you can feel their true reality, as you feel yours."*

*-Eckhart Tolle*

#### 11.4.2 A state of having

**INSIGHT:** *In an information system, having, represents "the accessing of" information. Therein, as beingness, consciousness has thought.*

The "state of having" describes what is accessed by (or carried with) the body consciousness when it interrelates.

The "state of having" generally takes one of two forms:

1. Having coordinated and organized access, and helpful accurate tools, and therein, appreciation.

#### 2. Having ownership in defense of property.

These are essentially two different perceptual paradigms. And, they describe how consciousness interrelates with material reality. The later paradigm restricts access to resources by the obligatory exchanged acquisition of property. The former paradigm opens access to and the sharing of resources through the common organization of their access and usage. In some respects, the former is the state of having, not having (i.e., accessing); and the later represents a continuum of restriction and possession (i.e., ownership).

Herein, it is significant to recognize that what someone "has" changes their psychology. For example, wearing certain clothes changes psychology. The tools used change psychology. The structures people integrate with change their perception. Having an inflamed brain is even known to change psychology. In essence, the interface some uses influences their psychology, and hence, their behavior.

In a property-based relationship, someone's connection to themselves and the world becomes one of possessing and owning, extending to the possible point where they want to make everything and everybody—including themselves—their property. The idea of an ownership relationship involves something of a positing of those internal values and aspirations and existences within objects in the surrounding environment. Therein, the positing of values replaces the resonance of values. A harmonious interrelationship actually involves connection through resonance, and resonant values. The idea of having ownership subdivides into:

1. Possession (taking possession).
2. Ownership (having ownership).
3. Property (being property).

This ownership-type orientation results in a commercially experienced life (i.e., life composed of a series of commercial experiences in the market) versus a community experienced life (i.e., life composed of fulfilling experiences in common). This generates: Egoism and self-interest at the cost of others; Individual pursuit at the expense of others; Pursuit of self-interest with the structurally reinforced incentive for disregarding the needs of others; And, unhealthy predispositions.

A "state of having" that includes a remote process of organizing reality based upon attachment and competition, based upon property, is a very unstable and stressful state because someone is essentially investing themselves in everything other than themselves - they have identified their being with what they have. The corrupted societal philosophy that emerges from this ideology represents a natural and inevitable human orientation toward hierarchies of ownership.

From this perspective, egotism and selfish self-interest are seen as leading naturally to harmony. Each person pursuing their own interests within recognized legitimate limits in a market of selfish satisfiers (e.g.,

profit produced goods and services) that is kept as unregulated (or regulated) as possible. Some allege that this system is the best guarantee of conditions under which humans can realize their life aims. A further view accompanies this conception of the human condition. This additional view asserts that humans are "basically lazy [and] passive by nature" and that "they 'do not want to work ... unless driven by the incentive of material gain" or else "coerced by hunger or fear of pain and punishment".

Ownership is an orientation which essentially removes existence from the self and places it onto a metaphorical and very real table of things, material objects, collections that are trying to sort of help you exist, but actually don't do that at all. If someone's sense of identity, their existential identification, is based on what they has, on their possessions, if they can say they are what they have, then the question arises, what am I if I lose what I have, or if I am not what I once had? Therefore, the sense of identity based on what I have is always threatened. A person is anxiously concerned not to lose what he has because he doesn't lose just what he has, but he loses his sense of self. If I feel that I am what I have and I have nothing anymore, then I am not (i.e., I do not exist; the state of existence is negated).

*"Man is not what he thinks he is, he is what he has." [What tools he has, what needs he has fulfilled, what information he has accessible to him, what tools he has available to approach the re-orientation of his life with.]*

- French novelist Andre Morrow

#### 11.4.2.1 A state of having health

A.k.a., A state of being in health, doing things because there is health.

There is the idea of having a state (being and doing) of health, because human needs are sufficiently and appropriately met; wherein:

1. Physical health increases as individual's own needs are met.
2. Mental health increases as individual's group's needs are met.
3. Intellectual health increases as individual's community needs are met.
4. Spiritual health increases as the whole planet's needs are met.

#### 11.4.3 A state of doing

Everything you do is training; the question is, what are you training for? One thing we can surely say about homo sapiens is that they are highly adaptable. Whatever is in our immediate environment, whatever we are exposed to, whatever we do again and again, we begin adapting to, becoming better at. In this regard then, we could say that everything we do is a kind of training; everything we

do is a physiological and psychological learning session. We are constantly educating ourselves, body and mind, on how to perform. We are always adapting to that which we place before ourselves or is placed before us. Everything is training. Even those who spend their days behind a desk or operating a machine or driving a vehicle; they too are teaching themselves to perform their chosen task — in all its physical specificity — better today than they did before, better tomorrow than they did today. They are learning to increase their efficiency, to shave off the bumps and smooth out the slaloms that cause drag in the execution of their skill.

Yet, if we don't actual do anything, then we aren't actually going to learn anything or get better at anything in any way. Learning requires action, interaction and reaction; it requires experience.

Doing may involve the autonomous identification of useful patterns of information in a common reality (i.e., integration); a more complex form of which involves technologically facilitated participation in a cooperating social community. The state of doing represents the continuous emergence of a process (or set of processes) that move consciousness toward greater and lesser states of potential being -- as action, interaction, and reaction that facilitate (or otherwise structure) a higher potential state of fulfillment.

Herein, in order "to do something" there must also exist "having access to something". In order to become our more fulfilled selves we must learn through experience to that which we have access.

Through unfulfilling structures we can create own undoing. A fulfilling structure isn't just something that individuals have within them and around them (i.e., environment), it is also something they use (i.e., a functionality) and something that they ultimately become.

**QUESTIONS:** *If you are what you do, and identify and define yourself by what you do, then what happens when you stop doing it and you still are?*

#### 11.5 Human needs list: Habitation-service view

Useful design is an expression of an underlying anthropology. Architectural (Read: building design) is intimately linked to human needs (shelter/clothing in particular), and the designers understanding of human nature will largely determine the way in which s/he designs. Pauw (2004) has demonstrated that the work of an architect can be analysed in terms of its underlying anthropology and evaluated against a needs model.

A simplified view of the habitation service system is viewable from several perspectives.

1. Biological and Physiological needs - basic life needs  
- air, food, water, shelter, warmth, sex, sleep, etc.

- A. Considered a deficiency need.
- 2. Safety needs - safe designs and operations (safe standards), stability to society, certainty to fulfillment, limits to decisions, etc.
  - A. Considered a deficiency need.
- 3. Belonging and Love needs - affection, relationships, work group, etc.
  - A. Considered a deficiency need.
- 4. Esteem needs - achievement, responsibility, reputation.
  - A. Considered a deficiency and growth need.
- 5. Cognitive needs - knowledge, order to existence, self-awareness.
  - A. Considered a growth need.
- 6. Aesthetic needs - beauty, nature (in all senses), biomimetic aesthetic, form and harmony, etc.
  - A. Considered a growth need.
- 7. Self-actualization - personal growth and fulfillment.
  - A. Considered a growth need.

Habitat service support view (simplified):

- 1. Life support [material service] needs.
- 2. Technology support [material service] needs.
- 3. Exploratory support [material service] needs.
- 4. Human (social) connection needs.

Habitat service support view (simple detail)

- 1. Habitat [ecosystem life].
- 2. Hydration [life].
- 3. Nutrition [life].
- 4. Shelter [life].
  - A. Sleep.
- 5. Medical [life].
- 6. Power [life].

Habitat defense support view (simple detail)

- 1. Security.
- 2. Food.
- 3. Shelter.
- 4. Personal safety.
- 5. Air and water.
- 6. Emotional needs (connectedness).
- 7. All required for existence in defence, as in life (as in life, where 'security' becomes dormant projects 'monitoring' and energy is applied toward exploration, growth and self-expression).

### 11.5.1 Water (hydration service)

*A.k.a., Hydro service, hydrological service.*

Hydration is any source of water input for organic embodied restoration. Organisms need a source of water to live. Organisms use water, in part, as their

energy source. Organisms differ in the way they obtain water.

**Hydration > Water source [resource satisfier]** - the need for accessing water of some appropriate composition at some frequency, which are not optional:

- 1. **Required by (1st level):** Absolutely required by.
  - A. Life forms.
  - B. Habitat service system operations).
- 2. **Service layer (2nd level):** Absolutely required for.
  - A. Drinking.
  - B. Hygiene.
  - C. Life-cycling materials (HSS operations).
- 3. **Resource layer (3rd level):** Options for.
  - A. Water elements (e.g., dissolved and undissolved solids).
- 4. **Environmental layer (4th level):** Options for.
  - A. Production elements (e.g., rain encatchment, well).

Humans need water for biological functioning, organisms need water to obtain chemicals from their surroundings, break down food, grow, move substances through their bodies, and reproduce.

#### 11.5.1.1 Basic human water requirements

Humans have requirements for water with a specific composition and at a specific frequency (which will fluctuate within a range). In order for a habitat service system to fulfill individual humans' relationships with water, the following availability data must be present:

- 1. Water resource availability:
  - A. Is there water available?
- 2. Water service availability:
  - A. Is there an engineered water distribution network?
  - B. Is there an engineered water processing system for changing composition?
- 3. Water type availability:
  - A. What is the composition type of the water?

A water scarcity (fulfillment) index is a measurement of the ability to meet all water requirements for human requirements. There are multiple sub-requirements to the need for water at the population scale in a controlled habitat, and they include, but are not limited to:

- 1. **Drinking** with water for organism existence.
  - A. Survival - Non-optimal composition and frequency of water.
  - B. Flourishing - Non-optimal composition and frequency of water.
- 2. **Cleaning** with water for hygiene and sanitation
  - A. Survival - Non-optimal composition and frequency of water.

- B. Flourishing - Non-optimal composition and frequency of water.
- 3. **Cooking** with water for food preparation (nutrition).
  - A. Survival - Non-optimal composition and frequency of water.
  - B. Flourishing - Non-optimal composition and frequency of water.
- 4. **Materializing** with water for material production lifecycle (manufacturing, recycle, energy, etc.).
  - A. Survival - Non-optimal composition and frequency of water.
  - B. Flourishing - Non-optimal composition and frequency of water.

Water requirements for each water process must be defined, and may or may not include the following examples:

1. **Drinking water parameter requirements:** Data on the drinking water requirement for human survival (min, max, etc.) under a temperate climate with some activity is about  $x$  liters per person per day.
2. **Cleaning water parameter requirements (a.k.a., requirements for sanitation):** For example, taking into account various technologies for sanitation, the effective disposal of human wastes can be accomplished with little to no water, if necessary. Or, given conditions and decisions, data on the water requirements for cleaning.
3. **Bathing water parameter requirements (a.k.a., hygiene water):** Data on the amount of water needed for complete fulfillment of the water-type need for bathing, per person per day.
4. **Basic requirement for food preparation:** Data on the water needed for food preparation to fulfill human nutritional needs is  $x$  liters per person per day.

**NOTE:** *Data must account for water composition and usage.*

## 11.5.2 Atmospherics and geospherics

**CLARIFICATION:** *Atmospherics (Read: air/space around a sphere to move through) refers to that which is in the atmosphere above [walking] surface-ground. Geospherics (Read: surface of sphere to walk/move on) refers to land or some other walkable surface.*

The atmosphere provides breathable and liveable air. There is a global, biospheric atmospheric and geospheric service. Then, there are atmospheric and land (geo) changes to where a city exists. Then, there are atmospheric and land (geo) changes to where buildings exist.

- 1. **GeoInformatics** (land analytics; "geospherics") - Surface composition; land, ship.
- 2. **AtmoInformatics** (atmosphere analytics; "atmospherics") - Quality of composition; understanding and planning.
- A. Open space?
  - 1. Somatic (hearing, sight, olfactory, dermal, electromagnetic)
  - B. Natural light?
  - C. Close and far sight observation throughout some natural cycle?

## 11.5.3 Food (nutritional service)

*A.k.a., Cultivation service.*

Food is any source of nutrient input for organic embodied restoration. Organisms need a source of energy to live. Organisms use food, in part, as their energy source. Organisms differ in the way they obtain energy.

**NOTE:** *Autotrophs use the food they make to carry out their own life functions. Organisms that cannot make their own food are called heterotrophs. Hetero- means "other." Humans are heterotrophs, given what is known. Heterotrophs obtain their energy by feeding on others (other organic and in-organic). Some heterotrophs eat autotrophs and use their energy. Other heterotrophs consume other heterotrophs that eat autotrophs. Humans are "omnivorous", in that require both (given what is known).*

**Food > Nutrient source [resource satisfier]** - the need for accessing food of some appropriate composition at some frequency, which are not optional.

1. **Required by (1st level):** Absolutely required by.
  - A. Life forms.
2. **Service layer (2nd level):** Absolutely required for.
  - A. Eating.
3. **Resource layer (3rd level):** Options for.
  - A. Food elements (e.g., need for one carrot; many genetics + growing conditions will produce a carrot with different micro-nutrient, macro-nutrient, and energy density measurements. Measured in nutrient and vitamin yield.
4. **Environmental layer (4th level):** Options for.
  - A. Production elements (e.g., need for land and technology to cultivate carrots).

## 11.5.4 Shelter (architectural service)

*A.k.a., Accommodations service, building service, structural service, erectors service.*

Shelter is any source of architectural input for organic embodied protection. Organisms need a source of

architecture to live. Organisms use architecture, in part, as their energy source. Organisms differ in the way they use shelter. Shelter from the elements and noxious animals and insects with means to freely function, and improved by conveniences.

#### **Shelter > Architecture source [resource satisfier]**

- the need for accessing shelter of some appropriate composition at some frequency, which are not optional.

1. **Required by (1st level):** Absolutely required by:
  - A. Life forms.
  - B. Habitat service system operations).
2. **Service layer (2nd level):** Absolutely required for:
  - A. Inhabiting (buildings).
3. **Resource layer (3rd level):** Options for:
  - A. Inhabiting elements (e.g., buildings involve materials and construction).
4. **Environmental layer (4th level):** Options for:
  - A. Production elements (e.g., land or other buildings).

##### **11.5.4.1 Sleep (dwelling service)**

#### **Sleep environment > Habitation source [resource satisfier]** - Need for safe sleep cycle environment.

1. **Required by (1st level):** Absolutely required by:
  - A. Life forms.
2. **Service layer (2nd level):** Absolutely required for:
  - A. Rebuilding body for another cycle.
3. **Resource layer (3rd level):** Options for:
  - A. Bedding (including bed and cloth, and room, ambiance).
4. **Environmental layer (4th level):** Options for:
  - A. Complete darkness (the absence of artificial lights bleeding into the sleeping environment).

#### **11.5.5 Medical (medical service)**

*A.k.a., Lifeform restoration service, life-form restoration service, hospital service, safety service, life emergency service.*

People are injured and/or get sick for two reasons:

1. Acute injury, and/or
2. The body is missing something that it needs. Take good nutrition in, and/or
3. The body is exposed to something that it doesn't need. Do not expose yourself to toxins that will weaken you.

Herein, what is generally understood by mental health, however, is negative, rather than positive; the absence of sickness, rather than the presence of well-being. Herein, hygiene is to some relative degree an action that reduces the incidence of medical disease. Medical

services exist to discover and treat injuries, and educate about human bio-physical optimization. The body (and mind) is regenerative by nature. Optimization of biological systems is likely to reduce injury and disease.

#### **11.5.6 Energy (power service)**

Organisms need a source of energy (power) to live, to do work, for light, and for heat. The primary sources of energy for the Earth are the sun and the materially layered composition of the Earth itself. The first forms of power technologies were mechanical. The second form of power is, mechano-electrical.

#### **Definition: Energy > Power source [power resource satisfier]** - Need for accessing local electromagnetic energy of some appropriate composition at some frequency, which are not optional.

1. **Required by (1st level):** Absolutely required by:
  - A. Life forms.
  - B. Habitat service system operations.
2. **Service layer (2nd level):** Absolutely required for:
  - A. Energizing (powering).
3. **Resource layer (3rd level):** Options for:
  - A. Energizing elements (e.g., fire, electricity, mechanical pressure).
4. **Environmental layer (4th level):** Options for:
  - A. Production elements (e.g., wood and twine, solar power).

#### **11.6 The universal set of human needs [list]**

In community, there are fulfillment opportunities in the domains of:

1. Personal growth.
2. Life, technology, and exploratory physical habitat services.
3. InterSystem team contribution.
4. Education.
5. Leisure.

#### **11.6.1 Universal goals in the context of human need fulfillment**

The universal goals of human need fulfillment include:

1. Minimally impaired social participation (cooperation of information and sharing of common resources).
  - A. Maximum technical efficiency (mathematics and pattern optimization).
    1. Critical participation (contribution actualization).
  2. Human need fulfillment list (of an objectively,

- openly, adequately fulfilled threshold of [information or resource to form some construction]:
- Food and water.
  - Protective housing.
  - Protective clothing.
  - Non-hazardous life-space.
  - Medical/health service.
  - Social relationships.
  - Critical autonomy.
  - What if we were "free" to contribute to the whole global, local access-fulfillment system simultaneously, globally (i.e., "true" open-source [to the commons; public; social; global-population of extensional users and creators].

## 11.6.2 Individual needs

The following is a simplified needs list for an individual, in a household, in society:

- Basic necessities.
  - Water.
  - Food.
  - Waste removal.
  - Clothes (elements protection/architecture).
- Localization.
  - Land.
  - Air (atmosphere - for breath, movement, and vision).
  - House/dwelling.
  - Light (illumination includes "shadow" as deprivation of light, and vision).
  - Sound.
- Basic activities.
  - Care (self-bodily and other-bodily care).
  - Work (contribution and participation).
  - Rest (sleep).
- Relationships.
  - Self.
  - Intimate individual (partner).
  - Close social individuals (family).
  - Household members.
  - Non-household members.
- Consciousness (thought/motivation).
  - Meanings/understandings.
  - Values and objectives.
  - Learning.
  - Communication.
  - Beauty (natural and harmonious/uplifting surroundings).
- Body structure.
  - Gender.
  - Development phase (proximal to birth is highly age dependent, but distal to birth is highly

- disorder/disability dependent).
- Health (state of structure and function of body from optimal to dis-ease).

The ten needs and 25 elements of the household form the outline of a database that describes need satisfaction within the household. Each element of the household is analysed for its possible links to all the aspects of all the needs.

### 11.6.3 Organic life-requirement needs

*A.k.a., Categorical needs, absolute needs, electro-biological needs, innate needs, physical needs, bio-physical needs, electro-biological needs, organic requirements, organic-life requirements, physical-organic life-requirements, organismal requirements, biological needs, biological requirements, basic life requirements, basic needs, universal needs, human basic needs (HBN), etc.*

Organic based needs are innate to a physical body, and consciousness is enmeshed with the fulfillment of these needs, as they arise (to be fulfilled by their active pursuit and conscious integration) for continued biological (and conscious) existence.

For instance, food as a [category of] resource, and eating as the act of fulfilling that [category of] need. In the case of food, it is an absolute or categorical need, because it is determined by our biological requirements, which exerts particular demands on embodied consciousness if it chooses to remain alive and happy. As an absolute need, it is neither substitutable, negotiable, nor optional. In that sense, an essential principle is applicable to absolute human needs: nobody's non-substitutable need may be sacrificed to the desires or lesser needs of any group of other people.

Biologically-based needs are the sensed experience that organisms require environmental inputs for optimal biological functioning, such as water, air, sleep, food, EM, etc. Organisms experience and can be visibly seen to diminish in well-being, when they go for too long without the fulfillment (as, connection>integration>release) of a particular environmental relationship. The deterioration that ensues from relatively less immediate needs, such as sleep, is also clear (Colten & Altevogt, 2006).

The degree to which physical-organic life-requirements are satisfied is the most basic foundation (i.e., the physiological source) of well-being. Humanity's highest potential (e.g., free conscious activity) requires the fulfillment of needs that develop out of the physical-organic foundations of life.

'Need' is an intrinsically socially and species relative measurement; is it relevant only in relationship to the highest potential expression observed by another, or how often and sustainably does someone experience the states of well-being and flow.

Needs can be satisfied in (at least) three contexts (i.e.,

with regard to):

1. Oneself.
2. The social group.
3. The [ecological] environment.

Satisfiers can be classified with regard to their utility. Max Neef original suggested suggests five classes of satisfiers in concern to their utility:

1. Violators or destroyers - destroy future utility.
2. Pseudo-satisfiers - appear to provide utility, but are neutral or negative.
3. Inhibiting satisfiers - inhibit current satisfiers and current utility.
4. Singular satisfiers - a satisfier .
5. Synergistic satisfiers - mutual satisfaction.

More simplistically, satisfiers can be axiomatically divided into:

1. Positive satisfiers - factually, a satisfier.
2. Negative satisfiers - reduce current or future satisfaction.
3. False satisfiers - appear to satisfy, but do not, and are some degree of neutral.

There is one sub-characterizable meaning to the word 'organic' in the context of human 'need':

1. Organic, in terms of composition (and conscious understanding).
  - A. Organic, in terms of, the genetics that have material satisfaction [requirements] of a specific composition.
  - B. Organic, in terms of, the organism that has requirements [demands] to sustain and develop its own composition.
  - C. Organic, in terms of, the consciousness that has feelings (from wellness to suffering) that sustain and develop its own composition.

Needs can be sub-classified as to whether they are one of three modalities to consciousness:

1. **Informational** [to consciousness, mental state]
  - does the information available sufficiently fulfill conscious collect-ability, understand-ability, controll-ability/direct-ability, and use-ability needs?
2. **Spatial** [to consciousness, body/physiological state] - does the material surroundings available, inputs and outputs, and cycling, sufficiently fulfill conscious-material needs?
3. **Consciousness relational** [to consciousness, psychological state] - does the social surroundings available, the other conscious beings, sufficiently fulfill conscious-socio needs?

Needs can be sub-classified as to whether they are one of two spatial modalities to consciousness: (material and non-material):

1. *Individual MATERIAL NEEDS* [for services and objects]
  - A. **Organic satisfiers (objects)** - Organic compounds are generally any chemical compounds that contain carbon.
  - B. **InOrganic satisfiers (objects)** - An inorganic compound is typically a chemical compound that lacks C-H bonds.
2. **Social MATERIAL NEEDS** [for services and objects]
  - A. **Ecological satisfiers (services)** - Life-form cycles (within a biosphere) are generally any living organism that contains consciousness.
  - B. **Habitat satisfiers (services)** - A controlled and localized environmental cycle is typically a socio-technical organization that contains a population of an organism (for instance, human).
3. **NON-MATERIAL NEEDS** [for conscious 'information interconnection' and environmental 'quality of state']
  - A. **Social connection satisfiers** (A.k.a., Belonging, self-esteem, etc.). This is 'needed'. Note, that in this context, the material needs could be said to be 'required'.
  - B. **Conscious self-development** (A.k.a., Growth, self-expression, self-learning, education, etc.). This is 'demanded'.
  - C. **Environmental order sufficient** (threshold) for desired level of contribution (in the context of need and demand). This is 'essential', otherwise required work doesn't get done; or there is 'coercion', the violation of freedom, but work gets done via extrinsic motivation.

#### 11.6.4 Societal-level sub-conceptions of human need

The notion of human need can be viewed, at the societal level, from multiple perspectives, including but not limited to:

1. **Basic human needs:** Equate to physiological and safety; subsistence and security.
2. **Market [economic] needs:** Equate to those safety needs described by employment that meets basic economic needs (not being destitute), cost of education, earning power, personal wealth, household infrastructure, and non-paid work - as well as some socially based needs - community/national wealth and productivity, public infrastructure, economic diversity, economic growth, economic sustainability, and trade. Note

that "market" needs do not exist in 'Community'; they have been specifically understood and engineered out of the system's design. In a market, products and services are provided through trade/object/currency-exchanged re-distribution. In community, access is globally coordinated to fulfill needs, demands, and there is no need for services or objects to be traded, priced, or otherwise, marketed or commercialized.

**3. Ecological needs:** Environmental needs for natural ecological services. For example, the Earth's water cycle, atmospheric cycle(s), and other biospheric and sub-biospheric-organic systems with overall dynamic requirements and living needs.

**4. Environmental needs:** Environmental needs also equate to safety needs and include the availability of clean air, the availability of clean water, low health risks due to toxic contamination, biophilia (equates to belongingness/love needs) and acceptable distances from critical ecological thresholds. Real environmental needs span human and ecological life's inherent requirements, to reproduce, bio-diversify, and live well. Environmental needs would fall into Maslow's hierarchy at multiple levels:

**5. Optimization needs:** Where well-being equates to the remaining hierarchical needs from belongingness/love through aesthetic needs.

**6. Service (operations) needs:** The operation of a habitat service system, which has a set of specified needs for its operation and adaptation.

**7. Subjective happiness (subjective satisfaction):** Subjective happiness equates to the remaining hierarchical needs from belongingness/love through aesthetic needs. Here, happiness is subjective satisfaction, but not totally subjective, but also, common, because of embodiment. These include life satisfaction and freedom, sense of place, identity, community vitality and cohesion, access to nature, access to diversity of nature, affection/respect toward nature, value/importance of leisure time, mutual respect, cultural and spiritual beliefs, and aesthetics. Subjective happiness impacts several of Maslow's hierarchies, but particularly the psychological need to know and understand, aesthetics needs, and esteem needs. Life satisfaction or quality-of-life (QOL) is a focal point for subjective happiness, with satisfaction being gauged at the individual and social levels. Quality-of-life (its composition) is an measurement of the opportunities that are provided to meet human needs in the forms of built, human, social, and natural conditions (in addition to time). Ones ability to **express one's own values**[system] and

socialize with others of a similar value system significantly influences subjective happiness. Of course, a given value/belief system can orient its user toward a wide-variety of different experiential destinations.

**MAXIM:** *Needs are not infinite, except for the power of love [I have for you]. Firstly, nothing in the material world is infinite. Secondly, humans have fixed amounts of things that they need (on a daily, weekly, monthly, yearly, and life, cycle). Everything in the material world is finite, and the material world is all that exists. No material body can be of infinite size. Further, length cannot be divided into infinitely smaller units. The Love [I have for you] is continuous and not conditional on the material.*

### 11.6.5 A "goods" view of human needs

A "goods" view of human needs:

1. Atmospheric "goods" (or, satisfiers):

A. The atmosphere as a satisfier may be sub-composed of the natural atmospheric "goods" (elements and characteristics) of breathable air, open space and light.

B. Systemically depredated insofar as:

1. The air is polluted by its commodities' production and uses (e.g., ever more motor vehicles for profit with no limit on their numbers or ration of their use on land, air or water).
2. Open space is cumulatively occupied by these corporate-person uses and commodities disabling people's lives (e.g., by pervading fumes and motor-spike decibels and subsonic propagations).
3. The light of the sun has been made toxic by corporate-commodity effluents having cumulatively destroyed the ozone layer for protecting the earth from infra-red solar radiations.

2. Bodily "goods":

A. The bodily goods of clean water, nourishing food and waste disposal.

B. Systematically depredated insofar as:

1. The fresh waters of aquifers, lakes and rivers are polluted and drawn down by corporate-person activities of manifold kinds from factory farming, toxic discharges across industries and commodity extraction, with untreated sewage itself led by these open-waste methods (and taxes required to financially resolve the problem)
2. The world's foods and beverages are increasingly palatable, chemically adulterated,

- and genetically altered to serve money-sequence functions of mass sale, masking of age and quality, and care-cost reduction, thereby leading multi-disease causation and depleting loss of seed stocks, vitamin yield, forest covers, and organic immune resistance, etc.
3. Massive non-cyclical waste methods throwaway products and packaging and non-recycling of waste products.
  3. Home and habitat "goods":  
 A. The home and habitat goods of shelter from the elements and noxious animals and insects with means to freely function, and are improved in countless expendable conveniences.  
 B. Systematically depredated insofar as:  
   1. A home is the fundamental property of the State (requiring tax to sustain access to).  
   2. A home is a purchasable asset that must be maintained through additional purchase.  
   3. Protection from noxious animals and insects is by profitable commodities of instant poisons, solvents and other kill-mechanisms that are hazardous to life-forms in general and blinker out life-coherent methods of common/public resolution.
  4. Home and habitat "goods":  
 A. The built and natural environmental goods of surrounding elements and contours contributing to the whole are what form all pleasant human surroundings across cultures.  
 B. Systematically depredated insofar as:  
   1. Urban sprawl 'development' extending from one town and city and beauty space to the next.  
   2. Buildings determined only by corporate-person profit for unit sold and not for their contributing place in the whole unless regulated by such public coercion standards.
  5. Security and healthcare "goods":  
 A. Social life security (a.k.a., civil life security).  
 B. Systematically depredated insofar as:  
   1. The manufacturing, sale, and jurisdictional equipping of armaments.  
   2. The mass sale of addictive and life-reducing usables (e.g., cleaners) and consumables (e.g., junk drinks and foods, personal care products) that afflict countless people with diseases, whose cause by these products is unresearched or undisclosed.  
   3. The privatization for profit of health-restoring goods so that what does not serve corporate money sequences is ruled out, including human health plans and their extensions.
  6. Cultural "goods":  
 A. Language, music, art, and play which constitute culture in all its diverse human forms.  
 1. Systematically depredated insofar as:  
   2. Corporate money-sequence growth selects for funding and reproduction of only those forms which directly or indirectly produce and mass-market commodities for corporate profit. Whatever does not serve this ulterior goal is not funded or, if integral to people's lives, distorted into a form that does (e.g., public education tailored to the demands of corporate rule). Thus, culture becomes commodified to sell corporate brands, communication is reduced to what promotes sales by instant images and sound bites, and public cultural policies are determined by corporate policy. The cultural form is decided as "good" or "bad", in turn, by private money-value returns – that is, how much is paid for product or reproduction (high art), or how well it sells corporate commodities (commercial art). In general, culture becomes funded or defunded as it returns higher or lower money value to private parties.
  7. Human vocation as a "good":  
 A. The good of human vocation is the ultimate life good for human beings in community insofar as it enables and obliges people to contribute to the provision of universal life goods consistent with each persons enjoyment of them. This is the innermost moral logic of real economy and social justice ruled out by the opposite demands of pecuniary self-maximization with other human beings as mere resources for more money for ever fewer at the top. At the highest level of abstraction, the vocation of each individual is to do what s/he can that is of life-value to others and of life-interest to self. The value of work for others, in turn, is defined by its contribution to the provision of the universal goods each and all require to live as human.  
 B. Systematically depredated insofar as:  
   1. Work exists not as contribution, but an extrinsically motivated necessity.

### 11.6.6 Socially embodied need types

The needs common to all humans are:

1. **Basic [Physical] needs** are survival factors without which life existence is disrupted.  
 A. Without the fulfillment of basic needs, living system is unlikely to exist or is highly disrupted.  
 B. Required for persistent survival (existence) of

- the organism (intergenerational) or species (intragenerational).
2. **Complimentary [Social] needs** comprise of needs that may cause difficulties in life if they are not met. Without it living is disrupted. Access to services.
    - A. Without the fulfillment of complementary needs, living systems are [physiologically and cognitively] disrupted, but not at direct risk of non-existence.
    - B. Required for persistent physical and mental life sustainment (or, life satisfaction) of an organism.
  3. **Desired [habitat] opportunities** represent human needs that fulfil human potential, although without their fulfillment, lives would not be impossible. Opportunities [to access] growth and contribution enabling environments. Without available habitat opportunities for self-development and contribution (social development), living is still possible, not as joyous.
    - A. Without the fulfillment of desired opportunities, living system are [cognitively] disrupted, but not at direct risk of non-existence.
    - B. Without the fulfillment of desired opportunities, life experience is not full [of potential growth and exploration].
    - C. Required for optimizing for realization/actualization of a higher potential of self-expression and available opportunities.

#### 11.6.7 Individual human needs for access

Needs are satisfied (fulfilled, completed) by access to adequate food and water, protective housing and clothing, medical care, significant belonging, etc., and in turn, optimized by freedom from coercion, freedom to satisfaction, justice to restoration, justice to access, and efficiency.

**NOTE:** *In materiality, all is access.*

Humans have a set of needs representing requirements that must be fulfilled for individual humans to live, and live well:

1. **Human needs for existence** - what needs accessing in order to exist.
  - A. **Subsistence (sustenance)** - access to food, shelter and clothing, social and physical habitability, freedom to reproduce. Determined by the amount and characteristics of the geographical space, natural resources, life support factors, infrastructural conditions, total resources throughput (internal and external); eternal conditioners of society reproduction.
  - B. **Protection (safety)** - access to health services,

safety systems, and protection against disaster. Warning, prevention, protection and assistance systems against internal and external natural and social disasters.

- C. **Affection (love)** - access to family-type relationships and the means to keep a family. Recognition of one another.

2. **Human needs for persistence** - what needs accessing in order to persist.
  - A. **Comprehension (understanding)** - access to knowledge and the societal information system; access to communication; freedom to share information. Access to externally generated information, ideas, and scientific and technological understandings; global information services.
  - B. **Contribution (teaming)** - possibility for participation in decisions; lack of manipulation, marginalization or repression; expression of values.
3. **Human needs for development** - what needs accessing in order to develop fully.
  - A. **Recreation** - access to recreational opportunities and services, and to beautiful and restful landscapes. Access to activities and freedoms without reprisal or repression.
  - B. **Creation** - access to creative works, and to individual and collective creative activities.
  - C. **Discovery** - access to resources and tools for pursuing creative interests and inquiries.

#### 11.6.8 Emotively embodied human need categories

Humans have two sets of physically-emotive (embodied) need:

1. The need as an animal to **avoid pain (hedonic**, the experience of **pleasure** is the drive).
2. The need as a human to **grow** psychologically (**eudonic**, the experience of **purpose** is the drive).

#### 11.6.9 Functionally embodied human need categories

Humans have two sets of functional need, which may also be viewed as goals affecting human behavior:

1. **Physiological needs** (physical functioning, including eletro-bio-mechanical).
  - A. These needs could be viewed as **physiological goals**.
2. **Psycho-sociological needs** (intentional drive).
  - B. These needs could be viewed as **psycho-sociological goals**. Overlaid on top of physiological goals are the psycho-sociological

goals (e.g., purposes, plans, and intentions).

The 5 universal psycho-social needs are:

1. Love/attachment.
2. Being un/heard.
3. Social belonging.
4. Making a difference.
5. Meaning and purpose.

### 11.6.10 Species embodied human need categories

The species' directive is to generate and enable human life and life conditions to survive and flourish:

1. **Survive (survival directive)** - do not die before reproduction and sustenance (as in, raising healthy offspring).
2. **Flourish (flourish directive)** - reproduce healthy organisms with ever greater potential capability (as in, healthy adaptation to a more thought responsive environment).

### 11.6.11 Human life-need goal categories

Humans have two related sets of life-need goals. They have a need to survive given requirement from which physical inputs are required to maintain (to be in well health) a body, and the need to become more (to be a better, more wise and developed person).

1. **Survival goals (self-survival, existence)** - the goal(s) of surviving in a physically embodied existence:
  - A. Physical well-being (existence).
  - B. Mental well-being (existence).
  - C. A safe and healthy environment (survival).
  - D. Reproduction or limiting reproduction (survival).
  - E. A feeling that everything is "OK" and there is meaning to life.
2. **Betterment goals (self and social development)**
  - the goal(s) of thriving by actualizing the potential (of that which is given, and available).
    - A. A feeling that tomorrow will be as good or better than today; that everything will be "OK" tomorrow and there is meaning to life.

### 11.6.12 In concern to human life need

Life encompasses all human real-world life compositions. To an embodied consciousness, there are a set of material life compositions, including but not limited to:

### 11.6.13 The "basic" human need list

This list of needs assumes that if these "basic" needs are met on a daily (natural) basis, that a person will have enough motivation, well-being, and physical stamina

to seek out challenge, hormetic growth, emotional stimulation, contribution, and creative expression, as needed throughout their lives:

1. **Food** - The body needs calories and a variety of nutrients including protein, fat, and carbohydrates everyday to grow, function, and repair. Without food, the body begins to atrophy.
2. **Water** - Ample hydration allows for the processes of the body to occur. Without water the body cannot process food or remove wastes.
3. **Shelter** - The body requires protection from the sun, freezing temperatures, wind, rain, and other organisms (e.g., insects and predators). Without shelter, human skin and organs are damaged from extreme elements.
4. **Sleep** - 6–9 hours of sleep every 24 hours allows the brain to process new knowledge and deal with emotional information. Without ample sleep humans cannot learn new things or get past emotional pain.
5. **Connection with others** - Humans require connection (physical or emotional) with other humans to release certain hormones like oxytocin. Human touch is so important that when humans are young, their brains don't develop correctly without it. Regular connection to others allows us to maintain a sense of well-being that allows for self-care.
6. **Information novelty** - New information (information novelty) creates the opportunity to learn and the potential to fail (stimulating the state of flow). Without regular novelty and uncertainty, motivation wanes and a healthy sense of well-being is reduced/lost.

### 11.6.14 Absolute needs

*A.k.a., Absolute life necessities, biological needs, biological influences.*

Biology influences and pervades behavior. The biological dimension of human behavior - what might be called, the "biological imperative" - is not often subjected to analysis. Basic human needs are the necessary conditions to basic survival and further physical and psychological development. Biological imperatives are the needs of living organisms required to perpetuate their existence: to survive. Include the following imperatives for a living organism: food, water, shelter, energy, reproduction, social connection, self-development, etc. This idea of a set of biological imperatives may also be characterized by sociological imperatives, because the environment includes multiple biological individuals.

An **absolute [biological] need**, because it is determined by the biological requirements of human life forms,

which exert particular demands on conscious (moral) agents.

1. **Social affection** - There is still a human life necessity of supportive care or "love" which some say the greatest need of all. Certainly without it people variously lose life capacity including the will to live itself, and infants and children variously shrivel up and die to the world without it, as research has shown across the primates.
2. **Personal nutrition (nourishment)** - Eating is the number one instinct. Without it, our physical vessel will die; we need to take the action of food seeking and eating to continue living (by the body in some degree of adaptation to an environment).
  - A. Nutrition is an absolute biological need; it is neither substitutable nor negotiable, and it cannot be considered a social construct.
  - B. The nourishment requirement is multi-factorial and relates calories with macro- and micro-nutrient intake, and with research establishing required range quantities for size and age parameters, otherwise corresponding physical degeneration by significant deprivations. Generally, this category is measured in the units micro-nutrients (mg) and macro-nutrients (g).
3. **Personal medical health** - The maintenance of life can require periodic health care relative to the objective disease problems that arise in the course of life.
4. **Self-actualization (access to 'flow', from potential)** - how to use your consciousness and abilities to do the most good for society before you die. Happiness is living a purposeful life. If we figure out our purpose through self-actualization while on a journey to it, that should facilitate happiness because we know where we are going.
5. **Aesthetic** - sensation of surrounding material environmental system; most significantly, the visual appearance and experience of the surrounding space, which can have a significant effect on the psychological state of inhabitant.
6. **Access to justice** - There is the requirement to live in reciprocity with others.
7. **Access to information** ("education", psycho-social) is a socio-cultural life-requirement without which cognitive and imaginative capacities cannot develop fully. The higher-level capacities of human thought and expression require education. Education
8. **Contribution** (psycho-social) - Freedom to contribute for the sake of its intrinsic value (without regard to the demands of the a money-value system (e.g., funding or employment), political

pressures, and coercion.

- A. Take what you have learned and make it beneficial in your own life (i.e., beneficial to oneself):
  1. Take what you have learned and make it beneficial to others.

### 11.6.15 Socio-psychological human need[ed conditional satisfiers]

These human needs can be measured on an individual and social level/scale (**NOTE:** this scale includes all absolute needs, but at the same time may be considered a higher-categorical level).

1. **Subsistence** - inputs required to remain alive.
  - A. Individual: Calculation of effort for access to [clean] food, air, water, land, and shielding.
  - B. Social: Aggregation of data on access to [clean] food, air, water, land, and shielding.
2. **Safety** - inputs required to remain physically and psychologically whole.
  - A. Individual: Calculation of presence of accidents, disasters, and interpersonal violence.
  - B. Social: Aggregation of data on presence of interpersonal violence experiences, accidents and violence.
3. **Affection** - inputs required to remain connected.
  - A. Individual: Calculation of connections with significant others.
  - B. Social: Aggregation of data on levels of rape, suicide, and homicide, and observation of connections between people.
4. **Understanding** - inputs required to remain cognitive.
  - A. Individual: The [capability to] re-visualize, and inquire into, the unified information model for the community-type society [in which the individual resides, a goal of orientation].
  - B. Social: The expression of a unified information model for the community-type society
5. **Participation** - inputs required to remain socially active.
  - A. Individual: Calculation of contributions to the operation and adaptation of the unified societal system as part of the InterSystem Team.
  - B. Social: Aggregate data on contributions by InterSystem Team participants.

#### 11.6.15.1 Complexity in understanding the need for safety

What is the level of access [to all that humanity has to offer] for someone to feel 'safe' [among the common population]?

If all were open, there would be a usability calculation restriction based, potentially, on some level of harm restriction:

1. Level-of-harm restricted (effectiveness inquiry within the decision system)
  - A. Level of harm is what leads to the inability of the population to commonly, and thus, personally, access certain items via nominal InterSystems habitat services, both common and personal (personal as a sub-level of common).
    1. For instance, the InterSystem Habitat Service team will not support the production or access of biological weapons for common or personal access; though such items may be experimented with (or not), transparently, at the InterSystem Team level, as decided upon via some pre-programmed design contribution algorithm.
    - B. For some materializations, the access is restricted to InterSystem team members with certification and accountability. (notice the model is recursive in access level with the first level.)
    - C. It is important here to realize that some procedural knowledge can be used to great harm, and therefore, must be restricted from common, everyone, access; though, the fact that there is knowledge of such knowledge should not (per transparency, openness values and objectives).
    - D. Personal, common, and InterSystem Team access to:
      1. Material systems and machined objects (e.g., plutonium, molecularly reactive centrifugal technology, and gravity technology), or the setting of fire to common plastics represent high level of harm and are decidedly prioritized, appropriately transparent, in InterSystem access.
      2. Information systems to reproduce certain objects (e.g., child porn; procedures for producing 'weapons' that are objects that produce a sufficient level-of-harm of possible social harm that they are restricted from common and personal access (as restricted access to the procedure or restricted access to the materials, or restricted access to the materials in that composition).
      3. For some materializations there are decided restrictions on the use of fabrication machines to produce certain objects.
      4. For some material re-cycling there are decided

restrictions on the use of systems to reduce certain material.

5. For example, do you want to use common access snowboarding equipment that has been checked out from a local recreational equipment library at a ski slope? Do you want to use the checked out snowboarding equipment to run the highest class level peaks? In this final case, the risk of harm to life and damage to the checked out item (or personal item) is great.
6. In community when said snowboarding action occurs,
7. Whether the objects are lost or damaged and the individual(s) human(s) are harmed or not is of likely emotion consequence to the social environment,
8. Said action/execution could/would likely lead to loss of access to life and object,
9. However, in community, there is no subsequent abstracting of trade, debt, price, punishment, possible further non-life harm. There is no further social abstract harm necessary to induce on those already suffering.
10. There is further life harm in not necessarily understanding that which in the real-world induces the conditions of addiction and bullying of others.
11. Abstracting is another supra-process that integrates other motives (and hence, consequences) on top of life.
12. The question is, what [level of harm] is being abstracted and integrated as part of the core decision resolution inquiry process that restricts access to a given society system (procedure, object, or condition).

*Note: In other societal configurations, this societal requirement was held by governments and their internal and external militaries down to the level of police and denouncers. In the snowboarding example, in the market, the police and judging human or machine procedural justices would have taken care of disputes arising from self-selected risky behavior (i.e., renting an item from a store and damaging it while taking great risk, possibly putting others' lives at risk, with or without insurance).*

Wherein,

1. Personal sub-level type access - do "you" or small, non-intersystem, recreational group want to put yourselves at risk by some activity using personal and/or common access items.
2. InterSystem access - do "you" want to be put to

death via some painless medium?

3. Need an appropriate informational and spatial "place" to 'feel' consciously safe and challenged. Here, challenge is 90\* - hormetic, appropriate autonomy on individual's levels of personal safety risk, though not individual autonomy on the selection of social risk (which, is achieved through open societal algorithmic decisioning).

### 11.6.16 Psycho-social needs

*A.k.a., Intellectual needs, psychological needs, psycho-social experiences and conditions.*

Needs involve action by the organism (organismal action) to seek out certain basic types of psycho-social experiences, to a somewhat varying extent across individuals, and to feel good and thrive when those basic experiences are obtained, to the same extent across individuals. These needs will change given the information and technology available to the population, and the population itself over time, and that population itself can compare itself to others. Wherein, the organism seeks a certainty understandable experience of the social world.

Examples of psycho-social need models include,

1. Anthony Robbins socio-self-empowerment model.
2. Self-determination theory; intrinsic motivation model.

### 11.6.17 Human flow needs

In order to experience flow states, a person needs to have certain basic human needs (conditions) fulfilled. By fulfilling these basic human needed conditions, a person is more likely to experience flow states. These are not technically human needs, conditions that facilitate flow; they include, but may not be limited to:

1. Competence - a person needs to feel competent and capable of completing the task (objectives they set for themselves).
2. Challenge - the task must be challenging, but not too difficult or impossible.
3. Clear goals - the person must have clear goals and a sense of purpose (intrinsic motivation).
4. Control - the person needs to feel in control of the task and their own actions.
5. Concentration - the person needs to be able to concentrate and stay focused on the task without distractions.
6. Empowering emotions - the person needs to be empowered (positively) about themselves and their work.

### 11.6.18 Human needs for existence and flourishing

The common human needs could be viewed as a universal set of means of life (needs), which all humans require to flourish:

1. **Atmospheric means of life:** Breathable air, sense open space, daily light.
2. **Bodily means of life:** Clean water, nourishing foods and self-waste disposal.
3. **Architectural means of life:** Shelter space from the elements with ample provision to retire, sleep and function.
4. **Environmental means of life:** Environmental surroundings whose elements contribute to the whole and do not chronically degrade (e.g., land and the cosmos).
5. **Caring means of life:** Intimate love, social inclusion, safety and healthcare when ill or infirm.
6. **Educational and recreational means of life:** Activities of language-logos/art-play to choose and learn from.
7. **Contributory ("vocational") means of life:** Meaningful work or service to perform.

### 11.6.19 Human life-finding functions

**NOTE:** *Behavioural motives, to some degree, arise due to the innate desires placed on consciousness from its embodiment in a physical human organism.*

As an organism, humans have [at least] two innate [life] finding functions, which may also be viewed as goals affecting human behavior:

1. **Food-finding function** - the need to remake the individual body with minerals and dead organisms.
2. **Mate-finding function** - the need to/remake the genetic body through another generation.
3. **Social-finding function** - the need to remake the psychological (mental) body through another connection. That connection can be (or can not be):
  - A. **Bond-finding function (show trust)** - Bonding is when animals begin to trust and appreciate one another.
  - B. **Respect-finding function (show significance)**
  - C. **Help-finding function (show support)** and **contribution-finding function (show contribution)** - contributing to support others to satisfy their unmet needs (contributed optimization).
  - D. **Growth-finding function (show sharing)**
4. **Information-finding function (show growth)**
5. **Evolution-finding function (show adaptation)** - hormesis is betterment adaptation to a given

environment.

### 11.6.20 Self-organizing system needs (access-service needs)

The needs of self-organizing systems (e.g., human and ecological systems) can be characterized as follows (note: the habitat service support system facilitates the fulfillment of each need)

1. **Needs for existence or identity** - Needs whose non-satisfaction results in the destruction of the system.
  - A. Basic needs/requirements fulfilled by Life Support Service.
2. **Needs for completeness or integration** - Needs whose non-satisfaction results in the systems inability to perform some of the functions.
  - A. Engineering needs/requirements fulfilled by Technical Support Service.
3. **Needs for stable functioning** - Needs whose non-satisfaction results in disturbances in the system's performance of some of its functions.
  - A. Want and request needs/requirements fulfilled by Facility Support Service.
4. **Needs for adaptation, improvement or optimization** - Needs whose non-satisfaction inhibits the adaptive modification of the system's structure and functioning.
  - A. Improvement and adaptation needs/requirements fulfilled by Project/InterSystem Support Service.

The attributes of a self-organizing human system are:

1. **Completeness or integration (Source)** - All information is integrated into a complete design decision.
2. **Cooperation (Social)** - The design is shared and coordinated.
3. **Allocation (Resource)** - The design is constructed and operated.
4. **Regeneration (Service)** - The design provides services to the community.

Given an environmental dynamic where there is probability, entropy and uncertainty, then there are also the orientational system needs of:

1. **Optimization.**
2. **Adaptation.**
3. **Resiliency.**

### 11.6.21 Contributor autonomy needs

InterSystem team contributions are acts of involvement in the well-being of the interrelated whole to which the

contributors belong. Therein, contributors (intersystem team members) have a variety of autonomy-related needs, which include:

1. **Time:** Contributors set contribution time, unless it becomes set by the work-task and decided upon by a decisioning protocol.
2. **Location:** Contributors set contribution location, unless it becomes set by the work-task and decided upon by a decisioning protocol.
3. **Independence:** Contributors choose among the activities available to their [InterSystem Team] service development level (i.e., dependent task selections are dependent upon the skill, knowledge, and ability of the contributor, and availability of the task).
4. **Social connectivity:** Contributors choose among activities, those with a low necessity for social connectivity, and those with a high necessity for social connectivity.
5. **Work quality (positive fulfillment):** Contributors choose worthwhile tasks and activities of personal interest.
6. **Crowding (negative fulfillment):** Contributors do not choose to be crowded by information, space, or other contributors, unless such crowding is brief and worthwhile.

### 11.6.22 Physiological flow needs list

*A.k.a., Intrinsic motivation, self-determination theory (SDT), etc.*

Flow is a cycle, and therein, state, of high performance. Flow generation (the experience of flow) requires:

1. **Autonomy (control)** - Able control over "your" own actions. The desire to be in control of oneself.
  - A. When internally regulated, this is self-control ('will' is the highest internal control).
  - B. When externally regulated, this is social-control ('protocol' is the highest external control).
2. **Adaptation (mastery; adapt to the environment with mastery)** - Able improvement toward mastery (competence) of high performance. The desire challenge and advance, to be good at something.
  - A. When internally regulated, this is hormesis (flow is the highest internal adaptation).
  - B. When externally regulated, this is evolution (equanimity is the highest external adaptation).
3. **Connection (purpose and relatedness; connect with purpose and see real-world relationships)**
  - Able to connect action with purpose (feeling) through logical reasoning and pattern recognition. The desire to make sense of oneself and the world through a sense of purpose or relatedness.

- A. When internally regulated, this is though (self-integration is the highest internal purpose).
- B. When externally regulated, this is behavior (contribution is the highest external purpose).

#### 11.6.22.1 Autonomy

Three elements are used to operationalize and measure autonomy and its absence. The potential key variables that affect levels of individual autonomy of agency include (i.e., are required for autonomy):

1. Cognitive and emotional capacity is a necessary pre-requisite for a person to initiate an action. Since all actions have to embody a modicum of reason to be classed as actions at all, it is difficult to give a precise definition of the minimum levels of rationality and responsibility present in the autonomous individual.
2. The level of societal (or cultural) understanding a person has about oneself, one's society (or culture), and what is expected of one as an individual within it. These understandings will include both universal competences, such as the acquisition of language in early childhood, and a host of socially specific skills (which, though variable can objectively appraised). To deny a person such basic cognitive capacities is to threaten the person's autonomy within society (or culture).
3. A range of opportunities to undertake socially significant activities. By 'significant' we mean activities which are central in all societies. Again, there is a problem in determining minimum opportunity sets, given that even the most oppressed of people can and will exercise choices. Nevertheless, some minimum freedom of agency is an essential component of autonomy of agency in all societies.
4. The capacity to compare societal (or cultural) rules, to reflect upon the rules of one's own society (or culture), to work with others to change them, and in extremis (i.e., in "extreme" cases where societal change is not possible), to move to another society.

**NOTE:** People build a self-conception of their own capabilities through interacting with and learning from others. Autonomy presupposes interdependence.

#### 11.7 Life-quality indicator categories

Life-quality indicator categories include, but may not be limited to:

1. **Health need:** To complete a range of practical tasks in daily life requires conscious abilities (manual, mental and emotional abilities), with which poor

health usually interferes. Illness results in suffering one or more dimensions of disability, regardless of different individuals label, name, and explain their illnesses and dis-eases. In order for health and longevity to occur in the human condition an entire lifestyle approach is required. Having health means we can take part (i.e., are sufficiently mentally and physically healthy enough to) in intrinsically valuable life activities. When individuals are healthy, then they can do the activities they desire to do in life. When humans are healthy in body and mind, and participate in life in ways that are intrinsically meaningful, then they are highly likely to be observed flourishing. Effectively, this is survival (as physical bodily health).

2. **Autonomy need:** Autonomy can be defined as, the ability to take and act on informed decisions what should be done and how to go about doing it. In a social context, autonomy refers to the ability to integrate and express experiences of flourishing individually, and intergenerationally. The idea of autonomy comes bundled with awareness, choice, opportunity, and intrinsic motivation. Autonomy is the ability to make informed choices about what should be done and how to go about doing it). Autonomy implies that people value and feel interested in their own actions, that they are self-endorsed and not forced by external agents. Competence is related to being able to achieve results to function effectively in ones' society. Relatedness is linked to feeling part of the society, accepted and respected beyond the close family ties. Design something that makes people feel empowered and sufficient. Do not design a system that coerces behavior and punishes

non-conformance; do not design a system that limits human autonomy to move residence and to appropriately physically connect with other humans. The key variables (affect-levels) of individual autonomy (Read: of agency) relates to participation in the following domains; whereupon, if any of these domains are impaired, then one's autonomy is necessarily impaired:

- A. **Mental health** - is based on some level of cognitive and emotional capacity, as a necessary prerequisite for a person to pursue a goal. This can be blocked by serious mental ill-health: the levels of rationality and responsibility present in the autonomous individual are undermined when a person suffers from severe mental illness.
- B. **Physical health** - an individual's autonomy is impaired if lacking adequate ability to move their body by understanding them-self and their environment, and what is expected by others of oneself, and what one ought to expect from others in the environment. That which is moral is to coordinate the fulfillment of human flourishing and appropriately user the service support system, thus building moral capacity in the social organism. To control the needs and need fulfillment of another is to control their autonomy.
- C. **Habitat opportunity** - a range of physical opportunities (habitat activities) to use and contribute to, by taking an active role in socially significant activities. By 'significant' this means informational and materialized activities, systems, that are central in all societies, but expressed differently: life support, technology support, and facility support. By contribution, the individual in relationship with the society build physical capacity.
  - 1. The market classifies this physicalized experience as employee, employer, consumer (as possible economic relationships).
  - 2. Braybrooke (1987) classifies these as the roles of parent, householder, worker and citizen.
  - 3. Ian Gough (2017) classifies these four basic social activities as production, reproduction, cultural transmission and the exercise of political authority.
- 3. **Self-actualization need (personal growth, self-transformation)** - experienced as a desire (with environmental access-ability) to actualize one's personal, full potential. Self-actualization has both a subjective and objective measurement input.
  - A. **Self-actualization subjective measure [of well-being]** -- quality of life (subjective well-being) at

time of survey data collection:

1. Market (want satisfaction) - job satisfaction (and market indirectly: "hobby" satisfaction). Statements of job satisfaction include as an indicator of well-being include: a perception of time, outdoors, earnings, and independence. Other possible perception factors include: independence, work quality, earnings, time/ trip length, adventure, offshore, time/family, and crowding.
2. Community (flourishing, thriving) - life "satisfaction", which is divided into by the four types of information of which the information system is composed and with which individual's interface: social qualia (a.k.a., social "satisfaction"), decision qualia, lifestyle qualia, material qualia.
- B. **Self-actualization objective measure [of well-being]:**
  1. Market (wage and bank account size) - measured by identifying the number of material objects found in each in each respondent household; earnings/income (e.g., gross or net earnings from a business, taxable income, income per capita, household, or family). Other measures include: "job safety," "predictability of earnings," and "your earnings".
  2. Community (fulfillment) - measured by identifying the degree of access (absolute number-value) to material objects (that meet human needs and facilitate the desire and access-ability to actualization of one's full potential).
4. **Sociological needs** - experienced as a desire to connect, share and work with other human beings and animals. Opposite of loneliness. Humans have the innate desire to work with and for other humans, and to play and relax with other humans.
  - A. Design something that help create trust and positive supportive relationships between people. Do not design something that makes people feel lonely, isolated. Learning is a universal process of human development, information must be shared to develop socially, thus building social capacity.
5. **Physiological needs** - experienced as a desire (with environmental access-ability) to move into and through different physical mediums and states. Physiological need inputs have only objective measurement inputs (food, water, shelter, energy, etc.):
  - A. Design something that accounts for the material objects needed by humans; which are measured

and determined within the context of science and engineering.

- 6. Safety (and security, defense)** - no physical violence and no environmental or service serious complication. Experienced as a lack of incidents, and a desire to resolve, recover, and prevent incidents. There is the desire for safety on the part of the individual, and there is the design of a safe environment. Safety inputs have objective and subjective measurement inputs: Violence in the system:
- Market - measured by those organizations funded by charitable organizations, and by State entities. Systems are designed to be as reliable as is profitable.
  - Community - the presence of violence is analyzed, its correlative and causative factors are determined, the system synthesizes this new information with pre-existing information (i.e., integration) to generate an updated understanding; a new set of system requirements is developed, the design specification is modified, and then engineering changes the next experiential iteration of the habitat service system that provides for our common fulfillment. Systems are designed to be precisely reliable.

## 11.8 Community-based accounting of human needs

A community-type society recognizes a common and objective list of human (and ecologically contextualized) set of needs that allow for individual humans to flourish, have well-being, happiness, and have lives of highest potentials. In community it is recognized that humans have needs for access to a societal habitat network, where they are the final/end users (who are residents with common needs and preferences). The complete community-based (real-world) human needs list can be found in a table as an appendix to this article.

To simplify, humans have needs for:

- Habitat services (a.k.a., object-services):**
  - Life.
  - Technology.
  - Exploratory.
  - Decision.
  - Residmentation.
- Life-phase services (a.k.a., lifestyle services):**
  - Nurturing.
  - Education.
  - Contribution.
  - Leisure.

### 3. Social love and connection (a.k.a., family and friends).

- Living together (talking, sharing, eating together, doing activities together, learning together, designing together, constructing together).

**Table 2.** A simplified view of the list of common and objective human needs. In society, humans have needs for objects and services.

Human Needs List
<b>Movement over landscape</b>
<b>Breath of air</b>
<b>Climate</b>
<b>Sunlight</b>
<b>Materials cycling</b>
<b>Sleep restoration</b>
<b>Nutrient satiation</b>
<b>Reproduction</b>
<b>Construction</b>
<b>Affection</b>
<b>Socialization</b>
<b>Beautification</b>
<b>Contribution</b>
<b>Residmentation team service</b>
<b>Habitation team service</b>
<b>Standardization team service</b>
<b>Decision</b>
<b>Contribution-phase [service]</b>
<b>Education-phase [service]</b>
<b>Leisure-phase service</b>
<b>Commonized Coordination of information heritage</b>
<b>Commonized Coordination of resource heritage</b>
<b>Personal access</b>
<b>Common access</b>
<b>Contribution access</b>
<b>Habitation</b>
<b>Hygienation service</b>
<b>Reproduction service</b>
<b>Cultivation service</b>
<b>Food service</b>
<b>Clothing as shelter service</b>
<b>Buildings as shelter service</b>
<b>Medical service</b>
<b>Protection (defense) service</b>
<b>Production service</b>

Human Needs List
Transportation service
Information service
Communications service
Consciousness exploration services
Technology exploration services
Science exploration services
Recreation exploration services
Self-expression exploration services
Education exploration service

## 12 The motive-for-action model

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**INSIGHT:** Consciousness experiencing the [natural] human condition has extant, commonly identifiable needs. An objective value is the identification of a common relationship in a common system of existence through intentional inquiry and integrated understanding. Objective values describe the natural relationships that verifiably fulfill the common needs of conscious organisms. Therein, there is a coherent way for consciousness to know fulfilling actions from unfulfilling action.

The motive-for-action model represents humankind's innate and universal motives for action, their common needs and states of being. It is a model of the forces that motivate, liberate, and direct a human life [as they are presently known] toward a higher potential of self-expression and human fulfillment. This model assumes that all humans, regardless of culture and socio-economic conditions are driven by the same fundamental needs, the same motive forces. The model exists as a guide for the informed creation of a fulfilled society. By understanding what human [life] needs are and the different ways they may be fulfilled (or prevented from being fulfilled) humanity can create an intentional environment where it can cooperate toward the fulfillment of all everyone's needs.

If motivation is driven to some extent by the existence of unsatisfied needs, then it is worthwhile for a community of individuals to maintain an awareness of their common needs and identify whether those needs are being fulfilled. When human needs are left unfulfilled, then individuals often exhibit behaviours that could harm the stability and conflict with the guiding purpose of a community. Hence, a stable community arises and is composed of individuals who recognize their needs and act in a common manner toward the fulfillment of everyone's needs so that no one's unfulfilled or pseudo-satisfied needs cause personal and social instability.

Human beings, like all living creatures and systems are characterized by needs - resources, energies, and states of experience required to survive and develop toward conditions of maturity, health & well-being, and sustainable prosperity. Human needs can be described in various ways, and they have been identified, categorized and documented by numerous scientific researchers, philosophers, and motivational facilitators.

The motive-for-action model combines multiple different isolated 'needs-based models' into a single integrated 'needs-continuum model'. From left to right, the model includes the following eight sub-models:

1. The consciousness [as a Level-of-Care] model.
2. The Power versus Force model.
3. A modified version of the Spiral Dynamics model.
4. Tony Robbins human needs model.
5. Maslow's 8 human needs model.

6. The intrinsic, self-determined motivation model.
7. A physical resource needs model.
8. A technological needs model.

Each of these sub-models categorically organize a different factorial component of the human life and learning system, extending from the subtle [as consciousness & mind] on the left of the model to the material [as physical resources & technology] on the right of the model. In other words, the Motive For Action Model represents a common spectrum of human need, extending from consciousness (left) to the material (right). When combined, these models suggest that humans have needs that extend from the "subtle" (or mental) through to the material - there are multiple integrated human systems, and there exist a set of human needs in each system. At the model's far right the spectrum may be seen interconnecting with the Community's operational processes elaborated upon in the Decision System 'design specification'. Fundamentally, it is useful to view motivation as:

1. **Needs**, which are felt and conceived of as drives.
2. **Values**, which are orienting structures composed of [mental] concepts and [physical] objects.
3. **Goals**, which are conceptual directions with meaning gain specific to needs.
4. **Approach** responses (action plans/patterns as a result), for obtaining the goal, which are information processing structures with the potential for self-correction at every level of societal experience (i.e., at the **individual, social, material, and lifestyle** levels of society).

The Motive For Action Model provides insight into those dynamics of experience that lead to a truly fulfilled life and the expression of an individual's fullest potential. Everyone needs love, friendship, and an opportunity to contribute. Everyone has a need for the certainty of survival and a variety of experience. It is comforting and healthy to be surrounded by people with whom one is familiar and uplifted; whom one cares about and whom care about one - people with whom one can connect. Everyone cares about someone, and deep within them remains the desire to thrive personally and socially as a human being. At some level all healthy human beings recognizes that there are forces that lead to a fulfilled life. And, although one may not realize it, everyone has the capability to impact their internal and external world in such a way that they orient themselves and their societies more greatly in the direction of a higher potential. It is empowering to know that every person has the aptitude to be and act in the world for the betterment of themselves and all others - the betterment of the evolving whole.

The human system exists at multiple levels, including the individual level and the social level. In each system there exist a set of conditional human needs that may

or may not be fulfilled by the structural design and orientation of the human system within its environment. Herein, individuals relate to form social systems and make decisions to form economic [decisioning] systems. In other words, humans exist within an ecological set of discoverable nested systems which they experience by means of consciousness and which form into a socio-economic structure that inhibits or fulfills the conditions necessary for human well-being. To some degree these 'design specifications' are intended to elaborate and clarify the operation and preferred function of these systems in greater detail.

Although humans have life needs, the way someone comes to know the world is, in great part, through the social organization of their life experience, which may or may not recognize life needs.

**INSIGHT:** *If "you" care about "your" performance and potential, then "you" might want to care about what is limiting "your" potential performance.*

The following sub-sections describe each of the sub-models of the Motive for Action Model.

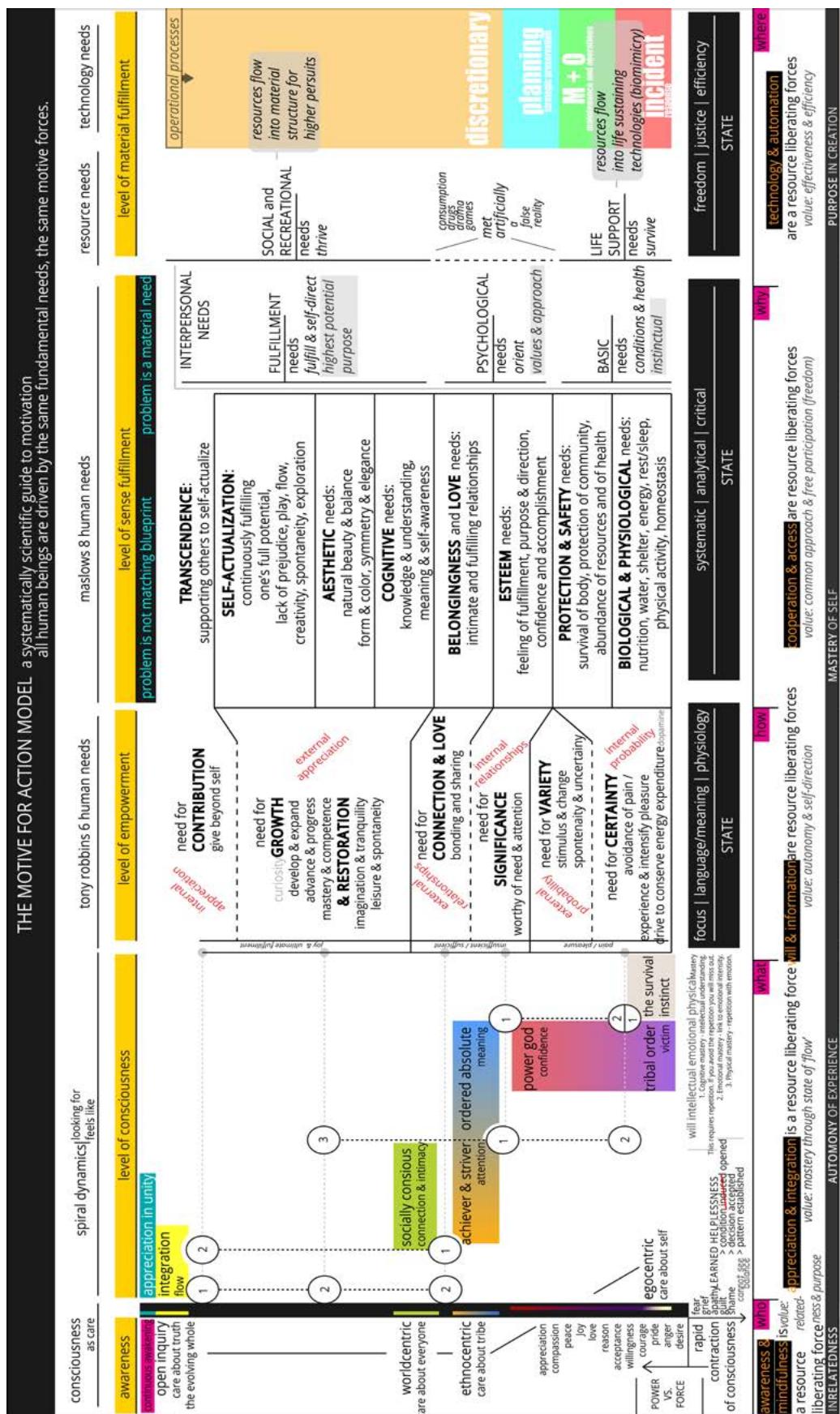
### 12.1 *The consciousness as level-of-care model*

The Consciousness as Level-of-Care model describes an individual's motive level-of-care as existing along a spectrum from egocentric to ethnocentric, leading to world-centric and eventually to the state of open and appreciative compassion for the evolution of all conscious beings. The four care levels are (as levels of integrated conscious awareness):

1. **Ego-centric** - care about self.
2. **Ethno-centric** - care about group, tribe, nation.
3. **World-centric** - care about everyone [in a specifically recognized and acknowledge world space].
4. **Open inquiry (universally centered)** - open and active inquiry as an expression of conscious care about the truth and the evolving whole. Care about the truth is care about what is really going on in the world (and in the universe), and its impact on all living systems.

Compassion and truth are essentially similar. When consciousness initiates the process of open inquiry it places itself along a path toward the continuous awakening of its awareness to ever greater folds of truth, appreciation (or gratitude), and oneness [in experience]. In truth lies the understanding that one is essentially similar to all others and that care for all is also care for self, and that care for the self is also care for all.

**INSIGHT:** *The mind is rarefied body and the body is solidified mind. In other words, we live in*



**Figure 10.** The motive for action model represents humankind's innate and universal motives for action, their common needs and states of being. It is a model of the forces that motivate, liberate, and direct a human life [as they are presently known] toward a higher potential of self-expression and human fulfillment. This model assumes that all humans, regardless of culture and socio-economic conditions are driven by the same motive forces, given by the same fundamental needs, the same motive forces. The model exists as a guide for the informed creation of a fulfilled society. By understanding what the human needs are and the different ways they may be fulfilled (or prevented from being fulfilled) it is possible to create an intentional environment where humanity can cooperate toward the fulfillment of all of everyone's needs.

*a continuum, and the compartmentalization of our total selves creates dis-eases of the body and mind.*

## 12.2 The power versus force model

The Power vs. Force model (Hawkins, 2014) delineates “energetic” fields of consciousness along a spectrum from that which is incomplete and an energy drain/consumer (i.e., “force”) to that which is complete and an energy supplier (i.e., “power”). In this model, “force” exists as an emptiness of meaning, an incompleteness and a state polarization. Polarization traps the otherwise actively open mind, and leads to the formation of competing [and fighting] camps and the creation of cults. A cult cannot exist when there are no hard lines and individuals remain steadfast in their power to inquire more deeply into reality.

The power versus force model assumes that individuals become strongest [measuring indicators of physical strength] when we think of loving thoughts and weaker when we enter states of fear, jealousy, and shame.

In “power” there exists a unifying meaning that transcends dichotomy in the open experience of consciousness itself. Herein, “power” is the will of consciousness to modify the dynamics of a system. The fields of being known as reason, love, joy, peace, and curiosity represent the powerful expansion of conscious intention into ever greater understanding and creation, eventually awakening into the states of appreciation and compassion. The fields of being known as courage, willingness, and acceptance form a foundation from which consciousness establishes a sense of self-direction and self-empowerment, and the unshackling of forceful and force-based interrelationships. Feelings of anger, fear, grief, apathy, guilt, and shame commonly accompany a sense of victimhood and helplessness; they represent a loss of self-direction and self-determination. They represent a contraction and dis-integration of consciousness. When these emotional states are not moved through effectively (or processed through fully), then they can block the realization of a higher potential experience [of life]. And, when primitive instincts such as lust, fear, and control [of others] are held/attached to, then there is a high potential for the generation of illusion that is likely to waylay the movement into higher states of consciousness.

Adopting a state of contracted consciousness takes away someone’s “personal power” to affect change within themselves and their environment, limiting resourcefulness, and leaving the individual feeling like they are no longer in control of their own lives (i.e., low self-efficacy). When someone sees themselves as a victim they stop creating a personal state of empowerment and cease learning—it becomes harder for them to experience the appreciation and compassion that is always there, but is not presently being “tuned into”. Those who sink down into a state of contraction often

lose the ability (or “power”) to effectively manage their emotive state and re-orient their lives (i.e., they lose the capacity and desire to select a beneficial focus (as in, intentional attractor), meaning, and physiology; they lose their mind[fulness]).

Individuals can focus their awareness, or not. They can select meaning, or not. They can re-direct their physiology, or not. Herein, “power” is the instantiation of potential capacity within the awareness of consciousness to select a new focus, identify a new meaning, and direct a new physiology.

**INSIGHT:** *Mindfulness is the experience of a conscious recognition of momentary interrelatedness. It is a quality of consciousness that denotes a receptive attention to and awareness of ongoing internal and external states, and relational patterns of experience; it is a state of being “present in the moment”. When people are mindful, internal and external realities are perceived openly and without [or with less] distortion. Once we are mindful we can become discerning of our decisions and thoughtful in our behaviors; we can become powerful in our actions, together.*

## 12.3 The modified spiral dynamics model

The modified Spiral Dynamics model categorizes an individual's core need orientations (or “developmental states/stages of need”) along a spectrum from base survival and reflexive instinct to the flow-based integration of emotional experiences into a state of holistic thriving. These “stages” represent the needs that are consistently cared about over time. Individuals with different core need states will maintain different thought and behavioral patterns that are reflective of their perceived experience of the world.

The seven need orientations (or “values”) are:

1. **Survival and instinct driven (Gray)** - The drive for automatic physiological satisfaction of mammalian needs. This is a state of instinctual primitive reaction.
2. **Tribal order (Purple)** - The expression of a safe mode of living through sacrifice to tradition and customs. The emotive experience of victimhood. Mythical and traditional values become dominant without inquiry into their origination and ongoing usefulness.
3. **Power god (Red)** - The expression of that which the self desires without guilt and without a recognition of commonality with others; often motivated by an avoidance of shame. This state represents the emotive experience of primal power accompanied by strong undertones of fear. Ego needs are dominant. Purely egoic values are expressed.
4. **Order & the absolute (Blue)** - Sacrifice of the self

for praise and reward through obedience to leaders and "rightful" authority. The search for heroic status (the "winner"), which often tramples upon the needs of others. This state is represented by the emotive experience of meaning. Authoritarian values dominate. Looking for heroism is a great way of avoiding one's own capacity for great moral action in the face of great suffering.

5. **Achiever & striver (Orange)** - The search for material pleasure and satisfaction through the expression of self-goals and personal-objectives without rousing the ire of important others. The emotive experience of attention seeking. Individualistic and family values dominate.
6. **Socially conscious (Green)** - The avoidance of harm and aggressive interaction, and the search for harmony with nature and social groups. The emotive experience of connection and intimacy, but not necessarily understanding (or wisdom). Communitarian and egalitarian values dominate.
7. **Integral flow (Yellow)** - The search for an integral system that combines an organism's necessary self-interest with the interests of the largest system(s) in which it participates and supports; a state of unity and of holistic thriving. The emotive experience of flow. Systematic and universal values dominate.

Each of the value stages in the modified Spiral Dynamics model can be seen interconnecting with both the Level-of-Care model and the Tony Robbins 6 Human Needs model in the Motive for Action Model. It is relevant to note that from the 'tribal order' position to the 'achiever & striver' position on the modified spiral dynamics model there exists a mixture of egocentric to ethnocentric Levels-of-Care in the awareness of consciousness. The modified Spiral Dynamics model interconnects with the Tony Robbins model via the 1, 2 and 3 numbering system. Each of the value stages in the Spiral Dynamics model interconnects with one or more of the 6 human needs. The needs are ordered by the 1, 2, 3 numbering system in the Spiral Dynamics model to show which need is most actively expressed at a particular stage of need development.

1. The 'survival instinct' and 'tribal order' stages interconnect with the need for certainty.
2. The 'power god' and 'order & absolute' stages first link to the need for significance and then to the need for certainty.
3. The 'achiever & striver' stage links first with significance, then with certainty, and finally with the need for growth.
4. The 'socially conscious' stage links first with the need for connection and love, and then with the need for contribution.
5. The 'integration' stage recognizes that the needs

for connection & love, growth & restoration, and contribution are all important.

## 12.4 Tony Robbins human needs model

**NOTE:** *It is possible for trauma and the engagement of defense mechanisms to occur at any of these systems levels when needs go unmet.*

Humans have a variety of psychological and emotional needs. These needs accord (or harmonize) with certain states of being. Some of these states represent a more expansive and constructive level-of-awareness, understanding, and appreciation. Other states, however, are more indicative of a contraction of consciousness, and a reduction in someone's breadth of understanding and self-awareness. The Tony Robbins 6 Human Needs model presents the 6 fundamental needs that shape an individual's behavior and support an individual in identifying how to create new patterns of thought, emotion, and behavior that lead to lasting states of felt fulfillment. (Robbins, 2006)

The six needs and their accompanying categories are:

1. The need for **certainty** - the assurance of avoidance of pain; the desire to experience and intensify pleasure; and the drive to conserve energy expenditure (i.e., energy efficiency). The individual is seeking the internal probability of pain reduction and pleasure intensification. This is a pain/pleasure need.
2. The need for **uncertainty / variety** - the desire for novel stimulus & change as well as spontaneity and experiencing the unknown (curiosity behavior). The individual is seeking the external probability of experiencing novel information (or content and meaning). This is a pain/pleasure need.
3. The need for **significance** - the desire to be worthy and gain/maintain the attention of others. The desire to feel unique, important, special, or needed. Is the individual feeling insufficient and seeking sufficiency through external relationship when sufficiency really comes from one's relationship with oneself? This is a insufficient/sufficient need.
4. The need for **love & connection** - the desire for bonding, sharing, union, and closeness with someone or something. The individual is seeking meaningful and supportive external relationships. This is a insufficient/sufficient need.
5. The need for **growth & restoration** - the desire to develop capacity and expand capability, to advance and progress understanding, to master and develop competence. The desire to maintain healthy states of creation and sensation through imagination and tranquillity. By growing and

restoring individuals show internal appreciation for the existence of the self. This is a joy & ultimate fulfillment need.

6. The need for **contribution** - the desire to give and serve beyond the immediate experience of the self. By giving beyond oneself shows external appreciation for all selves. This is a joy and ultimate fulfillment need.

The six needs are further divided into two principal categories, each with three delineations. The first category and three delineations are:

1. Pain or pleasure.
2. Insufficiency or sufficiency
3. Joy and ultimate fulfillment.

The second category and three delineations are:

1. Internal/external probability.
2. Internal/external relationships.
3. Internal/external appreciation.

Although each of these six needs are continuously present within an individual, the needs that are most active at any moment in time will direct the behavioral patterns of the individual. All healthy humans have the ability to spontaneously change their patterned states by shifting their **physiology, focus, and meaning** - they sometimes just need some support or guidance in learning *how*, and a *resonant environmental structuring* to maintain the state.

A fulfilled society accounts for the needs of the individual. Individuals who compose a fulfilled society necessarily comprehend that their actions may align the community more closely with a desired direction [as a commonly meaningful purpose], or set it on a course toward its eventual disintegration and downfall. They realize that it is through the intentional selection of different states of being (physiology, focus, and meaning), and the shaping of the material world (environmental structuring), that individuals and communities become capable of fulfilling their highest potential and living a life that leads in a desirable direction - a direction that is meaningful to everyone.

## 12.5 Maslow's human needs model

**INSIGHT:** *Give people what they need, and facilitate their motivation to acquire more of what they need, and it is likely to be experienced that needs and wants start to divide.*

The mental and physical needs of the human organism co-join within Maslow's model with the potential of generating a state of materially sensed fulfillment. Therein, Maslow suggested that unless the lower-order needs are fulfilled, the higher-order needs are not motivators of behavior. Humans need to achieve

certain elementary states of being, such as health and safety, before they can start thinking about higher-level needs, such as social connection and self-actualization. People who are seriously ill or lack safety would find it difficult to think about self-actualization as expressed, for example, in social morality, self-expressed creativity, and systematic problem-solving.

Maslow's original model from 1943 defined five hierarchically ordered needs ranging from physiological sustainability to self-actualization. (Maslow, 1943) The model herein is slightly adapted. Herein, Maslow's model maintains that there exist eight universal human needs represented as internally sensed states of being:

1. **Biological & physiological needs** - nutrition/food, water, shelter, energy, restoration/sleep, physical activity, biophysiological and energetic homeostasis, and hormesis. A feeling of restoration.
2. **Protection & safety needs** - survival of body, protection of community, abundance of material resources and of energetic (or metabolic) health. A feeling of protection.
3. **Esteem needs** - purpose and direction, confidence and accomplishment, and self-efficacy. A feeling of respect.
4. **Belongingness and love needs** - intimate and fulfilling relationships, social connection and sharing. A feeling of appreciation.
5. **Cognitive needs** - knowledge and understanding, meaning and self-awareness, integration of information. A feeling of intelligence.
6. **Aesthetic needs** - natural beauty and balance, form and color, symmetry and elegance. A feeling of harmony. Beauty serves to elevate the feelings of individuals. It serves to broadcast the fact that you live in a society that cares about you. Exquisite objects and locations serve to bind society together through shared values and a deep sense of place and meaning.
7. **Self-actualization needs** - continuously fulfilling one's fullest potential, recognition of commonality, play, flow, creativity in expression, joyful spontaneity, and exploration. A feeling of inquiry. The realization of human potential through the ongoing process of being open to new information and experiences, and fully and constructively applying one's abilities to one's interests for the sense of enjoyment and fulfillment that results.
8. **Transcendence** - supporting others to self-actualize, facilitation of fulfilling structures, and creating opportunities for one's own and all others growth. A feeling of compassion. All individuals love to feel like they can relate (and are related to), can support (and are supported), and can create (and share creation).

Herein, happiness comes [in part] from the sufficient fulfillment of these needs such that the sensation of a void in fulfillment (i.e., suffering) is no longer felt by consciousness. In large part, happiness is an individual's response to an environment that meets one's needs. Happiness [as a subjective feeling] is a by-product of someone's quality-of-life as objectively related to the fulfillment of these human needs. Yet, happiness becomes malformed [as excessive pleasuring and addiction] in the presence of a victimization culture wherein one person or group of people are victimized for the satisfaction of someone else's, or another groups, needs. Hence, happiness is not enough, there is also well-being; and further, there is generational well-being.

**INSIGHT:** *Happiness (as a subjective feeling)  
+ quality-of-life (as the fulfillment of needs)  
= well-being*

The needs identified by Maslow can be subcategorized into basic needs, psychological needs, and [higher] fulfillment needs. Basic needs provide the environmental conditions for general health. They are primal in that their insufficient fulfillment will generate primitive behavioral patterns to satisfy these needs, often at great cost to themselves and others [when methods for effectively satisfying them are unavailable]. When humans experience a reasonable threshold of primal need satisfaction, they will not necessarily be behaving specifically to satisfy their basic and primal needs; rather, they have the potential for doing that which they find interesting, important, meaningful, and useful.

When people live in a way where their most basic needs are "taken care of", then likely, they can be so much more present with the work they do, with their relationships, and in their life. When individual's basic needs are continuously fulfilled, then they have the room to fail and a metaphorical cushion to land on.

The psychological needs are those needs that allow consciousness to identify itself and relate itself to others in a social context. Values emerge therein as a principal form of [conceptual-linguistic] relation. They allow the self to orient in its relation to other selves. Fulfillment needs are those needs that fulfill the actual underlying conceptualizing consciousness, and facilitate consciousness in self-directing its own life toward a meaningfully unified purpose and higher potential state of creative existence (i.e., community).

## 12.6 The intrinsic motivation model

The model for intrinsic motivation is known in the literature by several names including "self-determinism theory". Intrinsic motivation is discussed in depth in the value system under the value, intrinsic motivation.

Self-determinism is a theory (or philosophic doctrine) that every present state or condition of the self is a result of previous states or conditions of the self. The self-determinism continuum [theory] is an empirically tested

macro theory of human motivation and behaviour. It has been applied and tested in a variety of life domains. According to self-determinism [theory], degrees of motivation vary on a continuum that represents roughly three motivational states: absence of motivation; controlled motivation; and intrinsic motivation. Therein, the theory represents a broad framework for the study of human motivation and personality. Perhaps more importantly the theory's propositions also focus on how social and cultural factors facilitate or undermine people's sense of volition and initiative, in addition to their well-being and the quality of their performance. In addition, the theory proposes that the degree to which any of the three psychological needs (of autonomy, mastery, and purpose) is unsupported or thwarted within a social context will have a robust detrimental impact on wellness in that setting. The continuum is visually represented in a variety of different ways in the literature, most commonly, as a matrix/table.

## 12.7 The physical resource needs model

A fulfilled society is composed of empowered individuals who apply knowledge, material resources, and technologies to sufficiently meet everyone's material needs. In the material world humans have two basic categories of material resource need: life support needs and social and recreational needs. These physical needs must be met with physical resources (or 'nutriments'). Humans will violate their values to meet some physical needs; hence, to maintain social stability there must exist an ordering (or prioritizing) of needs for any human system designed and organized to meet the material needs of human beings. In part, this model prioritizes through a set of formalized operational processes elaborated upon in the Decision System specification.

When basic needs are not met then a rapid contraction in consciousness is likely to occur and humans begin putting effort into harmful and destructive behaviours to "get" their needs met. This is particularly the case when individuals lack the information and tools for meeting these needs. However, when individuals' basic needs are sufficiently fulfilled, their highest potential direction and [current] emotive state-of-being are more clearly perceivable to themselves in the moment. The fulfillment of basic needs provides a foundation from which individuals may begin to orient their lives [through the adoption of a rational value set] toward a higher potential state of fulfillment.

The intelligent design of community offers the opportunity to fulfill all of the needs Maslow and others have identified. It is important to note, however, that if lower level material and social needs remain unmet, then individuals may lack the motivation (or health and desire) to meaningfully participate in a community of purpose, and they may begin meeting their psychological needs through artificial means.

## 12.8 The technological needs model

The technological needs of individuals are met through the societal system's operational processes:

1. **Strategic master-planning and strategic preservation** - planning and preserving access to common heritage resources and services.
2. **Operations and maintenance** - doing working in information working groups and in habitat service teams in order to sustain society.
3. **Incident response** - responding and recovering from issues with operations and safety.

These intersystem processes are active throughout the habitat service support systems (i.e., life, technology, exploratory).

## 13 Well-being

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*A.k.a., Wellbeing, human well-being (HWB), wellness, flourishing, fulfillment, happiness, human development, human welfare, quality-of-life, the human life conception, good life, positive psychology, quality-of-life, life-satisfaction, etc.*

Human well-being is tied to common human need. 'Well-being', as the term visibly denotes, refers to the state of consciousness being (feeling) well (i.e., feeling in its best state, and without pain). The concept of 'well-being' indicates an evaluation of a person's situation, or more fittingly, an evaluation which is focussed on the quality of the persons 'being'. Generally speaking, to be in a state of well-being, a person must be capable of making sense of the world and acting in ways that are healthy, adaptive, and functional for life, and not unhealthy for society as a whole. However, well-being is not just a matter of subjective experience; it is a common matter (issue) of what anyone can do, or be, in a shared reality. As a human being, well-being is how [well or fully] someone is fulfilled in their the experience as a common individuated unit of human embodied consciousness.

Well-being is a positive physical, social, and mental state; it is not just the absence of pain, discomfort, and incapacity. Well-being requires that basic needs are met, that individuals have a sense of purpose, and that they feel [cap]able to achieve important personal goals, relationships, needs, and participate in society. Well-being is enhanced by conditions that include supportive personal relationships, integration between social relations (low coercion and conflict), strong and inclusive environments, good health, personal security, rewarding contribution, and a healthy attractive environment. Well-being must be approached holistically if a society is to scale well.

**CLARIFICATION:** *In part, this project may be defined in relation to a set of inquiries about what all humans require to live well, which define its boundary conditions.*

What does it mean to be a 'well' social primate? Probably, it means not just that an individual is capable of getting around and functioning, but also functioning [socially] with other humans in a way that allows the other humans to function well.

Humanity requires a societal environmental that facilitate swell-being, instead of different degrees and expressions of suffering and being unwell. Well-being is about feeling good and functioning well, while having access to those services that facilitate survival and flourishing.

The following are concepts that are highly correlated with well-being:

1. **Well-being is a state** - a whole systematic framework for well-being that is needs-based in

- its approach, allowing humans to freely develop meaningful relationships and express purpose in life, and therein, actualize their potential.
- A. Material fulfillment generates well-being by meeting material needs.
  - B. Social fulfillment generates well-being by meeting social needs.
2. **Wellness is a process** - a holistic dynamic of life fulfilling processes that starts with ecosystem services that function well.
  3. **Wellness in relation to suffering/harm** - Over time, well-being could be considered a decrease in unnecessary suffering.
  4. **Wellness** is the optimal state of health of individuals (and "organizations" of humans). Here, there are two focal concerns:
    - A. The realization of the fullest potential of an individual physically, psychologically, socially, spiritually and economically, and the fulfilment of one's participatory passions throughout all aspects of life.

There are three emotions that humans experience to varying degrees that can dramatically affect the quality (condition), quantity (access), and length of life and contribution. These emotions are felt and expressed in micro and macro ways. The three primary-extreme emotions are:

1. Fear.
2. Joy.
3. Sadness/depression.

The three primary-extreme emotions fit within a four point emotional-feeling circular graph that consists of five points around at the four quadrants of a circle, and a center:

1. Neural (center).
2. Exciting.
3. Positive.
4. Calming.
5. Negative.

The total known possible macro feelings (that are graphed around the circle with the four point emotional-feeling categories) include:

1. Fear.
2. Anger.
3. Disgust.
4. Sad.
5. Depressed.
6. Bored.
7. Tired.
8. Sleepy.
9. Relaxed.

10. Happy.
11. Excited.
12. Surprised.

Obvious to everyone is the truth that fear is the lowest limit of potential. However, fear in and of itself is not bad. Fear warns away from overly risky activities. The memory of pain and resulting fear is what stops people from touching a hot stove again. However, when operating together as a society, fear is the detractor. To initiate and sustain a community-type society, fear is the limiting factor.

### *13.1 Hedonic and eudaimonic integration of well-being*

That which is applicable to society, and individuals in particular, encompasses components from multiples approaches to well-being:

1. **The eudaimonic approach** - is concerned with functioning and the realization of self-potential (Ryff et al., 2004; Kahneman et al., 1999).
  - A. Happiness from meaning to potentials and self-realization. Social and psychological well-being (socio-psychological well-being). Happiness is determined to a large extent by one's success in achieving self-set goals.
  - B. Eudaimonia implies prior hedonism and pleasure to move.
  - C. The objective of eudaimonia is that there is no conflict in life between "you" and "others" when meeting needs.
2. **The hedonic approach** - happiness comes from pleasure and not pain (in context). The hedonic approach is linked to subjective experiences of personal pleasure or satisfaction. The hedonic approach is concerned with pleasure, enjoyment and satisfaction.
  - A. Hedonic well-being - happiness from pleasure and not pain. Well-being as pleasure or satisfaction.
  - B. Mental and subjective well-being.
3. **The commons approach** - happiness comprises shared experience; those of shared interest and/or characteristics work and share mutual [optimal] well-being. Common well-being is influenced by society, human relationships and socio-technical networks.
4. **The objective approach** - happiness dependent on a set of identifiable relationships that are common to all people, and fulfilling these mutually imparts well-being.
5. **The critical approach** - Happiness may not be greatly affected by adding positives to one's life,

particularly in an enriched world, but instead, it is accomplished mostly by removing things that are a strong negative every day.

### 13.1.1 Mood

**INSIGHT:** When our diet is in alignment with our species evolved requirements, then we don't suffer from tooth decay. Evolutionary mismatches are behind most modern health problems.

Human individuals appear to have, given what is known, a functioning "mood-like" system involving self in relation to other, that induces feelings in the self. Even happy people experience unpleasant emotions. To have strong well-being and long-term happiness does not equate with uninterrupted joy; the restoration phase of the flow cycle is a visible indicator of this. Adaptive emotions involve being able to respond appropriately to events.

### 13.1.2 Well-being as 'eudaimonia'

*A.k.a., Happiness as eudaimonia.*

As a conception, 'eudaimonia' understands human well-being as achieving a full and meaningful life [within society]. Eudaimonia is contentment from a state of being healthy, happy and prosperous. Eudaimonia (Note that eudaimonia is also sometimes called flourishing or thriving).

Someone's sense of purpose is called eudaimonia. Eudaimonia measurements provide data on whether someone is flourishing, whether life has purpose, and whether someone is fulfilling their highest potential. That which is 'eudaimonic' is that which produces happiness, or is otherwise, conducive to happiness (i.e., facilitates happiness). Etymologically, eudaimonia is Ancient Greek from *eu* "good" + *daimon* "genius, guardian deity". In moral philosophy, eudaimonia is used to refer to the right actions as those that result in the well-being of an individual.

The Ancient Greeks resolutely did not believe that the purpose of life was to be happy; they proposed that it was to achieve eudaimonia, a word which has been best translated as 'fulfillment'. Here, eudaimonia is a state (or condition of the world) that is achievable by fulfilling certain necessarily required conditions.

**NOTE:** There are some definitions of eudaimonia as happiness through possession of the greatest "goods" available. How does the society under observation view and define, "goods"? Are goods highly market-State contextualized. Are goods highly defined by human fulfillment (material and informational) and realizing one's fullest potential.

Eudaimonic psychology (as opposed to hedonic) conceives of three universal psychological needs:

- the propensity to self-regulate one's actions and to endorse one's own behaviour.
2. **Competence (performance, mastery)** - feeling able to attain outcomes and operate effectively within one's environment.
3. **Relatedness (connection, sharing)** - feeling cared for, and significant for, others, and a sense of being integral to one's social organization.

These needs are cross-cultural; all humans require that they be met in order to experience wellbeing (Ryan & Sapp, 2007). Their conclusion is that basic needs are universal and it is possible (in principle and practice) to compare levels of basic need-satisfaction across societies (or cultures).

Another view of the needs of organismal development may be:

1. **Existence** - desire for physiological and psychological well-being (e.g., flavor).
2. **Growth** - desire for continued personal growth and self-development (e.g., exploration and technology support).
3. **Relatedness** - desire to satisfy interpersonal relationships and common flourishing (e.g., life-support).

Fulfilment of these needs is necessary for psychological 'wellness', and observable (and felt) consequences follow from their lack of fulfilment.

#### 13.1.2.1 Self-direction (autonomy)

The characteristics (constituent elements) of well-being for a self-directing system are:

1. **Resilience** - the ability to rapidly recover from adversity.  
A. "We" can understand survival.
2. **Coordination** - the ability to be in mutual relationship.  
A. "We" can cooperate.
3. **Sharing** - the ability to observe all available information.  
A. "We" can access a unified information space.
4. **Attention** - the ability to focus (on a problem, a solution, and an evaluation).  
A. "We" can shift our attention within the information space to resolve solutions to problems.

There are method, which may be applied, that facilitate the optimal expression of resilience, coordination, sharing, and attention within and amongst systems. Further, Each of these four characteristics is "plastic" (i.e., can be regulated through training).

#### 1. Autonomy (self-direction, no social coercion) -

### 13.1.2.2 Actualization (competence)

Human beings have capabilities which can be developed [in their potential] and expressed [as an actualization]. It is possible, in a shared life-space, to functionally grow and express oneself. The condition of self-growth and self-expression is otherwise known as functional freedom and economic opportunity (i.e., functional access):

1. To the design and development of the habitat service system through the InterSystem Team.
2. From the habitat service system as an individual human in the Community.

Human capabilities (human potential) conceives of well-being as the ability and opportunity to express desired function (e.g., to achieve goals). A person's capability represents all the combinations of functioning that are feasible to that person - that could be chosen.

### 13.1.2.3 Wellness (relatedness)

*A.k.a., Holistic; integration of 'wellness' into 'being', well-being.*

In the literature, wellness and well-being have slightly different meanings. Wellness is more about a personal choice (Read: dimensions of personal choice) that affects someone's well-being. However, in practice, 'well' is essentially synonymous with 'well-being'. There are two sub-views on wellness: wellness may be seen as a precursor (pre-condition) for well-being, based on mental, physical, and emotional health; wherein, health is a state of being while wellness is a process of being. Wellness is sometimes associated with health and freedom from disease, while well-being is more often associated with a state of being happy, healthy and prosperous. Wellness and well-being are highly associated with the practice of health-promoting lifestyle behaviours.

Integration as the linkage of differentiated parts of a system is a good predictor of well-being. In many studies, integration is the number one differentiator of well-being in every measure of well-being. When there is too much differentiation, then chaos and rigidity are the likely result of impaired integration. Integrations (linkage of differentiated parts of a system) seems to be the root basis of well-being, and as a mathematical perspective, this way of defining integration is the base of optimal self-organization for complex systems.

Here, relatedness means that the individual is related in wellness to all domains of life. Wellness may be contingent upon people going through the process of questioning their current state of being.

Humanity has a common core, integration, that can now be traced as a measure throughout society. Humanity can now look at [very sophisticated] measures of integration identify whether a [societal] intervention creating more integration, or less. And, if it is creating more, then most likely it will be associated with measures

of well-being (no matter what sub-measure), and if it is creating less, then most likely it will be associated with less well-being.

Whether we are looking at individual health or planetary health, we have a common, scientifically grounded proposal that integration is well-being. Is this decision going to promote more integration (and hence, well-being), or less integration (and hence, less well-being).

If there is integration, then there is harmony and a sense of well-being. If there is not well-being, then likely there is chaos and rigidity.

If Integration in the brain is the best predictor of well-being, then (in the context of human health):

1. Bi-lateral integration (laterality integration of body).
2. Vertical integration (up and down aspects of body).
3. Memory integration (impaired memory integration, trauma integration).
4. Narrative integration (make sense and find meaning in life, in memories of life, in coherence with own life).
5. State integration (mental states, role integration)
6. Relational integration (looking at relationships with others as integration and linkage).
7. Temporal integration (awareness of change integrated across past, present, and future).

Wellness is a highly encompassing concept around the idea of core need life systems:

1. Well fed (Nutrition; cultivation regeneration).
2. Well sheltered (Architecture; shield regeneration).
3. Well healed (Medial; life-form restoration).
4. Well watered (Water; atmospherics & liquids regeneration).
5. Well sunned (Energy; power regeneration).
6. Well materialized (Cycling; materials cycling-regeneration).
7. Well moved (built-in; recreational).

Wholeness and core felt life experience:

1. The self is happy; in felt life experience.
2. The self is confident; in knowing the defined operation of the life system that contributes to their happy life (i.e., is well-defined).
3. The self is a whole being; not going to go destitute, and has processed trauma (i.e., much flow).

In the context of wellness, flourishing means:

- Healthy, happy, fit (well moving).

Most conceptualizations of wellness include the four conventional dimensions of well-being:

1. Economic - Access and positive experiences with

- goods and services, and contribution. Well service systems and their products.
2. Social - Access and positive experiences with social opportunities and social participation. Well social relationships.
  3. Psychological - Access and positive experiences with one's cognition and mental state. A well mind.
  4. Physical - Access and positive experiences with one's physiology. A well body.

The common sub-factors of wellness often include (which, are also components of well-being):

1. Contribution (team, occupation, vocation).
2. Intellectual (curiosity and growth, lifelong learning, creative and information stimulation, and lively interaction with the world).
3. Health.
4. Freedom from disease.

Wellness can be viewed as an active conscious process by which someone:

1. Becomes aware of a choice,
2. makes (takes or arrives at) a choices toward,
3. a more successful, positive and well existence.

The characteristics of wellness:

1. Wellness is a choice constrained by an environment: a decision you arrive at to move toward optimal health within a given environment.
2. Wellness is a way of life: a lifestyle you have designed to achieve your highest potential for well-being.
3. Wellness is a process: an understanding that there is no end point, but health and happiness are possible in each and every moment.
4. Wellness is an integration of body, mind, and environment: an awareness that the choices we taken in one area affect all others.

### 13.1.3 Well-being as 'hedonia'

*A.k.a., Happiness as hedonia.*

Hedonia refers to pleasure, enjoyment, and satisfaction; and the absence of distress. Hedonia is associated with sensory experience, and eudaimonia is associated with the total state of consciousness, which includes cognition (cognitive attention and intention).

**CLARIFICATION:** *Hedonic adaptation is the tendency of us mere humans to quickly return to a relatively stable level of happiness despite major recent positive or negative events or life changes. Hedonic adaptation is otherwise known as synthetic happiness.*

Both eudaimonia and hedonia are required elements of well-being; for instance, meaningful experiences can bring about pleasure, and taking care of oneself can add meaning to life. Here, it is important not to equate the pursuit of hedonia with shallowness. However, under aberrant societal conditions, hedonia is likely to become the sole, shallow pursuit (at the expense of fulfillment).

There are societies with an essentially negative view of sensual pleasures. Yet, it's not the sensual pleasures themselves, but the way people are caught up in those pursuits. Tied to, bound to, greedy for, infatuated with, and do not have independent control over their cravings (sense pleasure, physical sensual pleasure).

**NOTE:** *Happiness and subjective well-being theory (hedonic psychology) may claim to be measuring 'happiness', when only (in fact) measuring 'contentedness' (synthetic happiness).*

#### 13.1.3.1 Well-being as happiness

**INSIGHT:** *What distinguishes happiness from suffering is pain. When "your" happy, "your" not anxious, nervous, depressed, or otherwise internally oppressed, and that means "you" can make the most out of your life, and what "your" life's purpose is.*

Well-being incorporates several separate, but related concepts. This raises concerns regarding the tendency of well-being to be conflated with happiness, which is only one element of well-being. Today, when most people try to articulate the purpose of their life, it is often the term 'happiness' that is used. Importantly, a happy life is enjoyable, not [only] because of what the happy person possesses, but because of the way the happy person reacts to his/her life circumstances. Incorporated in this subject's view/definition of happiness are the conceptions of disposition, pleasure, satisfaction, and subjectivity. Although happiness is desirable, people want to feel happy for the right, appropriate, and actually fulfilling reasons.

**NOTE:** *The human organism innately synthesizes happiness (even in experiences of deprivation); hence, people's positive evaluations of their lives (subjective feelings of happiness) can be corrupted by this innate function to return to a stable moving psychological baseline, even during times of suffering.*

As a state, it could be said that happiness and peace of mind refer to mental patterns and environmental dynamics that uplift embodied consciousness.

It is easy to experience the aim of human life as growth and happiness, which consists of pleasure defined as satisfaction of the needs (and wants/preferences) "we" feel. From this perspective, self-determinism is seen as leading naturally to harmony. Each person pursuing their own interests within recognized appropriate limits.

**QUESTION:** *Why do we all smile against gravity*

*when happy and not frown?*

If the aim of human [system] life is happiness and exploration, which consists in pleasure defined as satisfaction of needs (life cycles) and opportunities (potentials). From this perspective, a sense of self-purpose, self-interest, and self-integration are seen as leading naturally to harmony. Each person pursuing their own interests within recognized appropriate limits in a coordinated habitat service system of satisfiers (goods and services).

People are happiest (given what is known), when they are (at least):

1. Healthy.
2. Well fed.
3. Comfortable.
4. Safe.
5. Prosperous.
6. Knowledgeable.
7. Respected.
8. Non-celabite.
9. Loved.

### **13.1.3.2 Well-being as life-satisfaction**

Life satisfaction is (generally) a self-report measure. Self-reports of subjective well-being vary considerably in their complexity. One of the most common that asks on a 1-10 scale, "How satisfied are you with life, from 1 (terrible) to 10 (ideal)?" How much life satisfaction is reported is highly determined by how someone feels when (at the very moment) they are asked the question. In this sense, life satisfaction is a synonym of mood - the present moment psychological state. Satisfaction, then, is the label for a "cheery", "inquisitive", "joyful", "happy", "uplifting", etc., mood (i.e., an excellent, or highly ideal, mood state). Other terms for cheerful states of psychology include, but are not limited to: hedonic, cheerful, happy, positive psychology, etc.

Life circumstances, physiological and psychological health do highly influence life satisfaction scores, as we would expect. Satisfaction with life is a reflective question. Satisfaction with life measurements are evaluative measures. "You" are asked to think about how things are going in your life. Because individual life experiences influence individual decisions, and are useful in understanding and predicting behavior.

There are subjective and objective views to 'life satisfaction'.

1. Subjectively, there are 'affect' evaluations, because 'affect' correlates to a person's ongoing evaluations of the conditions in his or her life.
  - A. Individuals can examine the conditions (resources, access, opportunity, etc.) in their lives, weigh the importance of these conditions,

and then evaluate their lives on a scale ranging from 'dissatisfied' to 'satisfied'.

2. Objectively, 'self' assessments (prompted or not) may be contrasted with evaluation based upon global objective 'life' [flourishing/wellness] thresholds concerning the quality of a person's life.
  - A. Together, individuals can organize a unified information system that computes [algorithmically] the conditions in their lives, weigh the importance of these conditions, and then evaluate their lives on a scale ranging from dissatisfied to satisfied, as well as from a service quality perspective, to provide a decision service to support the intentions of everyone for the next designed iteration of the societal service system.

**INSIGHT:** Cognitive evaluation is assumed to require cognitive processing. Computation is the direction (and automation) of data processing; cognition is the direction (and automation) of meaning processing.

### **13.1.3.3 Well-being as health**

The health of a person is understood as positive physical, mental and social well-being, and it may be evaluated objectively and/or inter-subjectively (in reference to the optimal performance observed by other human beings). Health can be conceived as resulting from the fulfillment of the human needs, and from the persons internal structure and processing, including factors such as age, genetic structure, and psychological composition.

**INSIGHT:** Brains love to learn; to prepare for and optimize themselves in a dynamic and adaptable environment. Everybody wants and needs their brain to work better, and certainly when coordinating together as a society, everyone needs their brains to work at its best. The brain exists among an adaptive physiology, and thus, the overall health is equally relevant.

### **13.1.3.4 Well-being as need fulfillment optimization**

To optimize human well-being, global human need fulfillment must necessarily be optimized. Hence, optimizing the well-being of human beings requires optimization of:

1. The environmental[ly understood] system.
2. The [earth] ecology.
3. The [habitat] city.
4. The [social] cohesion (in a habitation).
5. The [food] nutrition (basis of an base organismal economy; habitation).
6. The [power] technic (basis of a socio-technical economy; habitation).
7. The [shelter] life-radius (basis of a social economy; habitation).

8. The contribution duty (basis of a trusted society; habitation).
9. The education and childhood discovery - basis of an equitable society (upbringing in a community habitation).

## 13.2 Well-being in the market

Market economists (marketists) typically indicate well-being by income and material asset acquisition ("wealth"). Market economists generally track (i.e., focus on) opulence (acquisition, growth, use without regard to need) and subjective control over objects (ownership). Market economists generally pre-suppose (inaccurately) that choices fully reflect preferences, and therein, that preferences are equivalent to needs. The presumption that choices fully reflect preferences is empirically mistaken, the implied or sometimes explicit stance is that well-being lies in making choices, whether or not these prove to fulfill predicted preferences or have other results. Preference fulfillment is often central to market economists. In practice, however, this is reduced to well-being as simply having the presence of a choice or activity.

From the market viewpoint, well-being (if it exists) consists of the fulfilling of [predicted, ex ante] preferences without accounting for outcomes.

**NOTE:** *Well-being is not simply a subjective experience of affect positivity, but is also an organismal function in which the individual detects the presence or absence of vitality and wellness.*

In the market, well-being is often defined as the satisfaction of consumer preferences (a market conception), where individuals are the best judges of their own preferences (or wants), and what is produced and consumed should be determined by the private consumption and work preferences of individuals. This argument for the satisfaction of consumer preferences appeals to intuitions of personal autonomy and freedom.

Preference satisfaction theory (the satisfaction of consumer preferences in the market) is biased because markets and other capitalist institutions themselves influence and shape values, tastes, preferences and even personalities, generating a "circularity of evaluation" (open system without feedback). Individuals are not necessarily the best judges of their wants if their knowledge or rationality is short of sufficient data.

In the market, objective indicators of well-being have traditionally been measured by indices such as the Gross Domestic Product (GDP) and the Human Development Index. Under market conditions, income has been one of the factors most extensively researched (by market economists), and together with age, sex, race, health education and marital status is reported to account for 8%-20% of the variance in subjective well-being.

**NOTE:** *In the market-State, often abstract*

*indicators rather than human indicators are used to track and measure well-being. Outcomes are highly dependent on what is measured, because what is measured affects, and often controls for, outcomes.*

Humans should not be looked at as markets. Instead, society should look at what humans need, and then, there is no need to market, because humans would contribute to have access.

### 13.2.1 Life wellness and the "Blue Zones"

There are places on the planet where people live happily and healthily for a very long time. A long-lived population is defined as a cohort of individuals who share genetic, environmental, or socioeconomic characteristics that facilitate aging for over a century. These locations and their common lifestyle habits were popularized by Dan Buettner (2012) in "*The Blue Zones: Lessons for Living Longer from People Who've Lived the Longest*". Therein, Buettner identified five places in the world where there is a high concentration of humans over age 100 who also express disability-free and disease-free life expectancy. Note that the word "blue" in the term 'blue zones' has no relevance – blue was simply the color ink initial researchers used to identify these locations on their map.

**NOTE:** *Recent research has found significant issues with the longevity attribute of so-called "blue zone" populations. In fact, blue zones have the highest levels of life expectancy, in large part, because they also have the highest levels of tax documentation fraud and poor record keeping, which why so many people "live" so long there. These recent findings call into question Buettner's original longevity-associated hypothesis. However, there is still evidence for Buettner's claim that long lived and healthy groups of people live in cultures that make all the right choices without them noticing (i.e., the people don't have to have super self-discipline, organized exercise routines or purist diets, but instead, their cultures and environments facilitate right choice). "None of these people try to live to be 100", says Buettner; "They are just products of their environment."*

The term 'blue zone' has come to mean a demographic and/or geographic area of the world where people live measurably longer lives in excellent health and happiness. "Blue zone" populations consist of individuals living in a defined geographical region who achieve extreme longevity in comparison to the average human lifespan. Identifying long-lived populations, such as "blue zones", can assist in highlighting factors that promote longevity. The people inhabiting 'blue zones' share common lifestyle characteristics that contribute to their longevity. The geographic locations themselves, besides being outside of industrialized regions, are relatively unimportant. However, it is the case that genetic,

socioeconomic, geographical, climatic, dietary, socio-political, and other general lifestyle factors all have been identified through observation as being associated with longevity.

**INSIGHT:** *Putting the responsibility of curating a healthy environment on an individual amongst an antagonistic environment is highly unlikely to create long lived wellness for the individual. It is the determinant environment of community that increases wellness, and consequently, life expectancy.*

Longevity, health, and happiness are phenomena related to individuals, as well as to populations as a whole. By identifying areas where people live the longest, Buettner and other researchers identified a set of common lifestyle-oriented longevity determinants/factors.

**INSIGHT:** *As humans, we are not biologically programmed for longevity. We are programmed for procreative success.*

Those with health and longevity in these locations had some of the following factors in common during their lifetimes. Not all locations had all of the factors in common, but all locations had some of the factors/determinants in common:

1. Natural movement – Throughout the course of your day, do you exert yourself physically without having to plan for exercise? In general, movement is a natural part of their day. The world's longest lived people create an environment that guides them into moving without having to think about it. They do not have to seek out other sources of regular daily exercise; rather, in order to live their lives, they have to do physical work. In other words, most of them enjoy physical activity incorporated naturally into their daily lives (like gardening or walking). None of them were found to exercise. They setup their lives so that they are constantly nudged into physical activity. Significantly, they walk through the majority of their life space. When they do intentional physical activity, it is things they enjoy. Presently, walking is the only scientifically proven way to stave off cognitive decline.
2. Life purpose – Why do you wake up in the morning? Do you engage in meaningful work and find purpose in what you spend your time doing? In general, those with long and healthy lives wake with a purpose (larger than themselves) every day, such as caring for grandchildren, volunteering, or other forms of social contribution. They know how to setup their lives so that they have the right outlook; they have a purpose in life. Further, they have vocabulary (a linguistic orientation)

for a sense of purpose. They know their sense of purpose, and it is active in their life. The whole idea of getting up and living each day in a meaningful way is driven by this sense of purpose.

3. De-stress and relax (down shift) – Do you spend time every day relaxing and de-stressing? Stress leads to chronic inflammation, associated with every major age-related disease. In general, the world's longest lived people have routines (or, strategies) to shed that stress (a.k.a., "down shifting"). There is a very clear moment or time when they "down shift" in their mental and physical exertion, which happens daily. Longer lived individuals utilize different ways to "shed stress" (to relax, rest, and rejuvenate), and each society has had its own traditions that translated into community embraced habits. These have varied from the religious who pray, to the Ikarians napping, or the Costa Ricans staying in sync with their natural peninsula habitat, the Sardinians enjoying their alcoholic "happy hour", or the Okinawans intentionally remembering (i.e., meditating on) their ancestors during specially set aside time each day. Typical de-stressing activities include: alcoholic happy hour; a daily nap; daily meditation/prayer/contemplation; and spending time in nature (e.g., forest bathing).
4. Mindful eating and the 80% feeding rule – With each meal, do you eat mindfully and stop when 80% full? In general, the longest lived people eat mindfully/wisely, and stop when 80% full. They engage different strategies to keep from overeating. In other words, they stop eating when stomachs are 80 percent full (primarily, due to the way in which they interact and/or arrange their environment). Different societies use different strategies to keep from overeating. The Okinawans say the "hara hachi bu" mantra before meals as a reminder to stop eating when their stomachs are 80% full. Other societies serve themselves on reasonable sized plates (not large plates), and then put the food away for storage so as not to return for another serving. Those who live long lives enjoy their meals and do not rush the feeding process. They eat with a sense of appreciation and enjoyment. As a result of this mindfulness, they realize while eating when their hunger has been addressed, and they stop themselves from pushing the limits of eating. It is estimated that they stop when~80% full. They are comfortable disposing of food that remains on their plate after they are sufficiently fed (this food is composted). In addition, these groups eat their smallest meal in the late afternoon or early evening, largest meal midday

and they don't eat after the evening meal. They fast for the rest of the day and overnight, until they break their fast in the morning (with break-fast). While it may not be necessary to follow this exact pattern, it speaks to the importance of fueling oneself well during the day and honoring hunger and fullness levels. Avoid skipping meals, which can lead to getting overly hungry and possible overeating.

5. Whole, nutrient dense foods – Do your meals consist primarily of a diversity of whole, nutritionally sufficient foods? It's estimated that about 75% of the food of these people comes from the ground. They eat high fiber meals that are rich in antioxidants, phytochemicals, vitamins and minerals. They consume a whole foods diet with sufficient diversity to ensure sufficient nutrition. They follow a flavorful and healthy dietary pattern. Virtually all food is grown in the locale, or harvested/cultivated nearby. The diet is characterized by moderate caloric intake. They consume a lot of plants and fish, and the meat most often consumed is pork. Of note, they do not take any supplements or track their food/calories in any way. They aren't overly preoccupied with what or how much food they consume. Also, meals are a time to rest and connect with food and loved ones; they aren't rushed through or multi-tasked. These dietary patterns tend to be high in anti-oxidant and anti-inflammatory substances. The Sardinians and Ikarians have embraced some version of a (valid) Mediterranean style diet.
6. Moderate alcohol intake with friends (especially wine) – If you enjoy alcohol, do you enjoy it moderately and regularly with friends? In general, they drink 1-2 glasses of unadulterated alcohol (generally wine) per day, with friends and/or with food. Scientific research has found that moderate, regular drinkers outlive non-drinkers, especially if they share those drinks with friends. They didn't binge on food or drink - they simply lived each day for its own merits.
7. Social/familial engagement including belonging and social integration – Do you spend a significant amount of your time nurturing and supporting those who you love? Spend time and expend energy with those who you consider love. Put your family ahead of your egoic/subjective concerns. Strong family and community connections. Ultimately, feeling a part of something bigger than yourself can increase quality and length of years. They "invest" time and energy in supporting and nurturing those they love.
8. Healthy behaviors and support – Do you surround

yourself with people who are also oriented toward their highest potential selves? In general, those with the greatest longevity engage in healthy behaviors while surrounding oneself with people who support, and also engage in, healthy behaviors.

9. Aesthetic environment – Maintain a beautiful environment that includes beautiful architectural interiors and exteriors and a cultivated garden of plants and animals.

The data we have on "blue zones" shows us that we can create our own "blue zone". It shows us that health and vitality is multi-factorial and encourages a holistic approach.

### 13.3 Well-being through societal engineering

*I.e., The engineering of a state of well-being for humanity.*

It is possible to structure and cultivate well-being into society at the system's level through a coordinated habitat service system (HSS) that functions through the contribution of individuals in community to InterSystem teams. It is possible to design a society where well-being is available to everyone; where well-being has been designed to be highly accessible to every individual.

A controlled engineering approach to well-being - interprets and critically analyzes the data on the state of people's lives that affect their daily existence, causing their current state of well-being and to determine if a re-orientation is necessary. In community, it is easy to assess the degree of specific need fulfillment across individuals (and HSS', cities) due to having a transparently unified resource-based (access-based) information system.

Together, human needs and well-being explicitly introduce moral criteria into the conception and appraisal of society. Genetic and biological constraints distinguish a category of needs. The recognition of genetic and biological constraints distinguishes human need from alternative approaches to wellbeing. But 'constraint' must not be confused with 'determination'.

Human mammalian constitution shapes its population's needs for such things as food and warmth in order to survive and maintain health. Human cognitive aptitudes and the bases of the organisms emotionality in childhood shape many other needs - for supportive and close relationships with others, for example. It is a non-controversial observation that all living things need nourishment, and greater states of harm and lower states of well-being result when this is not available.

Because human needs are conceived to be universal to all peoples, a operational definition of need enables inter-personal (and inter-societal) comparisons of well-being, including comparisons between significantly different cultures/societies and time periods.

The universality of human need strongly underpins

obligations to ameliorate serious harm across the globe. In the inherently interconnected real-world, such a commitment to meet the global needs of humanity facilitates a perception of the world that sees the entire population of humanity, and its ecology, as a potential moral and social community.

### 13.4 Well-being and harm

In part, harm is prevented from coming to well-being, at the societal level, through a decision system's effectiveness inquiry (i.e., harm inquiry). A decision system's effectiveness inquiry examines potential harms as the result of a decided solution's selection.

In order to examine the applicability of effective decisions in the design of a societal system, it is essential to identify several core functional human questions (Robertson, 2019):

**NOTE:** *The term "service system" can be replaced with "robot" within some of these questions.*

1. Can a human designer codify conditions under which a specified action will benefit a human?
2. Can a human designer codify relevant issues which a representative person would perceive as harmful (physical harm, privacy, humiliation, and embarrassment), and quantify/categorize these to a degree that could allow decisioning?
3. Can a human designer codify relevant environmental conditions that will modify perceived levels of harm?
4. Can a human designer quantify relevant situations where a service system action will cause differing types and degrees of harm to more than one person?
5. Can the service system identify/quantify all relevant human harms and harm-levels? Does the service have, within its construction and computational abilities, the capacity to identify all relevant types of harm?
6. Can the target service system predict, from alternative actions, the levels and types of harmful effects that those actions will cause for each potentially affected person?
7. Does the human designer who constructs/programs the service system have the capability to imbue these recognition capabilities?
8. Is the service system capable of autonomously choosing to carry out actions that could potentially cause various "harms" to one or more persons?
9. Is the service system capable of examining choices available to it, including choices to terminate its own existence? And to determine levels of

identifiable harms likely to arise for each of the full range of potentially affected persons, from each alternative robotic choice?

10. If a service system is able to select from a range of actions (including a selection of inaction that could potentially cause varying levels of types of harm to one or more persons), are the definitions of harm and the numbers of persons and the environmental modifying issues sufficiently quantifiable to allow decisions that would be acceptable to society?
11. Can the service system apply these principles statistically, i.e., taking the view that it will make "correct" decisions 90% of the time, and for 10% of the time its decisions will prove to be incorrect and harmful?"

In general, an effectiveness (harm) inquiry may identify a service, service object, or positive condition ("good") as belonging in a human access standard if and only if it satisfies conditions (1) AND (2) AND (EITHER 3 OR 4):

1. It satisfies at least one basic need or capability (that is, it either helps fulfill a dimension, or prevents harm to people's own fulfillment);
2. It doesn't harm the fulfillment of anybody's needs or capabilities;
3. It is a satisfier of at least one basic need/capability.
4. It is one of many competing satisfiers, but it is overwhelmingly preferred at a global scale for at least one dimension.

A human access standard limits the risk of harm to achieving basic human wellbeing to an acceptable threshold. The standard constituents may be included because they prevent harm to meeting basic needs, such as good health. However, the assessment of potential harm is not straightforward. The ambiguity lies in at least two aspects: what is the risk of an effect (which in turn is the product of the severity of an effect and its likelihood); and one's vulnerability to it.

The assessment of potential harm includes two elements:

1. What is the risk of an effect (which in turn is the product of the severity of an effect and its likelihood).
2. What is someone's likelihood of not being resilient to the harm of the risk's actualization (i.e., what is someone's vulnerability to the harm caused by the actualization of the risk).

It is the combination of these that together define the risk of harm. Different resources would be required to mitigate risk depending on the extent of risk aversion one chooses, as is well known in risk analysis. Because of this dependence, a standard eventually would need

to define such risk thresholds, notably for different types of people, who have different levels of risk tolerance. For instance, the average person may tolerate a few days of extreme heat or muggy weather, particularly with adequate access to fluids and shade, but the elderly may have a much lower tolerance for the same conditions. A standard in practice would be contingent on the establishment of such risk thresholds.

It is possible to actualize qualitative boundary conditions for setting human life access thresholds. Therein, there exist, for example, safety thresholds for protecting humans from unrequired potentially fatal conditions. Furthermore, harm should also include prolonged exposure to extreme discomfort. Freedom from 'extreme discomfort' in a city, for example, can be defined as freedom from prolonged exposure to air pollution, inappropriate lighting at night (dis-abling - not having white when necessary; or en-abling (healthy) - having red/amber when necessary).

Human existence gives rise to informational and material requirements at the:

1. Individual (self).
2. Technical (contribution, the habitat systems).
3. Social (global social participation).

A global human access standard for any individual in a community-type society is typically organized such that people share material resources, information, and embodied socio-conscious connection, at different levels of habitation. It is possible to identify three scales of global access:

1. Personal - household, family (e.g., dwelling, personal computer).
2. Common - families share homes and neighbours (others in the local habitat) share services and local access; commonly accessible objects (e.g., tennis court).
3. System - utility access (e.g., electricity connections, hospital service, transport services)

**NOTE:** *The complexity of interaction in relationship to object possession and social engagement. For example, in the context psychological well-being (e.g., self-esteem), once humans have other elements life and technology, such as good health and education, are likely to depend far less on material possessions, than on how people treat each other. In other words, people will consider how one another are treated as of greater interest than object possession, which in the sense of ownership may become increasingly disdained. Infrastructural and contribution coordination do not require political institutions to provide "decent" political/social rights.*

A hierarchy of questions concerning the hierarchical inclusion of requirements includes:

1. Individuals - Do the individuals have the tools of well-being in their own hands?
2. Habitats - Do the city systems fulfill the demands of their populations.
3. Network - Does the network fulfill the needs of the global population.
4. Society - Does the information standard, data standard, and computation standard orient the next iteration of society toward greater flourishing (and well-being).
5. Material - Do the material city systems, their conditions and infrastructure at the city level, share their mechanisms of function as a unified (~informational)/integrated (~material) system?
6. Survey - Do materially carried out surveys (objective and subjective) provide a whole picture of what is, what is required, and what is available?

### 13.5 Well-being and ecosystems

The interwoven relationship of ecosystems and human well-being is insufficiently acknowledged in the wider philosophical, social, human, innovation, and economic well-being literature. Material and energy transfer flows and cycles occur between humans and their biosphere that affect human well-being.

### 13.6 Well-being and the city

The essence of living in a city lies the fulfillment of human need at population scale. In the fifth century BCE, Socrates stated that the main purpose of constructing a city is to provide the people living there with vitality and prosperity (i.e., quality of life). Such statement demonstrates the firm, long-standing relationship between the two concepts of "city" and "liveliness". From this viewpoint, every city (or habitation) is essentially a means or medium of achieving happiness and vitality. One constructive component, therefore, is the overall quality of the environment. For vitality, there are various concepts developed in the West, including vitality, viability, livability and liveliness to mention a few. Except for "vitality", however, the rest of the terms are rather closely tied to the concept of livability and living together.

### 13.7 The evaluation of well-being

As a deliverable, the evaluation of well-being is an ("intelligence") assessment of overall human fulfillment. There are two main approaches to the evaluation of one person's life well-being:

1. The subjective (subjective well-being, SWB) - the person states as part of a scientific sample. The

individual (as the subjective) communicates their experience - someone internal assessment of their current state-dynamic of well being. Subjective expression primarily involves feeling features of a persons life. Feelings can, and can not, be based on systematic and deep reflection of self and the environment. Satisfaction questions, because they are reflective, cause people to think and feel about their own life.

2. **The objective (objective well-being, OWB) - the calculated data shows.** Others observe that which is self-evident from the situation given an objective information space - commonly, external assessment of someone or some group of individuals state-dynamic of well being. Primarily involves non-feeling features of a persons life (like food cycle and morbidity, health, longevity, autonomy and access to desired opportunities).

More simply, indicators can be of two types (note that a complete understanding of a situation requires both types):

1. Objective: Observable, and thus, directly measurable (quantifiable).
  - A. Observed criteria alignment (e.g., life expectancy, food intake, etc.)
2. Subjective: Self-reporting, and thus, subjectively measurable (qualifiable).
  - B. Survey (e.g., flourishing survey, happiness questionnaire, etc.)

Here, there are four criteria for constructing measures of overall well-being:

1. Can the measure be constructed from available data?
2. Does the measure enable spatial and temporal comparison?
3. Is the measure applicable to multiple scales, thereby addressing idiosyncratic, group-up, and regional dimensions of well-being?
4. Does the measure possess both objective (independently observable) and subjective (participant views) elements.

The Organization for Economic Cooperation and Development (OECD) Guidelines on Measuring Well-being include three types of indicators:

1. Subjective-based or survey-based indicators of well-being (SWB).
2. Objective indicators of well-being (OWB).
3. Composite indicators (indices that aggregate multiple metrics) of well-being. Aggregate metrics combine subjective and/ or objective metrics to

produce one measure.

### 13.7.1 Assessing the presence of well-being

**Etymological note:** 'Welfare' can be traced back to the fourteenth century, when it meant 'to journey well' and could indicate both happiness and prosperity. Isn't this what it should mean, that we are traveling the our planetary and cosmic existence well, that we are flourishing? But, in early 21st century society, the term has been adopted by the State to mean giving service to those without through force and coercion.

To have a state of well-being is to have a loosely bounded assessment of positive physical, social, and mental states; it is not just the absence of pain, discomfort, and incapacity. The objective presence of well-being requires that:

1. Basic needs are met.
2. That individuals have a sense of purpose.
3. That individuals feel able to achieve important personal goals and contribute to (participate in) society.

In other words, people feel fulfilled when they experience certain conditional states of the world, when there is:

1. Fulfillment of human needs.
2. Development and expression of human capability.
3. Growth toward the achievement of meaningful goals.

The multiple dimensions of well-being include, but are not limited to:

1. Economic access - human material needs met.
2. Physical vitality - no dis-ease or dis-abilities.
3. Emotional purpose - direction and goals in life.
4. Social cooperation - coordinated and contributed HSS (habitat service system) opportunities.
5. Personal autonomy - freedom to actualize potential.
6. Environmental stability - ecosystem material needs met.
7. Aesthetic appearance - harmonious sensory environment.

The assessment of the presence of well-being is enhanced by conditions that include supportive personal relationships, healthy and inclusive organizations, actions having effects upon the environment, good health, physical safety, enjoyable (rewarding) work, and a healthy attractive environment and diet. In this sense, well-being is not a perspective (personal or otherwise), but an approach to life whose optimization includes the fulfillment (satiation) of these different states of a person's life system.

Well-being is an abstract concept that refers to the [positive] states of a person's life. When someone

is said to have well-being, then that person's life is highly satisfactory to themselves. Well-being answers (positively) the question, "What is the state of your life?" Well-being is the communication of personal experience that captures a mixture of their life circumstances, including: how they feel and how they function. Well-being involves peoples' positive evaluations of their lives include positive emotion, desirable engagements, overall satisfaction, and meaning/purpose. From a branded perspective one could match people's common expressions of well-being with the quality-of-life variables present in "Blue Zone" locations (where well-being is highly common).

### 13.8 Quality of life indicators of well-being

*A.k.a., Quality-of-life, quality of service, quality of habitat service system, quality of life experience, vitality, livability, etc.*

In general, quality of life is the extent to which objective human needs are fulfilled in relation to personal and/or group perceptions of subjective well-being. Quality of life is an integrator of the access that is provided to meet human needs in the forms of built, social, and natural services. A high quality of life may exist when there is fulfillment (or satisfaction) of needs, desires and aspirations. Human needs are objective (universally self-evident) and desires are intentional and through action upon create resonance patterns in the environment (orientational).

**INSIGHT:** As a procedural problem, knowledge is central to the solution of an optimal quality of life.

Quality-of-life and well-being are concepts that express the degree of [cyclically completed] need fulfillment, and determine which are the most critical requirements for a given situation. Quality of life, a concept referring to persons, can be considered at the same time the ultimate goal of human development, and the central criterion that helps to characterize the intentional design of human living environments.

Note here that "human development" indices (such as, UN Human Development Index, HDI-UNDP, 1998) are a collation of objective market-State indicators and measures. Here, "objective" indicators of quality of life include, for example, indices of economic growth rate, profit rates, life expectancy, and other data, some of which would be relevant in community, and others of which would not be relevant. For example, objective measures (as metrics that matter in community) include indices of economic production, dis-ease rates, literacy rates, life expectancy, and other "Blue Zone"-type data.

Quality of life (QOL) is a general term meant to represent the two domains of well-being:

#### 1. Objective well-being

**A. [Materialization] Need fulfillment** - How objectively well human needs are met? How are needs prioritized? The degree to which each identified human need is objectively met, known as 'fulfillment'.

1. Objective is something observed.

#### 2. Subjective well-being (happiness)

**A. [Self and social perception] Life satisfaction**

- The extent to which individuals or groups perceive satisfaction or dissatisfaction in various life domains. Perceived satisfaction with material and social life, given what is possible and what is current.

1. Subjective is a question that is asked.

These are Indicators of fulfillment quality (i.e., indicators of well-being, quality-of-life). For example, the current temperature of a human body (a.k.a., body temperature) is an indicator of objective well-being of that human body. More simply, body temperature is an indicator of well being, measured in some unit(s). For example, a rise in the population of mites is an indicator of decreasing health.

Well-being can be viewed from several perspectives:

1. **Objective [quality] measures** - human needs, wants and preferences fulfillment.

2. **Subjective [objective] measures** - question formulation through to response delivery.

A. Perception is the self report by an individual about their situation. The question here is the request for a self report.

3. **Market measures** - job satisfaction (subjective) and income (objective).

Or, viewed another way:

1. **Objective indicators** are usually based on the counting of occurrences, events or activities, while subjective indicators are based on reports or descriptions from individuals on their feelings and perceptions about themselves and the world around them. Objective indicators measure include, but are not limited to: access and participation opportunity, contribution opportunity, [habitat] service quality; autonomy (and presence of coercion), bodily health, etc.

A. The objective approach makes comparison possible, but at the potential risk of denying the inherently subjective nature of quality of life.

2. **Subjective indicators** (a.k.a., the subjective approach) are measurements of life satisfaction and happiness.

A. The subjective approach takes personal

and preference ("cultural"/environmental) differences seriously, but under complex aberrant conditions subjective indicators have proven difficult to determine the statistical correlation between subjective feelings and objective indicators (the correlation between health and life satisfaction, as well as flow and happiness, are notable exceptions).

A holistic view requires an integration of the objective and the subjective to form an integrated understanding, and therefrom, a mutually beneficial and optimized decisions.

### 13.8.1 Subjective [indicators of] well-being

*A.k.a., Feeling well-being, well-being as the data from an expressed feeling, quality of life survey, life quality assurance inquiry.*

Subjective well-being (SWB, subjective satisfaction , now) is data based on individuals' reports of what makes their lives good (Read: well, happy, optimal). Subjective well-being sciences in which people's evaluations of their lives are studied. SWB includes diverse concepts ranging from momentary moods to global judgments of life satisfaction, and from depression to euphoria. The overall subjective well-being of individuals includes the multiple dimensions of well-being that impact an individual's evaluation of his or her current [felt] state. These dimensions include, but are not limited to: economic, social, psychological, physical, and personal autonomy (Ryff, 1995).

More fundamentally,

1. From the awareness threshold of [conscious] pain:
  - A. **Suffering** (lowest happiness, and degrees thereof, **pain states**),
2. To the awareness threshold of [conscious] flow:
  - A. **Flowing** (highest happiness, and degrees thereof, **flow states**).

Here, there is a subjective reports of perceptions, and then, an informed assessment of that report (as it is integrated into the unified information space). The assessment is one of people's experiences and feelings. The subjective well-being literature relies on how to optimally collect and track people's perceptions of their life circumstances and mental states. There are different techniques to measure subjective well-being. Subjective well-being is a multidimensional evaluation of life, including cognitive determinations of life satisfaction as well as affective evaluations of moods and emotions.

**NOTE:** Under aberrant conditions it is likely some people might be unable (or unwilling) to adequately articulate their level of well-being. The inclusion of a human evidence-based objective criteria (as the tool in the approach)

can "give a voice" to those who are unable to adequately articulate their level of well-being.

Of note, inequality in [socio-economic] access is one of the greatest determinants of poor subjective well-being.

Subjective well-being simply refers to subjective life satisfaction. In other words, satisfaction with life domains, which may be different depending upon the specific societal configuration in which a subject expresses their state of well-being (e.g., social, decision, lifestyle, material, marriage, work, income, housing and leisure, etc). In order to capture SWB, researchers usually rely on questions about happiness or life satisfaction, self-reported adequacy of life domains and/or frequency of good and bad feelings. All those aspects are usually taken as independent constructs, but show to be significantly correlated.

1. Are there feelings of positive affect (pleasant emotions and moods) most of the time?
2. Are there experiences of conflict, aggression toward others, or negative affect?
3. Are there feeling of happiness, or its absence. Are there feelings of depression, or its absence.
4. Are there feelings of living a meaningful, purposeful life?
5. What is a "good" life experience to you, and what would a "better" life experience than yours now look like?

Subjective well-being (or personal well-being) asks people directly how they think and feel about their own well-being, and includes aspects such as life satisfaction (evaluation), positive emotions (hedonic), and whether their life is meaningful (eudaimonic).

Here, a personal-subjective assessment captures a personal analysis and assessment (as best as can be communicated) of one's own circumstances, as what one thinks and feels (a self-assessment), and why (self-analysis). How happy you are?

In the subjective, quality of life is a multidimensional term that expresses how a person evaluates his/her own situation in society, and how that expression is communicated to the rest of the population and input (as feedback) into our unified information system. After a person evaluates his/her situation, this information must be translated by the information system (scientist or other data collector-computer), given what is known about the human linguistic system, and input into an overall Quality of Life assessment.

The subjective quality of life category depends upon factors such as:

1. The psychosomatic state of the individual.
2. Age.
3. Access [economic] situation).
4. Social situation.

5. Felt need fulfillment.
6. Felt fulfillment of personal desires and preferences.
7. History (background and trauma).

Subject well-being (SWB) is assessed by individuals' or groups' responses to questions (prompted self-report) about happiness, pleasure, fulfillment, life satisfaction, contribution, and welfare or financial success (market only). The relation between specific human needs and perceived satisfaction with each need can be affected by mental capacity, social context, ecological context, cultural context, information context, education context, temperament context, health context, and the like, often in quite complex ways.

An individual's current quality of life could be assessed on the following basis:

1. Personal fulfillment - the need to reach one's potential in all desired areas in life.
2. Identity - goes beyond psychological "Sense of self". Identity as a sense of self in relation to the outside world. Identity becomes a problem when one's identity is not recognized as legitimate, or when it is considered inferior or is threatened by others with conflicting identifications. Hence, for some psychological sets (belief sets) cultural security as the need to maintain past conceptions.
3. Freedom is the condition of having no physical, political, or civil restraints; having the capacity to exercise choice in all aspects of one's life.
4. Distributive justice is the need for the fair allocation of resources among all members of a community; the global mutual access [via open standards] as a matter of justice (Read: distributive justice).
5. Participation - is the need to be able to actively partake and participate in and influence society (psychically and informationally).

The following questions are survey data on, and facilitate a greater understanding of, [personal] states of subjective well-being:

1. Overall, how satisfied are you with your life nowadays? (answer on a 7 point scale from 'completely satisfied to completely dissatisfied, Andrews and Withey, 1976)
2. Overall, to what extent do you feel the things you do in your life are worthwhile?
3. Overall, how happy do you feel? Taking all things together, would you say you are: very happy, quite happy, not very happy, not at all happy? (Inglehart, 1997)
4. Overall, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead? (Eurobarometer survey)

5. Overall, how anxious do you feel?
6. Overall, how much aggression or depression do you feel?
7. Overall, if you had more money, would you be doing something different with your life (in terms of work, activities, contribution)?
8. Overall, do you feel like you belong and are deeply connected to those around you, and those with whom you spend the most time?
9. Overall, are you able to maintain strong social bonds throughout life?
10. Overall, are you able to benefit from environmental opportunities?
11. Overall, are you able to access necessary resources, services and products?
12. Overall, are you able to contribute to the fulfillment of others?
13. Overall, are you able to participate societal decisioning that affects yourself?
14. Overall, are you having adverse life experiences?

Subjective well-being inquiry techniques include, but are not limited to (questions and evaluation criteria):

1. Positive and negative affect scale (PANAS) - a questionnaire that asks someone to identify the extent to which any of ten mood types (10 positive and 10 negative) has been felt through a five point scale within a period of time, and how frequently. During the interview, the same day of the interview, during the past few days, the week before the interview, the past few weeks, the past year and in general. The twenty items describing the mood types are (there are variations): interested, distressed, excited, upset, strong, guilty, scared, hostile, enthusiastic, proud, irritable, alert, ashamed, inspired, nervous, determined, attentive, jittery, active and afraid.
2. Satisfaction with life scale (SWLS) - a questionnaire that asks someone to compare one's life to the ideal, analyse the conditions of one's life and achievements and one's satisfaction with them, along a scale. The five items are: 'In most ways my life is close to my ideal', 'the conditions of my life are excellent', 'I am satisfied with my life', 'so far I have gotten the important things I want in life', 'if I could live my life over, I would change almost nothing'. From 'strongly disagree' to 'strongly agree' representing the level of agreement of the respondent with the statements defining each of the five items.

In assessment of subjective quality of life (or, SWB) reports, one possible goal is to create a tool that will capture the weighting (i.e., value system) that is being

used by a particular person (or group of persons) at a particular time and place. The value system may be explicit, as is the case with Community (because it is openly designed), or it may need to be determined (because it is not explicit or it is secret) through the following process, which community does naturally as it iterates:

1. Determine relationships among needs, their importance, and their fulfillment. Determine possible between fulfillment and importance.
2. Determine and group types of requirements, deliverables, tasks, and resources (and amount of capital, market only) required to fulfill each need.
3. Determine variation in weights (between #2) by population characteristics.
4. Determine variation in overall from one city/zone system to another.
5. Determine variation in overall behavior (subjective) and biometrics (objective).

### **13.8.1.1 Happiness (subjective happiness; indicator of well-being)**

**APHORISM:** *We hunger for happiness that sustains us.*

'Happiness' can mean pleasure, life satisfaction, positive emotions, a meaningful life, or a feeling of belonging, feeling of contentment, actualizing one's fullest potential, among other concepts. Levels of "happiness" is often established through life satisfaction surveys and scales where people rate the extent of their feelings of 'happiness' on a numbered scale. In surveys of early 21st century society, what is generally called "happiness" (as measured through these tools) is 'contentedness' with life situation (and not 'happiness').

Happiness could be viewed as positive affect, with unhappiness seen as negative affect. Pleasant and unpleasant affect reflect basic experiences of the ongoing events in people's lives. The affective components of well-being described above reflect people's ongoing evaluations of the conditions in their lives.

The experiencing of more positive emotions in relation to negative emotions has been shown to predict subjective well-being (Diener, 2003; Kahneman et al., 1999). Question: Are there positive relationships and challenges in life? If all emotions were placed on a spectrum ranging from pleasant to unpleasant, positive emotions (also referred to as positive affect or positivity) include emotions on the pleasant end (e.g., feeling grateful, upbeat; expressing appreciation, liking), while negative emotions (negative affect or negativity) represent the unpleasant end (e.g., feeling contemptuous, irritable; expressing disdain, disgust, disliking) (Fredrickson & Losada, 2005). Emotions have been explained as arising from an evolutionary perspective because they tend to lead to specific action probabilities.

**NOTE:** As with many of these terms, there are a multiplicity of meanings that 'happiness' (or any of these terms) can mean to just anyone in early 21st century society, where the aberrant is often normal and the actual is often obfuscated on purpose.

Happiness is an emotional response to an outcome, which is emergent and interrelated through space and time. Joy is a high-level felt experience of happiness that comes from doing what "we" are designed to do, no matter the outcome.

**NOTE:** *The opposite of depression is not happiness, it is vitality.*

Happiness may be considered a subjective outcome metric; it results from pursuing various goals other than happiness, and isn't directly tied to success or failure of achieving those goals. It can be a response to external inputs and conditions, and it can be synthesized in a neuro-chemical manner involving a conscious shift in intention to be happy (given the circumstances). All humans direct toward (i.e., want or need) happiness, even if the conscious experience is subjective (i.e., means different things to different people).

Fundamentally, all humans *want*, though at a more fundamental level, *need*, to experience happiness frequently in their lives; even, if it is experienced differently by different people. Happiness [at least] involves the fulfillment of human needs. A concrete set of needs exist, and their fulfillment at a global level, which may differ from person to person with electro-bio-chem-psycho individuality, is likely to generate a frequent fulfillment of happiness in the population's personal lives. Here, human needs could be considered the common social environment.

Happiness is always, in part, synthesized through neurochemistry, but it may also be the result of the intention given an otherwise unhappy environment (e.g., given a prison who is serving life imprisonment and experiences happiness).

In practical social application, happiness is a state of [human] being brought about by a set of predictable intrinsic and extrinsic processes that fulfill needs and/or synthesize happiness (electro-biochemical and conscious). In this sense, it could be said that happiness comes from the process of fulfilling need, which involves principles related to human need fulfillment. A happy quality of life does not necessarily come from seeking happiness directly, but instead, striving to live a purposeful and meaningful life is how happiness, as a frequently experienced quality of life, is sustained. In part, the application of strategies to increase [the experience of] happiness is a measure of leading a fulfilled life.

In other words, the experiential state is happiness is likely to be generated through the sufficient fulfillment of human needs, and it can also be synthesized by coming to appreciate one's life experience and the

other conscious entities therein. In other words, the experiential state is happiness is likely to be generated through the sufficient fulfillment of human needs, and it can also be synthesized by coming to appreciate one's life experience and the other conscious entities therein.

Happiness index:

1. What is the person's perception of their own happiness?
2. How do they think they are viewed by others in different social environments?
3. How do they think they compare with others' happiness and unhappiness?

Mathematically, happiness could be expressed as:

- $\text{happiness} = \text{thresholdNeeds} * (1 + \text{otherNeed1} + \text{otherNeed2} + \dots + \text{otherNeedN})$ , where thresholdNeeds is either 0 or 1.

In the market, there is an additional abstraction, equating money as the "means" of fulfillment (Note: In community, this abstraction is note encoded):

- $\text{happiness} = \text{thresholdMoney} * (1 + \text{otherNeed1} + \text{otherNeed2} + \dots + \text{otherNeedN})$ , where thresholdMoney is either 0 or 1.

### 13.8.2 Objective [indicators of] well-being

*A.k.a., Well-being data without felt bias.*

Objective well-being (OWB) is based on a measured criteria of requirements that a human as a member of the species should have satisfied in order to lead a full, self-actualised, or good life, given what is known (i.e., given that which is objective). Objective well-being refers to objective indicators and an inquiry into the linkages between objective and subjective measures. Objective well-being is based on human needs and values.

When determining the objective state of well-being, the subjective and observation reports are analyzed statistically with previous information.

The two primary indicator types are:

1. Social [quality] indicators.
2. Material [economic] indicators.

Well-being may be objectively measured by providing data on the fulfillment of common need (frequency and composition):

1. Measured by access opportunity and actualization.
2. Measured by access quality.
3. Measured by access disparity (distributive justice).
4. Measured by health (psychology and physiology).

The access view could be extended to view well-being as access to:

1. Access to resources (made into useful objects).
2. Access to opportunities (made from useful services).
3. Access to conditions (made from useful experiences).

The concept of human needs can be universalized to the human system, and quality-of-life is the quality of the personal experience therein. Some human "societal" systems account for human needs, resources, and their ecology, and others account for it less. In part, well-being is identified through those services and goods that satisfy substantive individual needs.

**QUESTION:** *What are the indicators of human well-being based on universal characteristics. Here, the human needs are not necessarily viewed as drivers of human behavior, but as human and societal requirements for well-being.*

It is possible for objective (or external) measures to not track with self-reported (or subjective) measures. People may be feeling highly satisfied with a life way that seems poor by objective measures. It is important to remember here that the idea of synthesized happiness is a real physiological effect. Subjective well-being is by definition experiential. Comparing what people think with objective measures about their situation provides valuable and useful data on society. Objective measures of well-being come from observed and actual conditions and do not depend subjectively (circularly) on the respondent's own perceptions. Thus, the goal is to compare a subjective measure of happiness or satisfaction with an objective measure of material well-being (need fulfillment, not GNP per capita).

In the simplest of strategies, measurement would consist of two distinct scales to assess each item regarding a human need; one of the scales would record the degree of fulfillment and the other would record the relative importance (priority) of the need.

The following are common and market-State transposed indicators for human habitat [city] service and quality of life:

1. Economy.
2. Education.
3. Environment.
4. Energy.
5. Finance.
6. Fire and Emergency Responses.
7. Governance.
8. Health.
9. Safety.
10. Shelter.
11. Recreation.

12. Solid Waste.
13. Telecommunication and innovation.
14. Transportation.
15. Urban Planning.
16. Waste water.
17. Water and Sanitation.

Further, it is possible to observe the state of people's lives along the four dimensions of human societal organization:

1. Material (economics, access, aesthetics).
2. Social (moral, understanding, belonging).
3. Decision (autonomy, self-direction, contribution).
4. Lifestyle (flow, education, opportunity).

Analyze the state of people's lives that cause their current state of well-being using the core and stabilizing values of a community-type society (only 3 core shown below):

1. Freedom.
2. Justice.
3. Efficiency.

### **13.8.2.1 Threshold needs (basic needs)**

Threshold needs have two primary characteristics:

1. Threshold needs are things you cannot make yourself and must acquire.
2. After the organism has passed the threshold required to meet (or fulfill) the need, focusing on the need further will yield diminishing returns.

The basic needs of future generations of humans will be the same as those of present humans. To avoid serious harm and to participate and act within future human societies people will require the same logical preconditions: not just survival, but health and autonomy. This stems from the biological, physiological and psychological foundations of human needs. Until the genetic make-up of *Homo sapiens* changes significantly, it may be assumed that the same universal satisfier characteristics will apply.

The most basic of human needs include food, water, and shelter. A major ecosystem provisioning service is to provide food through culturing soil interactions (Daily et al., 1997; Sandhu et al., 2007), pollination (Losey and Vaughan, 2006), and animal and fish stocks (Holmhund and Hammer, 1999). Similarly, the production of water for human throughput, irrigating, and manufacturing, and other systems is a primary (life) provisioning services of numerous ecosystems (Daily et al., 1997; Wilson and Carpenter 1999). In addition, ecosystem services provide for the production of supplies (wood, peat, fossil fuels, and running water) for heating, electrical production, fuel generation, and hydropower generation (Daily et al., 1997; Guo et al., 2000) and the production of fiber and building materials from ecosystems (Raffestin

and Lawrence, 1990). Human Contribution to harness ecosystem services to habitat services is vital. Basic human requirements are often supported by natural ecosystem services. Relationships between ecosystem services and personal and community security (particularly in the inner city) have been demonstrated through green design projects (Kuo et al., 2001). Aggression and crime reduction has been documented in areas with some natural greenery or parks (Kuo et al., 2001). Ecosystem services have even become a focus in some national security issues involving water resources and poverty and agricultural security (Sandhu et al., 2010)."

While basic needs are universal, many goods, services, activities and relationships required to satisfy them are environmentally (and temporally) variable. Needs for food and shelter apply to all peoples, but there are a large variety of cuisines and forms of dwelling which can meet any given specification of nutrition and protection from the elements (these need satisfiers are distinguished from needs by Max-Neef). Need satisfiers are contextual, whereas the needs are not significantly relative to context.

A conceptual bridge be built to link basic needs and specific satisfiers using the idea of 'universal satisfier characteristics'. If we define 'satisfier characteristics' as that set of all characteristics that have the property of contributing to the satisfaction of our basic needs in one or any context, then we can in principle identify a subset of universal satisfier characteristics (USCs): those characteristics of satisfiers which apply to all human contexts. USCs are thus those properties of goods, services, activities and relationships which enhance physical health and human autonomy in all societies. For example, calories a day for a specified group of people constitutes a characteristic of (most) foodstuffs which has transcultural relevance.

There is a threshold need for water, food, shelter (true needs), and also, contributed-distribute access (i.e., freedom and distributive justice).

Well-being basic indicators:

1. Basic needs (food, shelter, water, sleep, medical, power).
2. Safety.
3. Belonging.
4. Esteem.
5. Self-actualization.

Well-being is a state of being where all members of a community:

1. Have economic security.
2. Are respected, valued have personal worth.
3. Feel connected to those around them.
4. Are able to access necessary resources.
1. Are able to participate in the decision-making

process affecting them.

### **13.8.2.2 Itemized Indicators of human well-being**

The following is an itemized list of indicators of human well-being, used in common parlance (i.e., the indicators of):

1. Physical, psychological, social, cultural, economic, governance.
2. Rank personal happiness, personal values, personal preferences.
3. Well-being, health (physical, psycho-sociological), time use.
4. Physiological [health] attributes to be tracked as indicators:
  - A. Diet.
  - B. Movement.
  - C. Exposure to toxins.
  - D. Disease and illness rates.
  - E. Life vitality duration.
  - F. Joy and depression.
5. Example indicators of these above attributes would include consumption rates of local resources for some geographic location, ingestion of toxics through food, or reported participation in outdoor exercise. Although the brain is part of the body, psychological and physical health were purposefully separated to highlight their respective importance to human well-being, mirroring the efforts of more general human well-being frameworks (i.e., GNH).
5. Psychological [mental] attributes to be tracked as indicators:
  - A. Emotional, spiritual, and cognitive health. The emotional attribute of this domain includes the experience of positive feelings, no depression, or anxiety. The experience or condition which is now known to be positively and negatively influenced by exposure to natural environments, or simply the knowledge that those environments exist (also called existence value). Incidence of depression and anxiety or the capacity of short-term and working-memory.
6. Social (cultural) attributes to be tracked as indicators:
  - A. The “cultural” is commonly defined as a system of shared beliefs, values, customs, behaviors and artifacts that humans create and pass on to future generations. While social attributes related to natural resources are most commonly associated with indigenous groups, this is not exclusive as all human populations have social components that depend on natural resources to some degree (e.g. fisheries and mining).

Additionally, as with all the domains, social attributes and indicators are likely to overlap with those from psychological, social and physical domains.

- B. Attributes of culture related to the wild environment include traditional resource stewardship practices, food collection and preparation, language, and natural resource-based legends.
- C. Social research has found that social interactions where extentionality and belonging exist are among the primary determinants of overall well-being. Social health is most often encapsulated in the concept of social capital, and includes the attributes of strong families and friendships, and community [information-decision] cohesion. The societal environment provides a variety of opportunities for people to develop social ties while engaging in outdoor activities, environmental stewardship, or passing down knowledge. While there are few specific examples of indicators of social health related to the environment, they could include things such as self-reported participation in outdoor activities with family members, the number of generations of family who engage in outdoor activities together, the frequency of social events held in the city environment, or the frequency of participating in parties highlighting locally-collected food or events.
7. Economic (domain) attributes to be tracked as indicators:
  - A. Economic health is traditionally the most commonly measured domain of human well-being.
  - B. Income, income distribution, purchasing power.
  - C. Access (and access opportunity) distribution.
  - D. Access to meaningful contributions.
8. Governance (domain) attributes to be tracked as indicators:
  - A. Governance refers not to specific laws or politicians, but to the way that power (over others) and decision-making (subjectively) is structured within society.
  - B. Several studies have explored how people's experience with environmental governance influences their overall satisfaction and sense of empowerment, and thus human well-being. Can someone effect change in their lives, and can they participate in control over their environment? Common attributes from these studies include trust in decision-making processes, social justice, transparency. Indicators for decisioning include self-reported

trust in decisioning as well as objective measures of opportunities for the public to participate in decision-making and the outcomes of public policy differentially affecting diverse demographic groups.

### **13.8.2.3 Well-being metrics and Interventions**

A crucial distinction between well-being metrics and potential interventions [in their use] is that a well-being metric does not dictate an intervention, but is data for developing an intervention that will influence [or control] a metric in a positive/intended direction.

Metrics are a directional requirement for the intentional state change of society. Once well-being metrics are widely recognized as a directional requirement for society, conceptually, one would like such measures to be supported by those with the ability to begin building an integrated habitat service system and underlying community information structure.

## **14 The criteria for well-being**

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*A.k.a., The elements of well-being, the needs of well-being, well-being needs, well-being elements, composition of well-being, factors of well-being, criteria of well-being, dimensions of well-being, indicators of well-being, measures of well-being, well-being outcomes, measurable categories of well-being.*

Well-being is state of successful, satisfying engagement with one's life and the realization of one's full physical, cognitive, and psycho-emotional potential.

The two distal goals of well-being are:

1. Positive affect, emotion, and experience.
2. Cultivation and expression of one's full potential.

The categories (elements, needs) of well-being are describing the outcomes of what a flourishing individual may have or strive (direct) toward.

In general, well-being has five to eight (five or more) measurable elements (in the context of any individual), each with three properties (identified below):

1. **Emotion of the type positive** (happiness and life satisfaction).
2. **Engagement** (the flow cycle).
3. **Meaning** (understanding and purpose).
4. **Relationships of the type positive** (social connection and belonging).
5. **Accomplishment** (goal achievement).
6. **Competence** (the ability to exert mastery over the environment).
7. **Health** (mental and physical).
8. **Freedom and contribution** (autonomy and responsibility).

These elements of well-being, and the human needs in general, are what a human free of coercion chooses to do for its own benefit (i.e., this is what a free person would pursue). Well-being's five or more elements comprise what free people will choose for their own benefit.

Each measurable element of well-being must have 3 properties to count as an element:

1. It must contribute to and/or optimize well-being.
2. It must be pursued for its own benefit, and not to get other elements (other benefits).
3. It must be defined and measured independently of other measurements (Read: exclusivity).

There exist both subjective and objective variables in computing [the elements of] well-being measures:

1. **Subjective measure** - Positive emotion is a subjective variable defined by what someone thinks and feels.
2. **Subjective and objective measures** - Engagement, meaning, relationships, and accomplishment have both subject and objective components since someone can believe they have engagement, meaning, good relationships and high accomplishment, and be wrong or deluded.

Therefore, well-being is a combination of feeling 'well' (good, excellent, etc.) as well as actually having meaning, good relationships, and accomplishment.

The three subjective and objective data inputs for well-being:

1. **Self-reported** (prompted assessment of self and social) - life-satisfaction and flourishing (indicators of 'happiness').
2. **Quality of life** (observed and prompted quality of conditions assessment) - 'conditions' flow indicators of surviving and flourishing.
3. **Material sufficiency** (observed material resource and distribution assessment) - 'resources' flow indicators of surviving and flourishing.

Martin Seligman (2002) suggested that well-being research could be organized into a framework for individual well-being and flourishing that built upon and added to his initial categories.

**QUESTION:** *What are the conditions and actions in life that are highly likely to increase current and long-term happiness?*

According to Seligman individual well-being and flourishing encompass [at least] five independent components (PERMA):

1. Positive emotions.
2. Engagement.
3. Positive relationships.
4. Meaning .
5. Accomplishment.

Each of these components was chosen based on three criteria:

1. It contributes to well-being.
2. It is pursued for its own sake.
3. It is independent of the other components.

A simplified view of the elements of *well-being* may be:

1. **Positive feeling** - emotions and relationships that intrinsically generate feelings of wellness, purpose and motion.

- A. **Positive relationships** - an integrated and sustainable relationship with ourselves, others, and the environment. involvement of, and the ability to establish, strong trust, empathy, affection and intimacy.
2. **Flow (optimal engagement)** - engagement in the highest potential [becoming] cycle of life, the flow cycle.
3. **Meaning** - contribution is how one fits into the lives and information systems of all others. Meaning refers not only to belonging and contribution, but also about understanding all information in potential presence in the world.
4. **Accomplishment** (growth in ability to exert mastery over the environment. Accomplishment allows the individual a measurable way to know their actions are meaningful and to allow them to feel efficacious in their actions. Unlike meaning, accomplishment is more focused on the feedback being given back from the environment than it is on what the individual is contributing (Seligman, 2011).

Elements of *well-being* (detailed view):

1. Positive emotions - regenerative synthesis of a happy state of being.
2. Engagement - ability to grow in potential, and restore ability to express potential.
3. Meaning - understanding and purpose in daily life.
4. Positive relationships - positive interrelationships with other consciousnesses.
5. Accomplishment - goal setting and accomplishment.
6. Health - foundational mental and physical constitution/composition to carry about abilities.
7. Contribution - sharing and working with others.
8. Competence - mastery over environment and autonomy (or self-direction) in navigating life.

The elements of *well-doing*:

1. **Meaning** - Purpose in, and autonomy of, integration.
2. **Sustainability** - Continuity of cycle; regenerability.
3. **Connection** - Understanding; to see and be interconnected.
4. **Affect** - How you feel; how someone feels.
  - A. **Positive affect** - feelings that "we" want more of for ourselves and loved ones. For example, the feeling of flow and wellness; to feel joy and happiness and pleasure.
  - B. **Negative affect** - feelings that "we" want less of for ourselves and others. For example, the feeling of hate, anger, jealousy, fear.

Elements of self-being; being self-directed and self-empowered (basic view, Tony Robbins needs model detailed in the Social System):

1. Certainty.
2. Variety.
3. Significance.
4. Love & Connection.
5. Growth.
6. Contribution.

Elements of a well self-being (mixture view):

1. Certainty (Meaning & Survival).
2. Variety (Exploration & Discovery).
3. Significance (Accomplishment & Recognition).
4. Love & Connection (Positive emotions & appreciation).
5. Growth (Flow & Creation).
6. Contribution (Positive relations & Participation).

Notes on relationships between the elements of a well self-being:

1. The psychological human needs are different forms of positive feeling (or positive emotions). For instance, someone can feel significant, loved, secure, stimulated, growing, and altruistic.
2. Engagement and flow can represent the interaction between uncertainty and certainty, and can also be represented by the interplay of connection with self, significance, and growth.
3. Meaning and achievement are highly related to significance, but both meaning and achievement can be found with any of the needs.
4. The self-being needs serve as both pathway and gate for the different categories of well-being (Read: PERMA).

The emotional, psychological, and social factors of well-being include:

1. High emotional well-being:
  - A. Positive affect (positive emotions and relationships).
  - B. Negative affect (low).
  - C. Life satisfaction.
2. High psychological well-being.
3. Self-acceptance.
4. Personal growth.
5. Purpose in life.
6. Environmental mastery.
7. Autonomy.
8. Positive relations with others.
9. High social well-being.
  - A. Social acceptance.

- B. Social actualization.
- C. Social contribution.
- D. Social [value] coherence.
- E. Social [information] integration.

When there is high emotional, psychological, and social well-being, then there is highly likely to be thriving. Thriving is a basic sense of feeling that one's life has meaning and that one has what one needs in life to be well.

Eudaimonic psychology recognizes three universal needs (happiness):

1. **Autonomy** - what a human free of coercion chooses to do for its own sake (intention).
2. **Competence** - ability when interacting with an environment, over time and intention, leading to mastery in interacting with the environment.
3. **Relatedness** - what consciousness feeds back as meaning, integration into a larger whole of understandable objects (spatializations) and relationships (conceptualization).

In freedom psychology, freedom is a construct, and only by measuring the elements to a real-world object is there an overall picture (visual, useful meaningfully) of how much (quality/quantity) freedom there is. The measurable elements of freedom are (include), at least:

1. Is there a lack of coercion; is there coercion? Is there the presence of uncoerced choice? Note that this may not be solely observational.
2. Is there a feeling of happiness in one's ability to self-direct their life? Note that this may not be solely self-reported.
3. Is there appropriate challenge in contribution and exploration in life? Note that in concern to self-learning/growth, this is generally self-reported, and that in concern to social-learning/growth, this is generally observational (via standard, common procedures).

**NOTE:** *In the market where there is a lack of unification and integration, true social-growth (in knowledge of oneself and a material environment that enables well-being) is often mistaken for financial-profit, market and commodity, growth.*

#### 14.1 Happiness measurable elements (categories) of happiness are:

Happiness is a real "thing" (conscious feeling) defined by the measurement of life-satisfaction with three aspects. Positive psychology recognizes three elements of happiness (i.e., the three universal needs of a positive psychological state of conscious-experience):

1. **Positive emotion** - feeling loved and an extensional self-directional state, in the moment). Positive emotion is characterized (represented, signed) by good feelings, and the feeling of being positively energized and self-directed moment to moment [leading to the flow cycle].
2. **Engagement** - being consciously present in the flow of life relationships. Engagement is the actual experience of 'flow', cyclically.
3. **Meaning** - behaving through the awareness of relationships. To have an awareness of a set of relationships is to have belonging [to that set of relationships]. In this sense, meaning is belonging. "To belong" means that "to contribute" will likely feel good, because to contribute to 'the all' means that, at its highest potential, the all can contribute back to "you." contributing to something greater than the individualized self is most likely an act that naturally generates a happy state in individuals among a population engaged in that behavior.

Each of these three feeds into life satisfaction and is measured entirely by subjective report.

## 14.2 Elements of physiosphere (conscious embodiment):

Elements of the physiosphere (conscious embodiment):

1. **Information** - Informational systems interconnect the habitat, and everyone therein. Humans have information input, process, and output requirements.
2. **Materials** - Spatial materials interconnect all service support systems through the technical service system to becoming architecture that provides appropriate structure to contain the remaining set [satisfiers] of life-support needs. Humans have spatial input, process, and output requirements.
3. **People** - Other conscious embodiments (i.e., other people).

## 14.3 Survival measurable elements

Elements of survival:

1. **Gravitosphere** (gravity and land for moving on).
2. **Atmosphere** (atmosphere for breathing and moving in).
3. **Water** (*hydrosphere* for planetary life).
4. **Nutrition** (food; *ecosphere* for planetary organism complex).
5. **Shelter** (clothing and building; *archosphere*; architecture; for organism protection).
6. **Power** (energy and temperature; *enersphere*;

electricity; for organism extensionality).

Elements of lifesphere (life service system):

1. **Architecture** (to bound environment).
2. **Water** (to start environment).
3. **Nutrient** (to recycle environment).
4. **Medical** (to restore environment).
5. **Power** (to change environment).

Each element is a mix of materiality and information:

- A. *Material* [re]-cycling coordination and habitat integration.
- B. *Informational* coordination and integration.

## 14.4 Technical support measurable elements

Elements of technosphere (technical service system):

1. **Data processing** (Computational systems).
2. **Information processing** (Communications & Interface systems).
3. **Materials cycling** (FAIT & Recycling systems).
4. **Transportation cycling** (Distribution & Transportation systems).

Each element is a mix of materiality and information:

- A. *Material* [re]-cycling coordination and habitat integration.
- B. *Informational* coordination and integration.

## 14.5 Exploratory support measurable elements

Elements of explosphere (exploratory service system):

1. **Technology development** (produce newly applicable, useful spatial-informational systems).
2. **Science and research** (study and discover through to new integrations/conclusions).
3. **Art and music** (social entrainment creations).
4. **Recreation** (social leisure activities).
5. **Learning development** (education and mentoring).
6. **Consciousness** (consciousness exploration, restoration and re-/de-focusing).

Each element is a mix of materiality and information:

- A. *Material* [re]-cycling coordination and habitat integration.
- B. *Informational* coordination and integration.

The conception of 'worthiness' recognizes three universal

needs of living:

1. **Explore** life by exploring what makes life worth living.
2. **Understand** life by understanding what is flourishing, well-being, happiness, life-satisfaction, etc.
3. **Build** life by building the enabling conditions of a life worth living, a 'well' human life.

The conception of life as re-cycling motion involves the universal operationalizable needs of motion: out, in, together:

1. The need for motion to complete.
  - A. To embodied consciousness there is feeling (visceral need).
2. The information about understanding the need for motion to complete.
  - A. To consciousness there is, or is not, informational awareness of need.
3. Together, a spatial-informational system that coordinates our common need to complete motion.
  - A. It is possible to formalize the fulfillment of needs via a habitat service system, brought into existence through the need to contribute itself.

For example,

1. The need for 'nutrition' (material-energy recycling) causes food seeking behavior, and 'flavor' [feeling to consciousness] directs consciousness (...under non-aberrant conditions where flavor may be used to trick consciousness). Can consciousness distinguish between what is optimal.
2. The need for self ('self-development') and social ('contribution') causes information seeking behavior ('exploration').

The conscious conception of real "things" entails three needs:

1. Objects (real objects) - bodily interface
2. Concepts (real concepts) - mental interface
3. Consciousness (self-integration of real objects and concepts) - feeling interface (sensorial-intentional interface)

**CLARIFICATION:** Possibly, 'reality' to 'consciousness' is the 'chronos' of the combination of 'information'-[alization] (meaning, conception) and 'matter'-[alization], together. In other words, the conscious moment of 'now' is the integration of space[alization] and concept[ualization]. The -lization part refers to gaining control (competence and master) over some socio-technical element in the

environment.

The conception of life recognizes three universal needs of conscious existence (What is life?):

\*Note that here, consciousness has access to information (a mental/computational state; data-conceptualization), spatialization (a material state; matter), and togetherness/meaning (a social state; relationship-socialization).

1. **Spatial object** (i.e., space, matter, material, surface)
  - An entity or type of object? If so, which one?
2. **Informational concept** (i.e., meaning, semiotics, language) - A process? If so, what specific process distinguishes life from all other processes?
3. **Togetherness integration** (i.e., shared method, common process) - The ongoing supra-process of a reality where consciousness expresses through organisms that inhabit environments within biospherical ecologies. Thus, perceptible from the matter side as an entity (an object constructed by matter by natural entities that resists gravity) and the consciousness side as an entity that integrates meaning and is self-directed, and while embodied, can experience greater and lesser states of happiness, pleasure, positivity, flow, etc, and greater on the continuum to lesser states happiness, suffering, negativity, pain, etc.

The elements of human life flourishing:

1. Hedonic well-being - life satisfaction, positive affect.
2. Eudaimonic well-being - meaning, self-expression, growth, accomplishments, competencies, relationships, social participation.
3. Physical health (physical well-being) & energy.
4. Contribution.
5. Domain satisfaction (e.g., work, health, recreation).
6. Relationships, social participation.
7. Impact on ecosystem - accomplishments, generativity, influence.

A basic list of human needs:

1. Physiological needs: breathing, food, water, shelter, clothing sleep.
2. Safety & security needs - health, family and social stability.
3. Love & belonging needs - intimacy with other humans.
4. Self-esteem - confidence, respect of others.
5. Self-actualization - creativity, spontaneity, purpose and meaning, inner potential.

Individual physical "resources" include, in part:

1. Physical health.
2. Physical fitness.
3. Mobility.
4. Energy.

Individual cognitive "resources" include, in part:

1. Ability to focus and concentrate.
2. Memory.
3. Goal setting.
4. Pattern recognition.
5. Problem solving.

*Note that physical and cognitive resources influence one another.*

## 15 Additional globally recognized human standards and human development indices

*A.k.a., Instruments, human welfare indices, human rights indices, well-being indices, life indices, humanity indices, human scale development indices, socio-economic indices, socio-economic development indices, civil indices, global population satisfaction index, life satisfaction index, global happiness index, etc.*

Globally recognized human standards and indices include, but are not limited to the following:

### 15.1 Common global human standards

Common standards related to human life quality:

1. **ISO 37120** Sustainable Development of Communities — Indicators for City Services and Quality of Life
2. **ISO/DTR 37121** Inventory and Review of Existing Indicators on Sustainable Development and Resilience in Cities
3. **ISO 37151:2015** Smart community infrastructures — Principles and Requirements for Performance Metrics
4. **ISO/TR 37150:2014** Smart Community Infrastructures - Review of Existing Activities Relevant to Metrics
5. **PAS 181** Smart city framework- Guide to establishing strategies for smart cities and communities
6. **PD 8101** Smart cities- Guide to the role of the planning and development process
7. **PAS 182** Smart city concept model. Guide to establishing a model for data
8. **PAS 180** Smart cities Vocabulary
9. **IEEE The happiness screening tool** for business product decisions [[https://standards.ieee.org/wp-content/uploads/import/documents/other/ead1e\\_happiness\\_screening\\_tool.pdf](https://standards.ieee.org/wp-content/uploads/import/documents/other/ead1e_happiness_screening_tool.pdf)]
10. **IEEE The State of Well-being Metrics** from IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems [[https://standards.ieee.org/wp-content/uploads/import/documents/other/eadv2\\_state\\_wellbeing\\_metrics.pdf](https://standards.ieee.org/wp-content/uploads/import/documents/other/eadv2_state_wellbeing_metrics.pdf)]
11. **IEEE P700** Model Process for Addressing Ethical Concerns During System Design
12. **IEEE Global Initiative on ethics of autonomous and intelligent systems** - Ethically Aligned Design (EAD): A vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems. [<https://standards.ieee.org/wp-content/uploads/import/>

- [documents/other/ead\\_v2.pdf\]](documents/other/ead_v2.pdf)
13. **NISTIR 7889** Human Engineering Design Criteria Standards. Part 1: Project Introduction and Existing Standards
  14. **US Department of the Army Pamphlet 602-2** - Guide for human systems integration in the system acquisition process. (2018). Department of the Army. Washington, DC.
  15. **US Air Force AFHSIO-001** Human Systems Integration Requirements Pocket Guide. (2019). U.S. Air Force. Human Systems Integration Office.

## 15.2 Common global human indices, scales, and surveys

The most valid ("established") indices and surveys include, but are not limited to:

1. Canadian Index Of Well-Being.
2. Bhutan Gross National Happiness Survey.
3. Flourishing In The European Union Survey.
4. Panas (Positive Affect Negative Affect Schedule) Survey.
5. Organization For Economic Cooperation And Development (Oecd) Guidelines On Measuring Subjective Well-Being. [<https://doi.org/10.1787/9789264191655-en>]
6. Great Britain Office Of National Statistics (ONS). [<https://www.ons.gov.uk>]
7. Ryff's Scales of Psychological Well-Being.
8. Rao's Decent Living Standard. (Rao, 2018)
9. Temporal Satisfaction with Life Scale.
10. The Warwick-Edinburgh Mental Well-Being Scale (Wemwbs).
11. World Happiness Report Uses A Cantril Ladder Survey.

Common human indices and their reports include, but are not limited to:

1. Australian Unity Well-being Index World Happiness Report. [<worldhappiness.report>]
2. Blue Zones comparison criteria. (Poulain, 2013)
3. Dutch Index of Living Conditions.
4. Human Development Report.
5. Individual Deprivation Measure.
6. Multidimensional Poverty Index.
7. Multidimensional Poverty Index.
8. National Academies of Sciences, Social Determinants of Health. (*Social Determinants*, 2016)
9. NOVA SouthEastern University, quality of life assessment tool/instrument.
10. Psychometric instruments to measure flow [the flow state].
11. Social Progress Indicator Report.

Common, human indicators in the market-State environment include, but are not limited to:

1. Objective indicators:
  - A. Better life index. [<https://www.oecdbetterlifeindex.org>]
  - B. Millennium Development goal indicators. [<unstats.un.org>]
  - C. Global reporting initiative SDG Compass. [<https://sdgcompass.org>]
  - D. B-Corp. [<bcorporation.net>]
2. Composite indicators:
  - A. UN Human development index. [<https://hdr.undp.org/data-center/human-development-index>]
  - B. Social process index. [<socialprogressindex.com>]
  - C. UK Office of National Statistics Measures of National Well-Being. [<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing>]
3. Social media sourced data
  - A. The Hedonometer. [<https://hedonometer.org>]
  - B. World Well-being Project. [<https://wwbp.org>]

The survey-based measurement tools listed below and others are on the Authentic Happiness UPenn Website [<https://www.authentichappiness.sas.upenn.edu/testcenter>]. Note, each model has corresponding self-report measures that indicate the domains of interest:

1. The Satisfaction with Life Scale: a 5 item measure that captures overall satisfaction with one's life. [[https://doi.org/10.1207/s15327752jpa4901\\_13](https://doi.org/10.1207/s15327752jpa4901_13)]
2. Cantril's ladder, a single item life satisfaction measure, commonly used in epidemiological studies. [<https://innobatics.gr/en/cantril-ladder>]
  - A. Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time? The steps of the ladder are, from bottom to top: hopeless, depressed, suffering, struggling, coping, just ok, doing well, blooming, thriving, and prospering.
3. The Subjective Happiness Scale: a 4 item measure of overall happiness. [<https://sonjalyubomirsky.com/subjective-happiness-scale-shs>]
4. The Psychological Well-being Scales (Ryff Scales of Psychological Well-Being), 18 to 84 item measure of autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance. [<https://centerofinquiry.org>]

- [org/uncategorized/ryff-scales-of-psychological-well-being\]](http://org/uncategorized/ryff-scales-of-psychological-well-being)
5. The PERMA-Profiler, a 23 item measure that captures positive emotion, engagement, relationships, meaning, accomplishment, negative emotion, physical health, and overall well-being. [<https://doi.org/10.5502/ijw.v6i3.526>]
  6. The Meaning in Life Scale, a 6 item measure that assesses the presence and search for meaning. [<http://www.michaelfsteger.com/wp-content/uploads/2012/12/Steger-Samman-IJW-2012.pdf>]
  7. Emotional scales from: "Appendix A: Experienced Well-Being Questions and Modules from Existing Surveys" in "Subjective Well-Being Measuring Happiness, Suffering, and Other Dimensions of Experience" [<https://www.ncbi.nlm.nih.gov/books/NBK179226>]

### 15.3 Human development

In the context of human well-being (welfare), 'development' means improvement of human well-being (i.e., the progression of the state-dynamic of global human well-being from a lesser state/dynamic to a greater, better, or more beneficial. 'Development' refers to an increase in quality of life (standard of living) over time. However, not every index measures what it claims to measure, or even understands what it is measuring. Without connecting an index to a societal specification, there is no usage of the index to developmentally reorient that society. And, without a societal specification, there can be no accurate formation of an index. Therein, welfare (in the market-State) is likely to replace the actual and objective meaning of fulfillment, masking it with rights and duties as the basis for life and social justice (as opposed to objective human fulfillment).

### 15.4 Human index

An index is a tool used to measure and rank an environments' (or systems') expressed level of some conception(s). In general, societal indices measure concepts that are valued relative to that society. For example, the "United Nations Human Development Index" (UNDP, 2009) is a United Nations tool to measure and rank countries' social and economic development based upon schooling ("education"), life expectancy ("health"), and income ("standard of living"). Schooling, life expectancy, and income are valued by entities related to the United Nations, and are therefore, are measured by the Index.

Today, there are many societal-level human relevant indices, including but not limited to:

1. Environmental sustainability indices
2. Environmental performance indices

3. Human development indices
4. Physical quality of life indices
5. National happiness indices
6. Progress indices
7. Vulnerability and poverty indices
8. Peace indices
9. Well-being indices
10. The Fordham Francis index
11. The blue zone index
12. Etc.

As expressed in early 21st century society, many of these societal-type indices contain ideological biases, fail to include ecological considerations, lack an objective and unified understanding of human consciousness, disregard technological development, misunderstand human nature, and conflate social constructs with physical existence (e.g., measuring years in school as 'level of education'). Structural assumptions often make indices biases and of little use outside of the limited structure within which the index was created.

#### 15.4.1 Survey example: The Authentic Happiness Inventory: an instrument

The Authentic Happiness Inventory (AHI, Seligman et al., 2005) is a self-report measurement for the assessment of global happiness and comprises aspects of subjective and psychological well-being that was especially designed for use in intervention studies. The AHI consists of 24 sets of five statements from which the participant has to choose the statement that describes his feelings during the past week best. (Proyer, 2018)

### 15.5 Human rights

The U.N. Declaration is worth citing in full to recognize their underlying life-value logic:

1. All humans have the right(s) [given by the State and/or supported by market conditions] to
  - A. Freedom of speech and belief.
  - B. Freedom from want.
  - C. Dignity and worth of the human person.
  - D. Justice of treatment; not to be subjected to inhuman or degrading treatment and punishment.
  - E. Equal access to public service.
  - F. Political voting - universal and equal suffrage.
  - G. Social security [assistance] and [the resources required for] the free development of self/personality.
  - H. Working conditions that are just and favourable.
  - I. Rest and leisure.
  - J. Threshold conditions representational of a standard of living adequate for the health and well-being of himself and his [sic] family,

including food, clothing housing and medical care.

K. *Education* and equally accessible higher education.

The underpinning principle of all of these United Nations stated "rights", is an onto-ethical ground of each individual [human] perceiving and behaving toward other [human] beings as another and complementary aspect of an implied [moral] whole, enables [human] life against its many-sided oppression.

## 16 Life access

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**INSIGHT:** *The inequality of our experiences sets the limits of our potential.*

In a community-type society, most of the population lives within and travels between integrated city systems. Note here that there are still populations that live outside these city systems, and, there are structures placed in natural environments for discovery and other human activities.

### 16.1 City parameters

A healthy city is one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life [need] and in developing their maximum potential.

City parameters includes:

1. A clean, safe physical environment of high-quality (e.g., high quality housing).
2. An ecosystem that is stable now and sustainable in the long-term.
3. A strong, mutually supportive and non-exploitative environment.
4. A high degree of public participation in and control by the public over the decisions affecting their lives, health, and well-being.
5. The meeting of basic needs (food, water shelter, income safety, and work) for all the city's people.
6. Access to a wide variety of experiences and resources, with the possibility of multiple contacts, interactions, and communication.
7. A diverse, vital and innovative city economy.
8. Encouragement of connectedness with the past, with the cultural and biological heritage, and with other groups and individuals.

Strategies to achieve city parameters:

1. Planning process based on ecological principles.
2. Varied social and economic opportunities.
3. Minimum intrusion (of freedoms).
4. Principle of closed system (e.g., health is reduced by traffic, so design without traffic, if traffic, then redesign).

### 16.2 Access to societal structures that enable education (learning; intrinsic life-value needs)

The higher level capacities of human thinking require not

only love and care at a young age, but also, education in the form of access to information and activities by which some has the opportunity to become a self-directed life-long learner. Herein, education is the richer development and more refined application of the mental and physical capacities of human social self-consciousness. Education requires not only access to information, but also the ability to express information freely.

1. To be deprived of education is to be cut off from the essential social condition of living a fully human life.
2. To be deprived of the ability (i.e., an inability) to test the given against the possibly better is to be harmed in human capacity to think and act in creative and novel ways that expand the life-value of society.
3. To be deprived of the ability (i.e., an inability) to access the unified information resources of one's society leads easily to a life reduced to the mindless re-enactment of scripts (belief systems) written for them by the socially powerful and others for the sake of meeting their own needs.

**NOTE:** *The general research suggests that economic work motivation is a need (or desire) that is goal driven resulting in some action, where a highly motivated person could outperform a more technically competent one.*

### 16.3 Access to societal structures that enable beautiful expressions (aesthetics)

**NOTE:** *It is [in part] the life-value of aesthetics that ensures the preservation and care-taking of wild space.*

Human beings are capable of experiencing both the natural and the socially constructed world as aesthetic (or beautiful). Beauty is an emergent property of material organization that requires human experience in the presence of specific patterns of material organization. The relevant material relation is not just between the things in the environment, but between the living being as the subject of experience and the things (configurations of sensation, most notably, the physical) in the environment. Here, there is the idea of creating a biomimetic aesthetic throughout the exterior and interior environmental spaces through which humans pass; the concept of a "resonant biomimetic aesthetic" is one of the creation of physical visual spaces as aligned with nature, inclusive of mineral-crystal and organic forms (biomimetic) forms, wherein similar patterns are expressed using resonant biomimetic-cymatic frequency forms.

It may be argued that there is no universal human capacity for aesthetic experience (or evaluation).

However, the human experience of "awe" in the presence of natural forms has inspired creation and action in people across time and cultural spaces. Further, if the universe has a pattern to its structure, and humans are some sub-set expression of that pattern, then it is likely that expressions of that pattern in objects and spaces will uplift and evoke a sense of beauty (or harmony) in a human observer. The value of beauty cannot be understood reductively, since to reduce the beautiful object to its [abstract] material constituents (e.g., rock and water, tree and hills, sound waves, ink on a page, etc.) eliminates the relationship of the object to the conscious observer.

The life-value of the aesthetic capacity of humankind lies in its potential to uplift (and harmonize) the experience of consciousness, bringing it into greater alignment with its highest embodied potential. There is a physical reality to which consciousness relates through an aesthetic dimension to experience. An aesthetic environment enriches life insofar as it frees thinking and activity from calculating the ways in which things may be useful to itself and others.

An entire habitat can be created to meet the human need for aesthetics throughout. If there are no beautiful objects or spaces, there can be no experience of beauty (the need will not be met). The existence of beautiful spaces and objects can be created or threatened by social processes. The life-requirements that must be satisfied if the aesthetic capacity is to be developed and enjoyed largely involves personal and societal commitments to put effort into the cooperative creation and sustainment of beauty, and the preservation of already existing natural beauty.

The life-requirements involved in the development of the aesthetic capacity is both subjective (aesthetic cultivation) and objective (generation and preservation of natural patterns). The aesthetic sense requires cultivation (self-directed harmonization) more than education (self-directed learning). It requires individual freedom to release trauma and limited conditioning in order to align more greatly with patterns representative of a high degree experiential fulfillment. Or, said in other way, it requires individual freedom to release attachment from artificial limitation in order to resonate more greatly with patterns reflective of a higher potential capability and fulfillment.

Unless these life-requirements are met, the aesthetic capacity does not develop fully, and humans are harmed by losing connection with the environment's potential ability to uplift and inspire, which is not instrumentally useful or commercially exploitable. The harm lies in the impoverishment of an individual's sensibility caused by a one-dimensional relationship with the environment (i.e., only an instrumental, and not aesthetic, relationship).

There is a serial order of priority between physical-organic and social (socio-cultural) life-requirements, these prioritizations are reflected in societal decisioning. Physical-organic life-requirements are basic to human life in a way that social (socio-cultural) life-requirements

for the existence of beautiful natural spaces and social artefacts are not. There is no 30 day fatality from aesthetic starvation.

**NOTE:** *A society that encodes a monetary-value system is unlikely to express a high-degree of aesthetic capacity due to the sprawl of the system as it inefficiently consumes wild space.*

## 16.4 Access to societal structures that enable caring and working, together (coordinating)

**NOTE:** *Future generations don't have to grow in their care through punishment, and then a percentage choosing compassion and appreciation, instead they can grow in their care by experiencing care from their environment.*

Just as there is intrinsic life-value to work ("labour"), beyond its instrumental value, so too is there intrinsic value to caring, in the life of the one who cares. When human beings care about one another, they increase their own life-value by expanding the number of affirmative connections between themselves and other humans, and therein, they increase the life-value of others by acting toward them in such a way as to enable them to express and enjoy more life-value in their own lives. In a caring relationship, others are encountered as people about whom we care, and not as threats to be destroyed [in competition].

The capacity an individual requires to exist in a caring relationship is the capacity to live in reciprocity with others, to care about (i.e., take interest in) others as unique and unrepeatable bearers of self-determined, free life; and also, to allow oneself to be so cared for, and thus, to form social relationships, as far as possible, by the goal of expanding mutually enriching forms of understanding , interaction, and universal fulfillment of life requirements. Love and care enable individual humans to develop healthy dispositions toward other people - to value them as unique life-bearers and to develop mutual relationships with them.

All humans begin life in the state of an organism that requires, for its full development, wise and systematic love and care. A caring-loving experience is a requirement for healthy (fully adaptive) emotional development, from which profound flow states of capability emerge. If people are to be able to form non-violent, non-exploitative, non-instrumental, caring relationships with other people, then they require non-violent, non-exploitative, and non-instrumental care and love from adults while they are young. Healthy emotional development becomes the capacity to interact with others in a way that demonstrates genuine concern for their self-development.

Being loved and cared for, especially while young, is a shared social (socio-cultural) life requirement, because without it the human capacity to love and care for others

is degraded. Since the degradation of this capacity does not eliminate the existence of others from one's life, the lack of development of this capacity leads to a higher probability of conflict and the social pathologies of violence and the indifference to suffering it engenders. Just as organic life-requirements can be satisfied in multiple ways and with some degree of alignment, so too can this human life-requirement. Since the structures of relationship in which adult care and love are manifested toward children can vary, it follows that the ways in which this social requirement of human life may be fulfilled, can vary, from culture to culture. Human capacities for reciprocal caring are essentially intrinsic life-values, whose development depends on the satisfaction of the life-requirement for loving and caring family and friendship relations.

As a type of society, community encodes structures to generate and sustain caring relationships, as the model of [applied] human relations. The social (socio-cultural) life-requirements for the expression and enjoyment of the capacity to care can be determined by asking which societal structures ("institutions") are involved in the development of a caring personality.

There exists a set of economic relationships ("institutions") between the natural life-support system and human social life-development. Similarly, family organizations ("institutions") connect the instinctual inheritance of human beings and the social culti[vation] of human emotions.

**APHORISM:** *No one can flourish who does nothing of value for others.*

### 16.4.1 Intrinsically life-valuable work

**NOTE:** *Well-organized societies ensure that only physically necessary and desired labour is performed, so that there is time to fully express our highest potential nature.*

Intrinsically live-valuable work is the second universal social (socio-cultural) requirement of human life. There is a shared human life-requirement for an economic systems that satisfy the conditions for workers ("labour's") realizing its intrinsic life-value. In order to fulfill the requirement for work in a community-type habitat service system, the work that people perform must not only contribute as a function to social continuation, it must also be expressed and enjoyed as an individually meaningful human effort that is consciously chosen and contributes something that others' lives require.

Co-operation and mutual commitment enable the growth of higher-level human thought and creation, becoming the development of more capable expressions of humanity (and that which it is becoming). Here, work is doing what is of value to others and meaningful to oneself. A habitat work structure enables people to contribute to the provision of universal life services (consistent with each person's enjoyment of them). The value of work for others is defined by its contribution

to the provision of the universal services each and all require to live as human.

The "vocation" of each individual is to do what s/he can that is of life-value to others and of life-interest to self. This could be viewed as giving back into what enables the humanity of each. All work involves some degree of transformation of existing materials (some degree of ingenuity, creativity, or just effort). Therein, work can have intrinsic as well as instrumental life-value. Economic work (i.e., "labor") produces objects and services that fulfill organic and social requirements.

The primary value of work (or labor) is not its "economic" value (as in, the production of exchange values), but its direct ability to effect organized and predictable change in ourselves, our lives, and our environment(s).

Transparency and cooperation are required to ensure that only necessary work is performed. Humans require work to be individually meaningful and consciously contributed.

All economic work in community is contribution-based and part of a larger whole. In community, work is determined through decisioning, explained by the transparently unified societal model, and carried out in the materialized world through coordinated cooperation.

To suffer forms of work that are devoid of intrinsic life-value for oneself and one's society is to suffer in one's humanity. Humans alienated in their working lives represents a significant area of insufficient fulfillment in early 21st century society. For any person or group to be reduced in their working (labouring) activity to a mere tool of system-requirements is to be harmed in their human capacity for creative self-realization and productive contributions to the well-being of themselves and others.

To suffer forms of work that are devoid of intrinsic life-value for oneself and one's society is to suffer in one's humanity. For any person or group to be reduced in their work ("labor" activity) to a mere tool of system-requirements is to be harmed in their human capacity for creative self-realization and productive commitments to the well-being of others.

Where people are reduced to mere tools, they are objectively harmed in their human capacity for intrinsic life-valuable activity. There is therefore a shared human life requirement for economic decision systems that satisfy the conditions for workers (contributors, labourers) realizing intrinsic life-value. In other words, community is a structure that facilitates individual consciousness in realizing [some of] its life-value by contributing to activities that maintain and advance the community).

Societal conceptions of work, given that extrinsic forms of motivation have been shown to repress or erase intrinsic forms of motivation:

1. A constructive activity to produce life-value for others as a goal - what healthy humans are impelled to do.

2. Adam Smith conceived work as a "dis-utility" - what one has to sell into another's property to survive.
3. Work is something done for reward.
4. Work is something done to avoid punishment (coercion).

In the market, money is a socio-economic unit (of time) of work, which represents the time someone has completed giving their body over to another for necessary socio-economic exchange (a.k.a., laboring). Money is the object-expression a market-based society uses to represent a unit of power over (or, control over) others (i.e., a unit of potential power over another, authority).

The intrinsic life-value of work is not just the particular capacities developed in work life, but in work being the way in which individuals create and fulfill a sense of belonging [of social well-being] through contribution at all scales of society.

There is intrinsic life-value in:

1. The capacities that work allows someone to develop,
2. The extent to which it allows one to develop them, and
3. The social self-consciousness of oneself as a contributing member of society.

Workplaces may express different conditions given different societal configurations:

1. **Authoritarian workplaces:** Where the primary value of labor in the market is the production of exchange values, *power-over-others protocols*.
2. **Cooperative workplaces:** Where the primary value of work in community is its instrumental and intrinsic life-value, *togetherness protocols*.

Service types by societal configuration:

1. In the market, the top-level human (synthetic, controlled) services are generally called '**industries**', more fully, '**corporations**' (States are corporations), '**business entities**' (private entities), and '**State associative entities**' (government entities, public entities).
2. In community the top-level human (synthetic, controlled) services called '**habitat services**', more fully, '**habitat service systems**'.

## 17 Life Potential

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A.k.a., *Actualization potential.*

Actualization potential is the conscious-self need for actualization upon potential. 'Actualization' is the expression of the potential in oneself (one's life) leading to self-development [through uncertainty]. When these needs are met, the consciousness is likely to experience a [greater] sense of wholeness and fullness as a human being. Per actualization needs, behaviour, in this case, is not driven or motivated by deficiencies, but rather, one's desire for personal growth and the need to become all the things that a person is capable of becoming, social contribution and personal development being two important variables.

Other terms for 'actualization' include, but are not limited to:

**1. Love and belonging and extentionality**

- connecting with oneself and all others in togetherness and seeing oneself in others.

**2. Esteem** - the internal combined feeling of self-love, self-worth, and selfAbility [to overcome challenge and grow].

**3. Self-actualization** - the internal drive, physical ability, and environment opportunity to fulfill one's full potential as a human.

**4. Transcendence** - experienced through biology into consciousness as the need (desire) to connect with something beyond one's identified self.

A. *Transcendence subjective measure [of well-being]:* quality of life (subjective well-being) at time of survey data collection.

**5. Cognitive (intellectual, mental)** - experienced through biology into consciousness as the need (desire) to know and understand, to record and calculate (as sub-processes). Calculation can be automated. A computer is a computational system, which performs calculations. When a society develops a digital computational system, how does it apply this resource? Is it applied commonly to meet everyone's common need for understanding, and for recording and sharing that understanding, or is it applied otherwise? Of note, environmental conditions and conditioning affect an individual's physical ability to do these things on their own.

**6. Aesthetic (psychological)** - experienced through biology into consciousness as the need for natural symmetry and order (i.e., beauty), and other structures that promote optimal feelings.

**7. Environmental aesthetics** - It could be said that there is the study of environmental aesthetics, which explores the meaning and influence of environmental perception and experience on

human life.

- 8. Nature** - Natural environments turn out to be particularly rich in the characteristics necessary for restorative experiences. The interactions of natural settings and childhood development are not completely understood but the absence of this interaction has been dubbed nature-deficit disorder. Indigenous peoples have been communicating the necessity of incorporating more nature into the lives of those in early 21st century society for decades. Interactions with nature and its ecosystem services have been shown to enhance cognitive and problem-solving abilities, promote independence, focus attention, promote better environmental awareness, generally benefit early childhood development, and yet, these are obvious results.

**9. Social identity** - as defined values.

A. [Social] Identity is defined values.

### 17.1 Access potential

*i.e., Together in a biosphere, a global population requires access to materially regulated space-time; wherein, there is human actualization.*

Access potential is the self-conscious desire to gain and sustain a self-conscious access level to materially regulated space-time. In any society there must be a way for individuals to regulate social contact, and have that understood and abided by among each other (a.k.a., personal boundary):

1. **Current personal space** - the immediate space surrounding a person (or individual system), in which he or she feels belongs (sole, discretionary access) to them. This buffer zone is used by the individual to stay comfortable in various situations. The personal space is considered adjusted in size depending on various factors, mostly socio-psychological (e.g. social settings or by means of protection).
2. **Designated personal space** - the space, given location as part of a/the habitat service system, a person feels belongs (sole, discretionary access) to them. A designated personal space (e.g., bedroom with curtains closed, dressing room) may provide someone's current personal space the condition of privacy among a social population. The dwelling, for example, is an intangible location that offers the potential for privacy, a buffer zone, by controlling the closing out of the outer social environment.

In a general city living situation, most people want some people to have access to them some of the time, and it is necessary to control the number of people who

see them in certain contexts. In the context of needs and satisfiers, privacy may serve as a satisfier for the needs of leisure and freedom. The presence of any structure indicates the potential for some potential elevation of privacy. In application, the notion of privacy is most commonly applied to individual's dwellings and personal information spaces. The living environment provides physical separation from the outside world by the use of walls. While separate rooms may provide privacy between persons living together. From the leisure perspective living areas provides privacy in the form of intimacy, spaces of closeness and subjective and/or non-functional (personal) surroundings. Private space and withdrawal from public situations provides a feeling of freedom. The physical barriers play a major role for achieving privacy. As individuals need to withdraw from social situations, the living area may provide such a service. The walls and the doors act as physical barriers that accommodate the privacy as a satisfier. This is seen both from a public point of view, but it may as well be from people living together. The furnishing and room separation plays a significant role in the perception of privacy and withdrawal in a living environment. The exterior walls provide the inhabitant with separateness from the outer environment, while the rooms and the doors provide privacy between the inhabitants. The physical barriers of the home, in particular, offer the opportunity for an individual to withdraw from what is called social observation, or in an institutionalized manner, surveillance.

Privacy is enclosure, and one of its most relatable analogies is a 'door'. A 'door' closes out; the wall encloses. The walls and the doors provide different functions. As the wall is a set perimeter for appraisal or enclosure, the door provide the user with an option of closing people out or inviting them in. The wall is the common, interfaced structure. A similarly idea, 'withdrawal enclosure' may be a significantly necessary function of a dwelling, not only from the outer environment, but also for the co-inhabitants. However, the use of walls can cause an undesired effect in the inhabitants by extreme enclosure.

**QUESTION:** Are there sufficient growth and contribution opportunities?

## 17.2 Contribution potential (to the intersystem team)

**INSIGHT:** When the structure of society nurtures fulfillment, then individuals among that society are likely to nurture the continuation and growth of the society through contribution.

Contribution potential is the self-directed/self-educated desire to gain and sustain placement on InterSystem Teams. Humans are a social organism in that all individuals have an innate desire to belong and be needed. Work, by creating some thing [of value] for

others, fulfills the feeling of being needed and of desiring a helpful social role in the lives of others.

Community represents a structure that facilitates the full development of individual self-capacity to identify with, and care about, other's [well-being]. Caring relations (versus power-over-others or transactional relationships) as a model for social relations, is likely to increase overall life-value, because the outcome of successful caring (as a goal) is the elevation of the object of care to a better life-state, without loss of life-value of the one caring.

Through contribution individuals reciprocally enrich each others lives, as opposed to the application of exclusivity and gain over others. A contribution-base structure generates a space to care about others as unique and unrepeatable bearers of a similar pattern of life, to allow oneself to be so cared for, and thus to decide material relationships, as far as possible, by the goal of expanding mutually enriching forms of interaction.

When human beings care and/or appreciate one another they increase their own life-value by expanding the number of affirmative connections between themselves and other humans, and they increase the life-value of others by acting toward them in such a way as to enable them to express and enjoy more life-value in their own lives. Caring relations as a model for human relations (whether they be familial, sexual, or friendly), such that when we do encounter others, we encounter them as people about whom we care, and not threats to be destroyed.

In contrast, market-based, transactional relationships where zero-sum competition is the dominant mode of social relationship must produce, over time, less, rather than more life-value than co-operation and care; in competition there are must be losers, and to lose when life-value is at stake is to suffer a diminution of life-value.

Work (a.k.a., InterSystem team work, engineering, and economic work) is an activity with the direct potential of doing or creating some thing [of value] for others (or another).

1. In the market, work is an activity that generates money. Therein, leisure is an activity that does not generate money.
2. In community, economic work (i.e., socio-economic work) is an activity with the direct potential of doing or creating some thing [of value] for others (or another) and oneself.

More fundamentally, work (intersystem team engineering, or other) is the societal basis for shared social (socio-cultural) life-requirements and service. Work that is satisfying to those who do it and of value to others. Work as that which is of value to others and of interest to the self.

The social requirement of human-life work includes:

1. Intrinsically life- valuable work (social or economic

- work).
2. Agency (personal choice) - the freedom and ability to "control" one's own life, by choosing what to do and put effort into. A society that creates agency, rather than strips it away.

In the market, work is an activity that generates money through the mechanism of "profit". Profit is derived [in part] when a company is "formed" and labor is "hired" -- to extract profit from the labor. Such an activity is the pursuit of one's selfish self-interest, as opposed to acting to benefit oneself and others, while not artificially limiting the freedom of others. The profit mechanism strips away all meaning and value from labor other than whether it makes a profit. The market-based dynamics of considering what is valuable for the group as opposed to one individual's selfish contextual interest is lost when everything is reduced to a financial decision.

Humans need positive social roles in a community setting for them to feel socially fulfilled. This requirement is a social [ontological] imperative, a desirable opportunity-condition, because humans are a social organism.

Some human societal configurations do not imperatively fulfill or recognize (or even have a mechanism to do so) positive social contribution-based conditions, because everything has been reduced to a [financial] market-exchange transaction, where social and economic relationships are transactional (exchanged) because of competition and/or scarcity (instead of unified cooperation and contribution).

**QUESTIONS:** *What is the function of work beyond earning a living or getting paid to pay bills? If money, and the concept of exchange, were removed from work altogether, what would work look like?*

### 17.3 The potential for freedom

**NOTE:** *For mortal beings, the most life-valuable way of using one's present time is to act in intrinsically valuable ways that at the same time open up possibilities for even richer activity in the future.*

Freedom potential is to have the time and external order to decide without social coercion. There exist, at least, four conditions for activities to be conditions of freedom:

**AXIOM:** *The idea of 'freedom' is bound up on the idea of 'doing anything' (i.e., having any ability to be active in a real world).*

1. The human must be aware of the point of what is being done. The human must consider that which is to be done through that activity as something desired.
2. The human must direct and organize the activity.
3. The human activity must be incorporated into a

- community with some shared understanding of what is important, and where the activity of each only makes sense in the context of what we do together.
4. Being recognized (by others) as valued social members.

In capitalism, activity aimed at satisfying the ends of life, labor, is by definition, unfree. An employee's labor is unfree in that the employer (authority) directs the laborer and the employee serves the ends of owner, not the employee.

The concept of freedom in every societal system is bound up in the definition (and encoding) of 'time'.

What is 'time'?

1. Is time 'money' (where, the present moment is sacrificed for a future 'monetary' reward)? Spend a life-time to maximize money-value.
2. Is time free for life valuable uses (present moments in a finite life eventually run out)? Spend a life-time to maximize life-value.

A society oriented toward human fulfillment is likely to apply automation to reduce all unnecessary contribution so that humans have the free time to decide where they would most like to contribute [to fulfilling the real world needs-requirements for everyone in the community].

In society, freedom is bounded by the natural conditions of life (the life-grounded or life-requirements) of other people. Decisions and actions that in some way undercut the life-requirements of on which everyone, including the individual consciousness inhabiting the sovereign physical vessel, depends. At a social self-conscious level, one's sense of one's own individual freedom involves an understanding and actualization of goals, which embrace, protect, and unite life on earth.

Hence, among a social population, 'freedom' (as inherently bound up with 'justice' and technical 'efficiency') is the condition of having free choice of one's daily activities, in concern to knowing, organizing, and deciding one's own efforts.

The free activity of humans (the human condition) has [at least] the following characteristic requirements:

1. **Material need[iness]** - The free activity of humans is material as responsive to needs that individual humans ("we") have as living human beings.
2. **Intrinsically social (or cooperatively driven)** - The free activity of humans depends on the collaboration of others (i.e., coordinated access is freedom, while freedom is time, while coordinated access is time).
3. **Financial necessity (or scarcity driven)** - The free activity of humans depends on individual ("your") financial freedom (i.e., money is freedom, while

freedom is time, while money is time).

Freedom requires, in addition to the satisfaction of biological and socio-cultural life-requirements, some degree of free time (and mental structure-energy) in which the person can contemplate different possibilities for capacity expression and development and decide between them. There is a level of access, and then there is the level of freedom of access, which is either collaborative by protocol, or competitive by authority. Someone trapped in the "rat race" of capitalism may express complex and challenging capacities, in a particularly human way, at work, and yet feel oppressed, rather than free. If money-value pressures cause these capacities to be expressed in routinised ways, then the capacities are not freely developed, but coerced by the structure of 'work' in which the person is trapped. In other words, in these capitalist structures, 'work' is not seen as a collaborative InterSystem Team engineering operation where everyone works from the same unified specification, because we see our commonality and finality.

## 17.4 Free-time potential

"Free" time presupposes some degree of available time as the material condition of experiencing oneself as capable of deciding between different possibilities for activity (i.e., free choice, freedom). Surplus (available) time can occur in different social spaces, but is not necessarily identical to 'leisure time'. There is surplus time whenever one is not directly compelled to act one way, rather than another, by natural or social or material necessity, but is instead able to reflect upon and decide between different possibilities for action. Free time is thus time experienced as an open matrix of possibilities for action rather than a closed structure of coercion. It follows from this definition that work can be free time (i.e., contribution) to the extent that workers have control over the direction, pace, and content of their work activity, (i.e. where they are not simply fungible 'human resources' determined in their every move by the technical apparatus of work, managerial power, and imposed deadlines).

Conversely, in the market-State, 'human resource management' (HRM) is a corporate term defined as:

1. Human - refers to the skilled workforce in an organization.
2. Resource - refers to limited availability or scarce.
3. Management - refers to how to optimize and make best use of such limited or scarce resource so as to meet the organizational goals and objectives.

Therefore, human resource management is meant for proper utilization of available skilled workforce and also to make efficient use of existing human resource in the organization. Note that in community, humans are not

resources (in either the materialistic sense or the scarcity sense), humans are not managed by other humans, and humans are not a scarce resource.

Unfree time is time scheduled and action sequenced in obeisance to a set of ends imposed upon the person. These routines leave no choice space in which alternative actions appear feasibly possible. In all cases of free activity, time is experienced as the open matrix within which the person thinks about what to do, how to do it, and, perhaps most importantly, why to do it. Activity is governed by the internal structure of that which is being thought about and enacted, and not a coercively imposed, mandatory end only extrinsically related to the internal structure of the practice. Making money is an extrinsic end. Contribution is an intrinsic end.

Individuals in community are released from the time-pressures of the market, but not from the time-pressures of real human needs and requirements. There are stills deadlines in community, but deadlines that emerge from real world needs, not arbitrary deadlines imposed by private funding entities who want market-based results.

In community, people experience time as an open matrix of possibilities for life-valuable ends. As such, free time is not simply empty time, or time in which there is nothing to do; it is rather bound up with and inseparable from the forms of free life activity it makes possible. The benefit of optimizing the fulfillment of need through service together creates more free time, with which to further develop capabilities.

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## TABLES

**Table 3.** List of objective, common, calculable human needs in a community-type society. Note that the complete list is too large to include in this document and is referenced on the Auravana Project's website [[auravana.org/standards](http://auravana.org/standards)].

Biosphere / Social / Habitat	Support Service	Human Need	Nutriment	Description
B	Biospheric Life	<b>Movement over landscape</b>	Landscape (Flooring)	A requirement for land (or equivalent) of appropriate composition as an area to move on/over. A requirement for floor area to move upon with gravity as the original tension.
B	Biospheric Life	<b>Breath of air</b>	Air	A requirement for breathing air of appropriate composition (a.k.a., halation, gas exchange; atmospheric halation).
B	Biospheric Life	<b>Climate</b>	Atmosphere	A requirement for a livable climate.
B	Biospheric Life	<b>Sunlight</b>	Sunlight	A requirement for being located outdoors (or, with sufficient transparency) so there is the contact of sunlight, for biological rhythms, signaling, and illuminated activities.
B	Biospheric Life	<b>Materials cycling</b>	Ecology	A requirement for cycling materials so that "waste" doesn't build up (e.g., sanitation and ecological growth, waste disposal and cycling).
B [Human Biology]	Biospheric Life	<b>Sleep restoration</b>	Sleep (Sleeping)	A requirement for the body to enter and remain in "sleep" mode for some duration of time, on a daily (general) basis.
B [Human Biology]	Biospheric Life	<b>Nutrient satiation</b>	Food (Eating)	A requirement for the body to take in nutritional food to replace itself and have signaling information for adaptation, on a daily (general) basis.
B [Human Biology]	Biospheric Life	<b>Reproduction</b>	Reproducing	A requirement for reproducing the human species.
B [Human Biology]	Biospheric Life	<b>Construction</b>	Enhabiting	A requirement for an enclosing structure to protect people and their technologies from the climate.
S [Human Sensation]	Socio-Technical [Human-Living Condition]	<b>Affection</b>	Connection	A requirement for affection (connection and bonding), including genuine emotive affect and touch, of both a non-reproductive and reproductive kind.
S [Human Sensation]	Socio-Technical [Human-Living Condition]	<b>Socialization</b>	Participation	A requirement for participation and sharing in each others lives, sharing with others and participating in social activities with friends and family in a physical and digital life-radius.
S [Human Sensation]	Socio-Technical [Human-Living Condition]	<b>Beautification</b>	Beauty	A requirement for access to beauty (biomimetic aesthetic) that extends beyond cultural temporality into naturality; access to an environment that produces a biomimetic awe sensation, an environment with a natural 'beauty' attribute.
S [Human Working]	Socio-Technical [Human-Work Condition]	<b>Contribution</b>	Coordination (Coordinating, Duty)	A requirement for a service that coordinates contribution to society.
S [Human Working]	Socio-Technical [Human-Work Condition]	<b>Residantation team service</b>	Residentialization, residency service	A requirement for a service that provides access to residency (a dwelling) in a habitat in the network of community habitats where someone has personal access (and can sleep).
S [Human Working]	Socio-Technical [Human-Work Condition]	<b>Habitation team service</b>	Physicalization	A requirement to complete socio-technical projects with people in the physical environment to provide physical services and objects to people.
S [Human Working]	Socio-Technical [Human-Work Condition]	<b>Standardization team service</b>	Standardization	A requirement for detailed and accurate information integrated into a unified knowledge system providing all relevant data about the social and material through time.

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S [Human Working]	Socio-Technical [Human-Work Condition]	<b>Decision</b>	Decision team service	A requirement for a procedurally coordinated, transparent, and fair system by which decisions about resource configurations (master plans) are taken together in parallel to produce fair and optimized access to common heritage resources configured into socio-technical support services.
S [Life Phasing]	Socio-Technical [Life-Phase Condition]	<b>Contribution-phase [service]</b>	Dutying (Contribution coordination team)	A requirement for contribution to their living system. Human involvement in the habitat service system must provide an adequate level of intellectual stimulation, in order to have contribution.
S [Life Phasing]	Socio-Technical [Life-Phase Condition]	<b>Education-phase [service]</b>	Learning (Education facilitation team)	A requirement for educating the young in order to facilitate future fulfillment contribution and others with well-being in society.
S [Life Phasing]	Socio-Technical [Life-Phase Condition]	<b>Leisure-phase service</b>	Leisuring; vacationing	A requirement for leisure as a phase of life, and leisure as a sub-life phase during the education and contribution phases of life (a.k.a., vacation, where others-do-all-work).
S [Common Alignment]	Socio-Technical [Common-Heritage Condition]	<b>Commonized Coordination of information heritage</b>	Information sharing	A technological habitation requirement for information and its processing, and its equal distribution to all
S [Common Alignment]	Socio-Technical [Common-Heritage Condition]	<b>Commonized Coordination of resource heritage</b>	Resource sharing	A habitation requirement for access to socio-common habitat service spaces.
S [Common Access]	Socio-Technical [Societal-Access Condition]	<b>Personal access</b>	Common heritage accessing	A requirement for personal dwellings, homes, and personal access spaces and objects.
S [Common Access]	Socio-Technical [Societal-Access Condition]	<b>Common access</b>	Common heritage accessing	A requirement for using common access areas and scheduled activities.
S [Common Access]	Socio-Technical [Societal-Access Condition]	<b>Contribution access</b>	Common heritage accessing	A requirement for the projects, people, and tools to develop and operate a community-type society.
H	Habitat Support Service	<b>Habitation</b>	Habitat	A requirement for material configurations to be coordinated into existence to shelter humanity and its productions (socio-technical services) through the control of atmosphere, air, sunlight, water, climactic cycles, etc., while providing a touching, seeing, and hearing environment that resonantly uplifts and fulfills individual people. A requirement for the directed matter cyclation of resources into different configurations of habitat, all of which meet human fulfillment requirements and are hooked up to Earth's natural service ecosystem.
H [Life Support]	Life Support Service	<b>Hygienation service</b>	Water	A requirement for hygiene and common sanitation services.
H [Life Support]	Life Support Service	<b>Reproduction service</b>	Genetic reproducibility	A requirement for procreation in order to sustain genetic continuation at some set birth rate.
H [Life Support]	Life Support Service	<b>Cultivation service</b>	Cultivation	A requirement for plant and animal relationships over a landscape, a subset of which is needed for food, fuel, and fiber.
H [Life Support]	Life Support Service	<b>Food service</b>	Cuisinization	A requirement for food; cultivated food processing, cooking and serving system.
H [Life Support]	Life Support Service	<b>Clothing as shelter service</b>	Architecture	A requirement for shelter. Protection from elements (e.g., radiation, climate, temperature, thermal comfort).
H [Life Support]	Life Support Service	<b>Buildings as shelter service</b>	Architecture	A requirement for shelter. Protection from elements (e.g., radiation, climate, temperature, thermal comfort).
H [Life Support]	Life Support Service	<b>Medical service</b>	Emergency	A requirement for emergency medical treatment and medical health care.

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H [Life Support]	Life Support Service	<b>Protection (defense) service</b>	Safety	A requirement to defend (be safe and secure from) danger and violence.
H [Technology Support]	Technology Support Service	<b>Production service</b>	Productivity; technological assembly and materials cycling	A requirement for the production of technologies, the rebuilding of technologies, the updating of technologies, and the safe recycling and downcycling or upcycling where appropriate.
H [Technology Support]	Technology Support Service	<b>Transportation service</b>	Transportability; transportation and distribution	A requirement to be transport and to transport objects within habitats, between habitats, and from habitats to the wild.
H [Technology Support]	Technology Support Service	<b>Information service</b>	Unity	A requirement for information and its processing, and its equal distribution to all
H [Technology Support]	Technology Support Service	<b>Communications service</b>	Harmony	A requirement for communicating information, and its equal distribution to all.
H [Exploratory Support]	Exploratory Support Service	<b>Consciousness exploration services</b>	Consciousness exploration	A requirement for access to consciousness exploration service
H [Exploratory Support]	Exploratory Support Service	<b>Technology exploration services</b>	Technology development, technological exploration	A requirement for access to work shops with tools and collaborative design software to build better technologies, together.
H [Exploratory Support]	Exploratory Support Service	<b>Science exploration services</b>	Experimentating, discovering	A requirement for access to discovery and experimental services.
H [Exploratory Support]	Exploratory Support Service	<b>Recreation exploration services</b>	Physical activity	A requirement for doing physical activities with their body and occupying a whole host of different common nature-positioned services, from picnicing to climbing and walking. Some of these activities are more physical fitness (e.g., climbing) or more restorative (e.g., picnic), and others are more leisurely like at a resort where all services could be provided without any work done by oneself.
H [Exploratory Support]	Exploratory Support Service	<b>Self-expression exploration services</b>	Self-expressivity; art and music and other self-expressive activities	A requirement for access to services that enhance human self-expressive potentials.
H [Exploratory Support]	Exploratory Support Service	<b>Education exploration service</b>	Educational activity	A requirement for passing down information to new generations of learners who will enter and contribute to society.

**TABLES**

**Table 4.** Direction > Human Needs List: *Survival and betterment needs, generate goals, are the [in part] reason why humans move intentionally in the world. In each of the four sectors, the first need is a pre-requisite of the second need. 1. 2. Sufficient physical and mental health, food and water, safety and security, structure and belongingness, love and respect from others, and self-esteem, to be alive and to want to stay alive. 5. 6. How much 'more' appears to depend on both our individual personalities and characteristics (nature) and our experiences and environment (nurture). Whenever the four survival needs are met, humans attempt to satisfy their four betterment needs, which are the needs we must satisfy to improve the quality of our existence. Satisfying the first two produces transitory happiness. Satisfying the last two produces lasting contentment for the individual and contributes directly to the 'ongoing survival of the species'. Satisfying the first two produces transitory happiness. Satisfying the last two produces lasting contentment for the individual and contributes directly to the 'ongoing survival of the species'. Source adapted from: Hertnon, Simon. (2016). A Theory of universal human needs. [<http://simonhertnon.com/a-theory-of-universal-human-needs>]*

	Survival needs	Betterment needs
Individual goals	Existence	Happiness (to feel good about being alive)
Individual needs	1. Physical well-being 2. Mental well-being	5. More respect from others 6. More self-esteem
Species goals	Survival (of the species)	Contentment (and ongoing survival of the species)
Species needs	3. A safe and healthy environment 4. Reproduction or limiting reproduction	7. Appreciation of 'life' and all that you have 8. Doing contributory actions in helping others to satisfy their unmet needs)

**Table 5.** Direction > Flourishing: *The conceptualizations of flourishing (incomplete).<sup>[1]</sup>*

1. Hone, L.C., Jarden, A., Schofield, G.M., & Duncan, S. (2014). *Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing*. International Journal of Wellbeing, 4(1), 62-90. <https://doi.org/10.5502/ijw.v4i1.4>

Keyes	Hupper & SO	Diener et al.	Seligman et al.
Positive relationships	Positive relationships	Positive relationships	Positive relationships
Positive affect (interested)	Engagement	Engagement	Engagement
Purpose in life	Meaning	Purpose and meaning	Meaning and purpose
Self-acceptance	Self-esteem	Self-acceptance and self-esteem	-
Positive affect (happy)	Positive emotion	-	Positive emotion
-	Competence	Competence	Accomplishment/Competence
-	Optimism	Optimism	-
Social contribution	-	Social contribution	-
Social integration	-	-	-
Social growth	-	-	-
Social acceptance	-	-	-
Social coherence	-	-	-
Environmental mastery	-	-	-
Personal growth	-	-	-
Autonomy	-	-	-
Life satisfaction	-	-	-
-	Emotional stability	-	-
-	Vitality	-	-
-	Resilience	-	-

## TABLES

**Table 6.** Direction > Well-being: The sub-scale dimensional indicators of flourishing on the Mental Health Continuum Short Form (MHC-SF; Keyes, 2005).<sup>[1]</sup>

1. Hone, L.C., Jarden, A., Schofield, G.M., & Duncan, S. (2014). *Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing*. International Journal of Wellbeing, 4(1), 62-90. <https://doi.org/10.5502/ijw.v4i1.4>

Component of flourishing	MHC-SF Indicator (During the past month, how often did you feel...)
<b>Emotional well-being</b>	
Positive affect	Happy
Positive affect	Interested in life
Life satisfaction	Satisfied
<b>Social well-being</b>	
Social contribution	that you had something important to contribute to society
Social integration	that you belonged to a community
Social actualization	that our society is becoming a better place for people like you
Social acceptance	that people are basically good
Social coherence	that the way our society works makes sense to you
<b>Psychological well-being</b>	
Self-acceptance	that you liked most parts of your personality
Environmental mastery	good at managing the responsibilities of your daily life
Positive relations with others	that you had warm and trusting relationships with others
Personal growth	that you had experiences that challenged you to grow and become a better person
Autonomy	confident to think or express your own ideas and opinions
Purpose of life	that your life has a sense of direction or meaning to it

**Table 7.** Direction > Flourishing: Components of flourishing and indicator items from the Flourishing Scale (FS).<sup>[1]</sup>

1. Hone, L.C., Jarden, A., Schofield, G.M., & Duncan, S. (2014). *Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing*. International Journal of Wellbeing, 4(1), 62-90. <https://doi.org/10.5502/ijw.v4i1.4>

Component of flourishing	FS Flourishing Indicator
Purpose/meaning	I lead a purposeful and meaningful life
Positive relationships	My social relationships are supportive and rewarding
Engagement	I am engaged and interested in my daily activities
Social contribution	I actively contribute to the happiness and wellbeing of others
Competence	I am competent and capable in the activities that are important to me
Self-respect	I am a good person and live a good life
Optimism	I am optimistic about my future
Social relationships	I am optimistic about my future
Autonomy	I am not coerced to learn or work

## TABLES

**Table 8.** Direction > Human Needs: *Human life ability requirements for living and operating together.<sup>[1]</sup>*

1. Pelenc, Jerome. (2014). *Combining the capability approach and Max-Neef's needs approach for a better assessment of multidimensional well-being and inequalities: a case study perspective with vulnerable teenagers of the region of Paris (France)*. Paper presented at the HDCA international conference "Human Development in time of crisis: renegotiating social justice". Athens, Greece. [https://mpra.ub.uni-muenchen.de/66277/1/MPRA\\_paper\\_66276.pdf](https://mpra.ub.uni-muenchen.de/66277/1/MPRA_paper_66276.pdf)

Life Skills	Sustainable human development	The capability approach covers	Fundamental human needs approach covers
<b>Learning to know</b>	Observe the situation	Developing reasoning	Understanding, meaning, creation
<b>Learning to be</b>	Being able to observe autonomously simple instructions	Enhancing agency	Life, technology, exploration, freedom/autonomy, achievement of
<b>Learning to live together</b>	Being able to work together (team work)	Building potential through social contribution	Affection, participation, positive relationships
<b>Learning to do</b>	Being able to participate in a common work; acting with determination	Being able to duplicate, operate, and debug; express basic and supra-functionings	Subsistence, protection, procreation

**Table 9.** Direction > Flourishing: *Components of flourishing and indicator items from the elements of well-being identified by Seigelman.<sup>[1]</sup>*

1. Hone, L.C., Jarden, A., Schofield, G.M., & Duncan, S. (2014). *Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing*. International Journal of Wellbeing, 4(1), 62-90. <https://doi.org/10.5502/ijw.v4i1.4>

Component of flourishing	PERMA-P Flourishing Indicator
Positive emotion	In general, how often do you feel joyful? In general, how often do you feel positive? In general, to what extent do you feel contented?
Engagement	How often do you become absorbed in what you are doing? In general, to what extent do you feel excited and interested in things? How often do you lose track of time while doing something you enjoy?
Positive relationships	To what extent do you receive help and support from others when you need it? To what extent have you been feeling loved? How satisfied are you with your personal relationships?
Meaning	In general, to what extent do you lead a purposeful and meaningful life? In general, to what extent do you feel that what you do in your life is valuable and worthwhile? To what extent do you generally feel that you have a sense of direction in your life?
Accomplishment	How much of the time do you feel you are making progress towards accomplishing your goals? How often do you achieve the important goals you have set for yourself? How often are you able to handle your responsibilities?
General well-being	Taking all things together, how happy would you say you are?

## TABLES

**Table 10.** Direction > Outcomes: *Highly simplified table of outcome indicators for a societal project.*

Type of project	Example outcome	Example outcome indicators
Environmental	Increase life flourishing	Level of service flows
Societal	Increase human flourishing	Level of human need/requirement fulfillment
City	Increase human well-being	Level of life satisfaction; Range of tasks taken by volunteers; Level of volunteer confidence
Self	Increase flow[ing] and happiness	Level of life feeling; level of life motives; level of life master-ability

**Table 11.** Direction > Outcomes: *Highly simplified table of outcome indicators for a societal-type project. This table shows examples of market-type societal indicators, State-type societal indicators, and general human indicators. The market and State indicators are presented here for comparison. Note that there is still education in community, but it is indicated differently than through schooling. Literacy levels and language fluency are indicators in community.*

Income (Market type)	Educatability (State type)	Education (Commons type)	Physical	Social	Psychological
Employment rate	Personal education level	Personal education level (self-potential in relation to all)	Instances of illness	Participation in exploration activities	Happiness
Income earned	Pre-school attendance rate	# of youth in exploration activities	Severity of illness	Participation on InterSystem Team	Self-esteem
Ability to meet consumption needs	Primary school attendance rate	# of youth on InterSystem teams	# of participation days missed due to illness	Physical abuse	
Net worth	Secondary school attendance rate		Access to routine medical care	Emotional abuse	
Value of household assets	Vocational school attendance rate		Access to emergency medical care		
Value of loans taken	University school attendance rate		# of meals per day; meal cycling (e.g., fasting)		
Access to credit	# of children supported in school		Nutritional value of meals		
Bank account use	Literacy levels		Access to clean water		
Home ownership	National language fluency		Distance to water source		
Land ownership			Access to sanitary environments		
Quality of house					
# of family members per bed					

**Table 12.** Direction > Human Requirements: *Economic tangibility and relationship to the self.*

Economic design outcomes (offerings)	How	Tangibility	Relation to self
<b>Resources</b> (source objects)	Extract (harvest, collect, gather, synthesize)	Fungible	Naturalized
<b>Services</b> (functions of object complexes)	Deliver	Intangible	Standardized, Customized
<b>Products</b> (goods, usable objects)	Make (manufacture, produce)	Tangible	Standardized, Customized
<b>Experiences</b> (conscious usage of objects and object complexes)	Being	Memorable	Personalized

**TABLES****Table 13.** Direction > Human Requirements: *Human Research Program Integrated Research Plan; a table of category options for deliverables.*

Category	Subcategory	Example input Users	Example Deliverables
Requirement or Guideline	Habitat Service System Design System Protocols and Preference Protocol	Contributors to the development of the sustainment and next iteration of the habitat service system as an information system	A duplicable informational service system
	Habitat Service System Operating Procedures and Guidelines	InterSystem Team contributors as part of habitat service sub-system teams	An duplicable operational habitat service system
Technology or Tool	System solutions, prototype hardware, prototype software	Power system operations; medical system operations, project coordination	Power; first aid and restorative counseling; project coordination interface and computational processing
	Database	Human research program (is part of Exploration HSS); habitat service system operations; demand articulation and search program [Reality boundary and human demand models]	Database created by gathering [all] existing data [Human flow/flourishing models]
	Simulation	Habitat service operation, decision probability computation (space); societal development program [Simulation flow models]	Decision support tool, integrated habitat infrastructural system model [Integrated information and material flow models]
	Computational models, software	InterSystem habitat service operational teams, common community users [Computation flow models]	Service quality and risk assessment models, resource planning model, coordination and prioritization models, inquiry search and decision resolution models [Information flow models]
Countermeasures	Prescription	Individuals among society	Demands
	Protocol	InterSystem team, common and personal access users	Decision system; InterSystem team habitat service operational procedures; common and personal access
	Prototype hardware or software	InterSystem team, Discovery and development team	Systems integration testing assessment
	Materials	InterSystem habitat operational system teams	
Standard	Update	Working groups, Discovery working groups, Coordinators	Community specification standard (unified, new pages waiting for reprint)
	New	Working groups, Discovery working groups, Coordinators	Community specification standard (unified, new pages waiting for reprint)
Risk characterization, and Quantification	Evidence	Working groups	Societal risk coordinated information sub-system
Study and Results	Demand request study, accounting, or analysis	Operational system definition, HSS project development	Human service analysis results and integrations

**TABLES****Table 14.** Direction > Human Needs: *Human need list (simplified example)*.

Need	Resource	Act of satisfying need (activity)	Reason	Output
Nutrition	Food	Eating	Organism	Health, motion, excretion
Shelter	Building material	Sheltering	Organism protection; organism work protection	Land usage

**Table 15.** Direction > Human Needs: *Human need list with modalities of human living*.

Needs of	Type	Being	Having	Doing	Interacting
Need to remain alive	Survival	Conscious	Consciousness	Choice	Breathing
Need to eat	Physiological	Hunger	Food	Eating	Cultivating, Preparing
Need to shelter	Physiological	Sheltered	Shelter	Sheltering	Constructing
Need to drink water	Physiological	Hydrated	Hydration	Hydrating	Cultivating, Preparing
Need to sleep	Physiological	Asleep	Restful environment	Sleeping	Sleeping
Need to move	Physiological	Moving	Movement	Movement	Moving
Need to orient in-self	Core value	Freedom	Alignment with self-direction	Participating	Serving
Need to orient in-social	Core value	Justice	Alignment with human need	Contributing	Restoring
Need to conserve while orienting (need to orient conservatively)	Core value	Efficiency	Alignment with what is possible	Flowing	Ephemeralizing
Need to adapt	Stabilizing value	Learning and integration	Having adaptability	Exploration	Educating
Need to sustain structure		Health and vitality	Having structurality	Restoration	Restoring
Need to see others as common		Appreciation and compassion	Having extensionality	Meditation	Meditating
Need to regenerate		Regenerative and technological abundance	Having capacity	Calculation	Computing
Need to coordinate		Openness and sharing	Having coordinality	Coordination	Sharing
Need to contribute		Cooperation and collaboration	Having contributionality	Contribution	Contributing
Need to contribute		Intrinsic motivation (autonomy, mastery, purpose)	Having intentionality	Self-determination	Choosing

**TABLES**

**Table 16.** Direction > Ecological Service Needs: *Ecological service categories of human need (highly simplified).*

Ecological Needs Service	Sub-category: Human Needs
Provisioning Services	Food
	Fiber/Textile
	Genetic resource
	Biochemical medicines
	Fresh water
Regulating Services	Air quality regulation
	Climate regulation (Global & Regional/Local)
	Water regulation
	Erosion regulation
	Water purification and waste treatment
	Disease regulation
	Pest regulation
	Pollination
Aspiration Services	Natural hazard regulation
	Moral values (limitations and optimizations)
	Belief values (limitations and optimizations)
	Exploration
	Discovery
	Learning
	Aesthetic
Supporting Services	Therapeutic
	Creation
	Soil processors
	Decomposers
	Soil formation (soil synthesis)
	Photosynthesis
	Primary regulators
	Primary production
	Nutrient cycling (recycling without universal solvent, water)
	Water cycling

**TABLES****Table 17.** Direction > Well-being: *The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)*.

Statements	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5
I've been feeling pain free	1	2	3	4	5

**TABLES****Table 18.** Direction > Human Ergonomics: *Human ergonomic factors (Simplified)*.

Human Ergonomic Factors	
Human Characteristics	Human Characteristics
	Psychological aspects
	Physiological and anatomical aspects
	Group factors
	Individual differences
	Psychophysiological state variables
	Task-related factors
Information Presentation and Communication	Information Presentation and Communication
	Visual communication
	Auditory and other communication modalities
	Choice of communication media
	Person-machine dialogue mode
	System feedback
	Error prevention and recovery
	Design of systems and processes
	User control features
	Language design
	Database organization and data retrieval
	Programming, debugging, editing, and software programming aids
	Software performance and evaluation
	Software design, maintenance and reliability
Manufacturing	Manufacturing
	Hardware design
	Hardware performance and evaluation
	Hardware design, maintenance and reliability
Display and Control Design	Display and Control Design
	Input devices and controls
	Visual displays
	Auditory displays
	Other modality displays
	Display and control characteristics
Environment	Environment
	Illumination
	Noise
	Vibration
	Whole-body movement
	Climate
	Altitude, depth and space
	Other environmental issues
Work Design and Organization	Work Design and Organization
	Total system design and evaluation
	Hours of work
	Job design

**TABLES**

<b>Human Ergonomic Factors</b>	
<b>Human Characteristics</b>	<b>Human Characteristics</b>
	Job scheduling
	Selection, screening and orientation
	InterSystem monitoring and accountability
	Education and training
	Use of support
	Technological change and integration
<b>Health and Safety</b>	<b>Health and Safety</b>
	General health and safety
	Etiology
	Injuries and illness
	Prevention
<b>Methods and Techniques</b>	<b>Methods and Techniques</b>
	Approaches and methods
	Techniques
	Measures

# The Social Orientation of a Community-Type Society

Travis A. Grant,

Affiliation contacts: [trvsgrant@gmail.com](mailto:trvsgrant@gmail.com)

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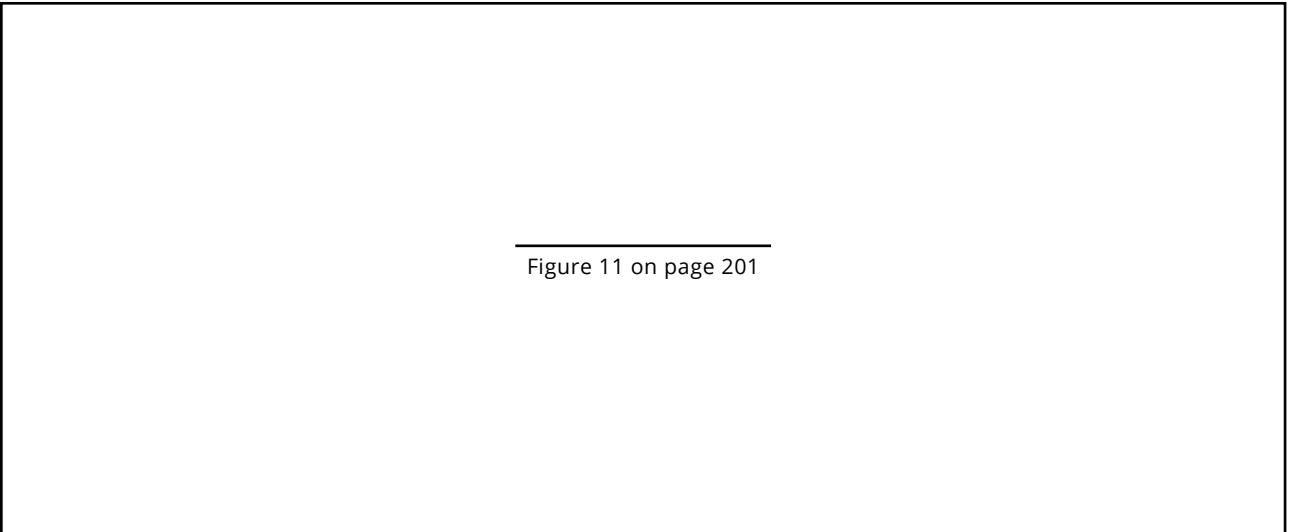
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## Abstract

Society includes a social navigational system that may be changed, and otherwise controlled, to reorient itself more (or less) greatly in a particular direction. In order to adapt to dynamic conditions, society must identify and encode a set of statements (Read: values, objectives) that are likely to progress the system in a state emergent direction. A value system is, at the societal level, an orientational system for navigating a population at scale. Humans can orient themselves in a direction that generates and sustains greater fulfillment, given the situation, or they can not. There are a set of knowable values that are likely orient humanity toward an optimal state of mutual human fulfillment. These values can, and are sometimes not, composed into objectives and decisioning requirements. All values are encoded into decisioning. Humans can select, or may not select, the values that are most likely to lead to conditions of optimized human flourishing. Humans can confuse values and misunderstand the valuing system itself.

When objective values become disregarded for the subjective, then values tracing often becomes obfuscated because the subjective is less reliable, particularly when embedded within competition.

## Graphical Abstract




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Figure 11 on page 201

# 1 Human values

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The concept of value is extremely important for all forms of social organization in general, and for individual fulfillment in particular. Valuing is involved in every decision made by a conscious organism, and hence, maintains a relative degree of complexity. This section describes the concept of 'value' in general terms. The five characterizations of value are briefly detailed in the next section ("What is a value"), before each characterization is described at length thereafter.

In a general or broad sense, a value represents a conceptual understanding that when acted upon aligns an individual with a direction considered worthwhile. In concern to human fulfillment, as a worthwhile direction, values ought to orient toward the fulfillment of needs. A value is something being moved toward - something considered and selected as desired in the presence of an information set and an alternative (i.e., in the presence of a choice). In vague and general terms, a value is a principled preference (of which there are multiple forms). At a fundamental level, understanding is the true basis of value. Herein, a value is composed of the information humanity uses to identify its needs given its understandings. Valuing organizes and re-encodes an information set to facilitate the structuring and prioritization of decisioning. In a sense, it is where separation and attraction meet to form the reasoning for a desired direction. Values rank what is "good" as a desirable direction, action, or condition, and what is "bad" as an undesirable direction, action, or condition. In this sense, a value is a comparator function.

Ideally, a value is freely and thoughtfully chosen by a valuing entity as an identification of that which is desirable, and ultimately, fulfilling. Valuing influences decisions and behaviors, and provides a reference for action. Valuing impacts human organization and relationships, and actions taken in pursuit of a value have at the very least personal, social, economic and ecological (or environmental) consequences.

Valuing involves the process of synthesizing needs and needed conditions from knowledge. A collection of knowledge can't "do" anything; there also needs to be the awareness by consciousness to act upon the knowledge (Read: intention). In a sense, 'value' is the derivation or creation of orientationally useful knowledge (i.e., "valuable meaning") from pre-existing knowledge by conscious intention to generate orientationally useful knowledge. The presence of orientational knowledge to consciousness allows for a greater certainty in decisioning.

The continuous integration of new information leads to the flexible re-clarification of a society's value system. It is through the logical integration of all available information toward the direction of human fulfillment that a global, orientationally useful value set arise. The values clarification process refreshes the orientation so that a society may more greatly align itself and its systems with everyone's real world fulfillment and highest

potentials. By understanding the world, a population can more accurately orient its decisions toward ones that generate greater abundance and predictable fulfillment. There is an environment that humans may derive feedback from to inform their models, so that, together, they focus and select decisions that have a fulfilling influence on themselves and their environmental ecology. Therein, values become encoded into systems through decisioning, and then, the materialized systems in turn signal that encoded value back to humanity.

Fundamentally, by designing and deciding in accordance with stated values, individuals and society may increment their systems toward greater states of fulfillment.

For a valuing (or moralizing) entity, value provides a reference for what is good, beneficial, important, useful, desirable, constructive, and so on. Value is an indicator of a "correct" direction. Values reflect someone's motivations, as well as their worldview and culture. Values may give meaning to someone's life. Valuing is an inherent part of the human decision process and plays an important role in defining a society's structure and culture. Humans are social organisms and depend on values for their successful adaptation to a dynamic (and changing) social environment.

When 'value' is categorically aggregated into 'values', then value becomes ordered (or prioritized) by relative importance and forms a personally desired pattern of integrity, a 'value system'.

The emotional concomitants of a value are part a human's motivational force and values exist as representations of basic motivation [toward greater or lesser states of fulfillment]. Valuing influences an organism's subconscious emotional mechanism to account for desires, experiences, and fulfillment or frustration, through the continuous assessment of relationships to a perceived reality (a "blueprint").

Humans, at the very least, use values to orient their perception, their behaviors, and their life's direction among alternatives. Actions on behalf of values may be used to describe the orientation of an individual or a society. This is why it is essential for values to be made explicit. When values are unconscious, then it could be said that the individual is unconscious in their orientation to life, unable to self-direct or re-orient their patterns of thought, emotion, and behavior as they lack an awareness of what they value, and thus, how and why they arrive at decisions. It may also be said that when an individual maintains unconscious values, that they are not in control of their behavior and that they are acting out unconscious programs - that their behaviors are fundamentally unconscious to the objective reality within and around them.

All of humanity lives within a social context of values, whether its is acknowledged, or not. Many individuals in early 21st century do not comprehend the idea of a value nor do they arrive at their values through careful and rational consideration, but are instead enculturated, sometimes consciously and sometimes unconsciously,

into a value set by family, friends, authorities, established institutions, and role models, that provide an emotionally appealing explanation of their life in society and of the "matrix" of society itself.

Epistemologically, the concept of 'value' is dependent upon and derived from the antecedent concept of 'life'.

To speak of 'value' as apart from 'life' is a contradiction in terms. It is only the concept of 'life' that makes the concept of 'value' possible. Wherein, values orient the lives of individuals toward life-fulfilling or life-frustrating experiences.

The existence of inanimate matter is unconditional; the existence of life is not: life depends on a specific course of action. Matter appears [at least] indestructible, it changes forms, but it does not cease to exist. It is only a living organism that faces a constant alternative: the issue of life or death, of adaptation or attachment, of lower information entropy or higher information entropy, and of growth or decay. Life is a process of self-sustaining and self-generated action. If an organism fails in that action, it dies; its chemical elements remain, but its conscious life goes out of this plane [of material] existence. It is only the concept of 'life' that makes the concept of 'value' possible. It is only to a living entity that things can be "good" or "bad", correct or incorrect, thriving or suffering, pleasure or pain, and fulfilling or unfulfilling.

Herein, society must ask, In what manner does a human being discover the concept of 'value'? By what means does a human being first become aware of the issue of "good" or "bad" in its simplest form? Human beings become aware of 'value' by means of the physical sensations of pleasure and pain. Just as sensations are the first step in the development of a human conscious, so they are its first step in the realm of cognitive evaluation. The capacity to experience pleasure and pain is innate in the human organism; it is part of human nature, and it provides a structure for learning; it provides a structure for valuing.

**INSIGHT:** *The human brain is amazingly tuned to social cues, which is [in part] why a change in values leads to a dramatic change in the expression of behaviors in a given society. And, at a neurological level, if someone changes who they associate with, they will find that their brain*

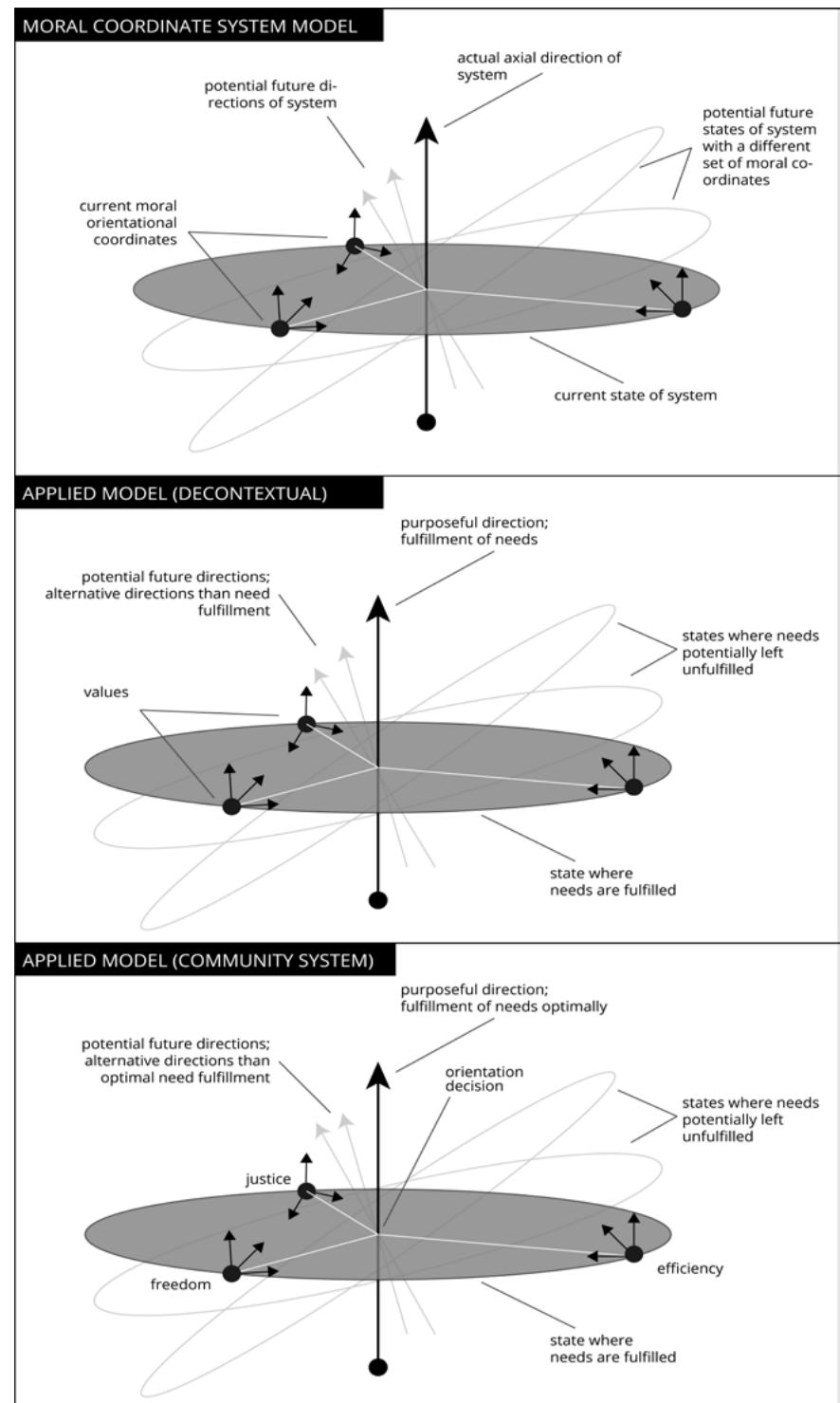


Figure 11. Theoretical and applied moral coordinate system model.

*may automatically rewire itself to value things differently. These understandings are laid out in the book "Social" by Daniel Lieberman (2013).*

## 1.1 What is a value?

The concept of a value maintains the following five sub-characterizations, which are briefly noted before each is described at length.

1. **A value is a principal axiomatic concept** required for the scientific discovery of objective and systematic knowledge, a perception of that which is. An axiomatic concept identifies a fundamental, self-evident truth (i.e., not dependent upon [as far as is known] the results of an experiment). An axiomatic concept is the identification of a primary fact of material existence, which cannot be analyzed from within the material system of reality itself. It cannot be reduced to other facts or broken into component parts. It is implicit in all facts and knowledge. It is the fundamentally given and directly perceived or experienced, a principal relationship requiring no proof or explanation, but upon which all proofs and explanations rest. Every attempt to explain reality [as a relationship] comes down to what philosophers call an ontological primitive -- the one starting point that has no further explanation is called an "axiom". Why can this not be explained? Because, someone can only explain one relationship in terms of another. If someone explains one thing, the question is, Is it reducible it to others? But, someone can't go on reducing forever. Eventually there is a bottom conception, an ontological axiomatic primitive. That thing simply exists, or that conception simply is; something that simply is "what it is". Notice here that different 'worldviews' postulate different ontological primitives.
2. **A value is a conceptual category** that has subsumed a set of related and verified rational understandings and scientific facts about the fulfillment of human needs, human well-being and flourishing. Stated in another way, a value is a set of facts, deriving a categorically systematic condition under which human beings' needs are fulfilled. The act of valuing (and categorizing) is a process undertaken by an existent conscious identity, a moralizing entity. Consciousness uses information to inform decisions. Hence, a conscious entity can utilize a value [as a set of accurate information] to inform its decision process so that the outcome of its decisions [which exist within the material existent system] are more greatly aligned with its highest potential, which is a meaningfully

desired direction involving at least the fulfillment of its needs. When inaccurate information and incorrect premises are used to inform a value, then the probability that action taken on behalf of the value will align an entity with an intended purpose becomes highly uncertain. The characterization of value as a category of fact involves the recognition that there are certain empirically discoverable states of the world (internal & external) that promote and orient toward a higher and lower potential for fulfillment. It is objectively valuable to a moralizing entity to have accurate information about states of the world that maintain the fulfillment of the entity's needs. The very idea of objective knowledge about the world, and the self in the world, is valuable to a "worldly" deciding entity. Accurate information has value to consciousness because accurate information reduces uncertainty in a [world] decision space and allows for the selection of decisions in greater alignment with a desired direction.

3. **A value is an informed moral coordinate.** It is a systematically dynamic state orientation that correctly aligns thought and action with an intended and desirable direction. Herein, value is a conceptual [moral] coordinate system for aligning a valuing entity with a desirable direction. For an individual, a value is a series of descriptive claims about desirable states of the internal and external world that verifiably orient the individual in a meaningful direction toward a higher potential of fulfillment. When this conceptual coordinate system is built on belief it is said to be subjective - it is a "belief system". When it is built on objectively referential knowledge, then it is said to objective - it is an "objective [moral] value system".
4. **Value is objective**, and objectivity is necessary in the development of moral conscience.
5. **Value is information in [at least] the brain** of a valuing organism. It is a component of a valuing organism's neurophysiological makeup of which the field of human sciences, particularly neuroscience and sociology, is increasingly illuminating.  
To summarize, value is an axiomatic, factual, and orientational process state applied to a situational and directional context to arrive at desirable decisions that fulfill the needs of an organism within a larger social and environmental system. The information contained within a stated value may be objectively valid and independent of human opinion or attitude. Moral values are not Platonic objects existing independent of the world. Moral values are grounded in the natural world

and grounded in the needs of conscious, living organisms. All patterns of conscious integrity in the material world are based upon values that involve [at least] information in the neurophysiological makeup of the valuing entity.

The following sections detail these characteristics of value at length.

### 1.1.1 Value is an attribute of objective and systematic knowledge

Conscious organisms in their pursuit of knowledge necessarily require (and possibly even generate) their own values. The very idea of objective and systematic knowledge (i.e., systematized knowledge acquired through unbiased and verifiable sensory observation of reality) has values built into it; every effort made to perceive facts depends upon concepts that must first be valued. There are three known categories of value as pertaining to objective and systematic knowledge: *the attributes of objectivity*, *the attributes of systems*, and *the attributes of science*. Herein, the term 'attribute' can be replaced with the term 'value': *the values of objectivity*; *the values of systems*; and *the values of science*.

The first and primary axiomatic concepts are those of what is generally referred to as 'objectivity'. The primary **axiomatic values of objectivity** are: *existence*, *identity* (which is a corollary of existence) and *consciousness*. Note that these are discussed at greater length in the Decision System specification. An organism can study what exists and how consciousness functions, but it cannot analyze (or "prove") existence as such, or consciousness as such [from within the material existent consciousness system]. These three values are irreducible primaries for the experience of consciousness in material existence. An attempt to prove them is self-contradictory for it is an attempt to prove existence by means of non-existence, and consciousness by means of unconsciousness. They are axiomatic precisely since all proof starts with them -- someone cannot know something without first admitting one knows anything.

Objectivity is a critically philosophical direction. It is the rational exploration of patterned and probable space (i.e., hypothetical space), and may be contrasted with science as the consistent exploration of real [world] space.

The primary **axiomatic values of systems** are: *interconnectedness*, *relatedness* (which is a corollary of interconnectedness) and *wholeness*. All questions about ourselves and the universe are asked within the bounds of an axiomatic understanding that the universe is organized as a whole relational system. A system is a network (or set) of connected, interacting, and interdependent components (or elements) and their relationships, which work together for a purpose (or objective) and form an integrated whole.

The very idea of an axiomatic concept may be understood [at least] through 'systems thinking', and

it applies to all systems. An information superset (i.e., suprasystem) cannot be defined from one of its subsets (i.e., subsystems) -- it is logically impossible. The subset does not have the information inside of itself to define the superset. A subset is only a partial component of the larger set. Every system has a set of axioms that can only be understood when a recognition and [minimal] comprehension of the supra-system is achieved.

Science is actually "in the values business" because the very idea of factual knowledge is itself predicated upon an identifiable (and definable) set of a priori values. These values include but are not limited to: logical consistency, reliance on evidence, parsimony, freedom of study and exploration, falsifiability, cooperative experimentation, open inquiry, honesty, and tentativeness. If desired, the **axiomatic values of science** may be divided into three principal value categories: *consistency*, *evidence* (which is a corollary of consistency and involves verification and falsifiability), and *openness* [to new questions and new evidence]. Together, these values form from a desirable orientation that seeks accurate knowledge of reality.

For someone to value facts that person must also value being open to consistency with evidential, verifiable and observable reality. Facts simply cannot be conceptualized, or spoken of, without embracing [at least] these "scientific" values. To "have facts", someone must also have these values [as well as having the values of objectivity and systems if integral understanding is to exist]. Hence, it is not that someone can't get an "ought" (i.e., derive an "ought") from an "is", someone simply can't get an "is" without embracing certain "oughts" [as 'value' axioms].

The very nature of science as a method for the discovery of knowledge to inform decisions is based on these sub-values (i.e., the attributes/values of science) that must be presupposed in order to "do science" or be a "Scientist". Someone who does not share and embody these values cannot apply the scientific method to the discovery of knowledge [about the world they exist and operate within]. And, nor can s/he attack the results of science in a way that anyone should find compelling as the mere concept of 'evidence' has no value to him/her. An individual cannot grasp the concept of a 'fact' without also grasping the concept of 'scientific value', and therefore, the premise of the "is-ought problem" (i.e. the fact-value distinction itself) is false. "Oughts" (as values) are built right into the foundations of scientific inquiry [as they are with critically objective inquiry and systematic inquiry].

The "is-ought" (a.k.a., fact-value distinction) problem puts forward the notion that science may be used to determine physical facts about the universe, but moral systems are used to determine questions of right and wrong. And, that science cannot be used for the latter. In more simplistic words, the problem is stated as: an "ought" cannot be derived from an "is" -- facts about the physical world cannot be used to determine how humans ought to live and act toward their well-being -- there is a limitless gap between "is" (a fact about the

physical universe) and "ought" (a moral claim to how humans should behave).

Without the values of science, facts are meaningless, which is why facts mean nothing to those who hold beliefs that are in verifiable opposition to facts. Facts mean nothing to someone who does not value a consistent and objectively discoverable universe of facts. One of the attributes of science is the idea of consistency. In specific, it is the idea of consistency with a commonly verifiable reality that exists independently of the subjective [egoic] self and independent of opinion. The scientific method cannot accomplish anything if the phenomena being explored with it is not consistent [with some degree of empirical regularity]. Individuals may have their own opinions on issues, but they are not "entitled" to their own facts. After all, it is impossible to remain consistent with reality while being dishonest, illogical, mathematically inelegant, and selectively ignorant of evidence. Science [in part] currently represents humanity's best effort to remain consistent with an emergently understandable and real, existent universe.

Fundamentally, scientific "is" statements rest upon implicit "oughts". Consider the simplest verifiable statement of scientific fact: Water is [at least] two parts hydrogen and one part oxygen. Note that the bracketed phrase, "at least", indicates that there may be more to know. But, what if someone doubts this stated proposition, this declarative statement? What if someone comes forward and says, "I'm sorry, but that's not how I [at least] choose to think about water?" The only action the communicator can then take is appeal to scientific values. The communicator could appeal to data from chemistry research, describing the outcome of simple experiments - the value of evidence - in this case some hundreds of years of evidence in chemistry. In so doing, the communicator must implicitly appeal to the values of evidence, of logical consistency, and of active/open mindedness—the value of understanding the world. But, what if the interlocutor doesn't share these values? What can the communicator say then? If someone doesn't value evidence, what evidence are "you" going to provide that shows that someone should value it? If someone doesn't value logic, what logical argument could "you" invoke to show that they should value logic? This bears repeating, what evidence could convince the interlocutor that evidence should be valued? What logic could demonstrate the importance of logic? Since evidence, logic, and reason (i.e., the ability to integrate experience) communicate and otherwise "show" people reality, if these conceptual understandings are not accepted, then reality cannot be verified or communicated. Therein, it would seem that communication, as the conveyance of accurate and verified information is not possible with such a person. Often such people protect themselves by repetitively hitting a reset button on their conversations -- the same conversation is likely to occur over and over again without any advancement.

This line of reasoning leads to the outright rejection of the idea of an is-ought problem: "ought" (a value)

is dictated by "is" in the actual inquiry for objective, non-contradictory, and systematic knowledge of a discoverable real world. Hence, individuals ought to act in such a way that what is true can be verified to be so through openness to the consistency and verification of evidence [through experience].

It is relevant and important to note at this point that the concept of "ought" exists only in the context of a brain capable of defining that concept. A brain is [at least] a living and physical object, something that "is". If "ought" cannot be derived from "is", then "ought" does not exist. Any conceivable argument involving "ought" must include an "ought" somewhere in the premises. No being capable of understanding a concept such as "ought" is free of pre-existing "oughts", which are in fact physical consequences of their structure (their "is"). An "ought", which is in fact an "is", can be used to derive higher-order "oughts". In a higher-order organism, these higher order "oughts" are values (or factual sets of information) about the well-being, fulfillment and flourishing of the organism itself.

Humans do, in fact, have a set of common life-serving imperatives, natural phenomenological "oughts", and these are known as human needs. Humans ought to fulfill their human needs for their survival and for their general well-being. Humans are [at least] psych-sociologically driven animals with a spectrum of needs. These needs are part of a phenomenological 'field-of-being' of human nature. Human well-being is not a random phenomenon. Instead, it depends on many factors - ranging from [at least] genetics and neurobiology to sociology and economics, from psychology and phenomenological psychiatry to biological nutrition and social organization. It is unwise to abstract human fulfillment from the evidential, observable real world in every respect.

As conscious beings, individuals choose an orientation and direction in their lives; though it is also possible to state that if someone maintains these axiomatic values, then their oriented direction is chosen for them, because that is where the evidence points and directs them toward, human fulfillment. Human fulfillment and flourishing is a meaningful direction to everyone for it is the essential and desired commonality among everyone.

A community-type society is likely to choose to apply an approach involving a series of methods and tools to support in the discovery of the most accurate alignment of actions and systems with the chosen direction of human fulfillment. Said society is also likely to categorize its knowledge into a conceptual system representing states of the world (Read: values) that are understandable, and have been verified to be desirable, in aligning with that direction.

### 1.1.2 Value is a category of fact

Reality exists as an objective and consistent absolute - facts are facts, independent of a conscious organism's feelings, wishes, hopes, faith, or fears. A fact is a real and

verifiably regulated [dynamic] state of the world. Factual knowledge of the phenomenological world is discovered through science. Science is in part a methodical tool (or process) used to determine facts about the world, including facts about organisms in the world. Science does not choose facts; the method(s) of science only allows a conscious organism [with the axiomatic value set described previously] to recognize what is and is not a fact.

Well-being and the conditions that support it are scientific questions that can be answered through scientific research and inquiry. If the role of science is to establish facts about the nature of the universe, then clearly, that is inextricably linked to questions about what will enhance or detract from human flourishing. Scientific understanding can be used to differentiate between actions that contribute to more well-being and actions that contribute to less well-being, assuming of course that well-being is the goal [of the design of the social system]. Because, some societal systems are not designed with human well-being as a goal.

*"There are truths to be known about how human communities flourish, whether or not we understand these truths. And morality relates to these truths. So, in talking about values we are talking about facts."*

- Sam Harris (2011)

Science does not choose what to value -- this is a category error; science does not choose anything because science is a method, not an agent with choice [and a decision space]. Science does not exist to determine choices. When someone puts forward the phrase, "science applied to social concern", they are likely not advocating for the scientific management of any individual or of social organization. Instead, individuals as conscious entities determine their own direction through choice within a decision space; and, the knowledge discovered through the methods of science facilitates individuals in aligning their decisions with their desired life direction(s). A tool can only help someone on their journey toward a destination, assuming there is a destination. If there is no destination (i.e., no goal), then tools are useless. If someone or some population does not have a desired goal, then they would likely not care how, let alone try to find, the best way to reach a goal.

There exist layers of essential commonality among human beings, and scientific discoveries provide a common ground for identifying those systematically related (and regulated) states of the world that lead to a higher potential of fulfillment. Fundamentally, human needs are objectively real and discoverable. They are independent of opinion. They are composed in large part by features of the world (and individuals' reactions and responses to the world) that individuals often don't have, or don't realize they have, a say in (i.e., they often don't realize they have potential for a decision that can change the outcome). Humanity does not have a need for a group vote on whether human individuals need

shelter, nutrition, air, stimulation, connection, growth and so on - human individuals just do need these things, due to the nature of their existence. There are, however, situations where people can trick themselves (or be manipulated) into thinking that they are hungry, even when they are not, or that they are sated when they are starving. But, the fact of the matter is that their thirst or hunger does not depend on how they have chosen to interpret their bodily signals.

Fundamentally, human needs are a common and objective interest of all human beings and must be a component of any plausible idea of a value system, and of morality in general. If the fulfillment of human needs is objectively valuable, then knowledge about how to orient oneself and society toward the fulfillment of human needs is of value. There are scientific facts to be known about the healthy (and optimal) functioning of humans, about well-being and the fulfillment of needs, and humanity can fail to know them to its great detriment. This is a fact. And yet, it is possible for people to deny this fact, or to have perverse and even self-destructive ideas about how to live and how they would like to force others to live.

What do people mean when they talk about well-being, flourishing, and human need? This is a scientific question and the ability of science to provide useful answers to this question has increased rapidly over the last 100 years, and will continue to do so given a continuity in discovery and communication. Well-being can be measured, and tragically, it is often ignored.

Objective steps need to be taken and new states of the world need to be realized if human needs are to be sufficiently fulfilled in common. Therefore, "ought" is derivable from the discovery of a human bio-physiological and psych-sociological nature. The distinction between a value and a fact, in this sense, is a linguistic trick. There are observable facts about the world, and these facts have value to organisms in the world. If individuals desire to move toward human fulfillment (a continuous and emergent state), then they must determine what values will hold in their lives as desires, motivations, outcomes, and preferences toward that end, which is really not an end, but a continuous and emergent experience. And, these "ought" to be based on facts about the totality of the environment in question (i.e., they "ought" to be scientifically verified and organized systematically). In community, all values are "equal" in that they are subject to scientific inquiry and corrective feedback in the same way. However, all values are not equal in their potential for generating fulfilling [process] states of socially structured existence.

Value is derived from a system of conditional imperatives that reduce to fundamentally desirable alternatives and the respective facts pertaining to them. If one wants to live, one ought to eat; if one wants to eat, one ought to produce food; if one wants to produce food, one ought to learn about gathering, permaculture, or hunting, or maintain a socio-economic system that regeneratively produces [real] food. And, if individuals

in a society want to maintain their health and well-being, then that society ought to produce nutritious food and limit the production of toxins that reduce a state of healthy functioning. Because the sustainment of prolonged existence or one of its corollaries is the sustainment of a consciousness living in the material world, then there is a consistent and empirically derived basis for sustainably resolving the content of the latter portion of conditional imperatives. In this sense, values are objective: they cannot be achieved consistently by arbitrary whim or erroneous opinion. A value is merely a higher-order expression of the basic imperative, "If you want to live, eat," which is one of the many imperatives relating to an individual's need-based relationship to the fundamental outcomes of existence versus non-existence. In other words, because humans are in human form, they are committed to the conditional imperative, "If you are human, and if you want to flourish, then fulfill your human needs". And, "If you want to live a fulfilling and meaningful life, then design social and economic systems that fulfill everyone's needs", or "If you want to live well, facilitate everyone living well."

Science is a means of making sense not simply of facts about the world, but it is also useful in forming novel orientational concepts (i.e., values) that maintain an alignment with a desirable directions. Some of the facts we can determine about ourselves include: what our values are, presently; what values are possible; and which of those values might be more effective and efficient at achieving some goal(s), such as orienting society toward fulfilling more needs on a larger scale.

There are genuine, scientifically discoverable facts about what promotes well-being and what interferes with it. And hence, there are scientifically demonstrable right and wrong answers to questions of human flourishing, and morality relates to that domain of facts. Herein, a consciousness has free will with consequence (due to the nature of reality), and long-term wrong action leads to chronic states of suffering in the individual, and in the social, of which the individual is a part.

With these understandings in mind, one might ask, "If human fulfillment, well-being, and a higher potential state are not the highest moral goal of a social system, as a universal goal of all humans, whether they have an awareness of it or not, then what is the goal of morality?" And, whatever the goal of morality might be, individuals would still require the use of science and other rational approaches to determine where they are and where they are going, otherwise morality is cut off from any authentic relationship to the real world.

Values can be derived directly from [empirical] descriptive claims about the way the world operates (Read: scientific technical principles). If values cannot be derived from scientifically descriptive claims, then the malignant alternative may just be a fallacious appeal to authority. It is not obvious how else someone knows what the most appropriate course of action is, aside from looking at the world as it is and how it might be. If value

propositions (or "ethical propositions" depending upon how "ethics" is defined) are not derivable or definable from non-value propositions, then it would appear that morality, and action in general, is cut off from the world. To be useful in the physical world, morality must reference the physical world [sciences].

The values that compose a community-type society's value system have an observable relationship (a "systems trace" or "bridge") to the world. Just as someone can determine a particular plant's nature and then ascertain what states of the world benefit its continued existence, we can also learn what would have to occur for it to flourish. Consider the claim that nitrogen, in certain quantities, is objectively valuable for many varieties of plants. Such plants have a specific nature, and there are certain states of the world that will sustain or promote their continued existence. Nitrogen would be objectively valuable for such plants. Nitrogen is involved in the fulfillment of said plants nutritional needs. No special faculty of affective perception or "intuition" is needed to understand this. No authority is required to force such plants to value and uptake nitrogen. Simply put, nitrogen is objectively valuable to nitrogen requiring and acquiring plants [within context and by degree].

Thus, value leaves no gap to be traversed and is clearly not an indefinable, intuited, or an unknown quality or relation. For humankind to flourish and reach greater approximations of its highest potential, certain states of the world must be sought, must be oriented toward, and obtained. These states are objectively valuable and informed by facts about the environment in relationship with the behavior and nature of humankind.

Individuals can visualize a 'decision space' of possible changes in the experiential fulfillment of human beings. As a metaphor, it is possible to imagine a probabilistic moral spectrum or moral continuum that corresponds to differences in the potential fulfillment of individuals. Some thinkers use the metaphor of a "moral landscape" with peaks that represent more fulfilling states of the world and valleys that represent less fulfilling states. If questions impact human well-being, then they do have answers, regardless of whether or not a given individual can identify them at present. And, just admitting that there are answers to the question of how humans flourish changes the way a society talks about morality and changes a populations expectations of human cooperation.

For instance, is it a good idea, generally speaking, to subject the young in age of a species (i.e., "children") to pain and violence and public humiliation as a way of encouraging healthy emotional development and "good" behaviour? Is there any doubt that this question has an answer and that it matters. Does the answer to this question involve an objective notion of well-being, and factually informed values? The concepts of 'well-being' and 'health' as generally open for revision, emergent in their definition as discoveries continue, does not make them vacuous.

Even if there were ten thousand different ways for

groups of human beings to maximally thrive (all trade-offs and personal idiosyncrasies considered), there will be many ways for them not to thrive -- and the difference between luxuriating on a peak of the moral landscape and languishing in a valley of internecine horror translates into scientifically understandable facts.

Humanity should no more respect vast differences in notions of human fulfillment (and values), than it should respect vast differences in the notion of how disease spreads, or in the safety standards of buildings and airplanes. Humanity simply must converge through some commonly useful means on the answers given to the most important questions in human life, and do so through [at least] a common community approach. And, to do that individuals must first admit that the questions asked about oneself and one's society has objective answers -- and recognize that the answers are not and cannot be arbitrarily dictated by an authority or by someone's opinion.

If there are objective truths to be known about human well-being - if kindness, for instance, is generally more conducive to fulfillment than cruelty, then science is able to understand and to make very precise claims about which behaviors and uses of attention are morally "good", which are neutral, and which are worth abandoning. A society that abandons scientifically verifiable claims about well-being is no human society at all and is diseased at its very core, it is a society without a means of orientation, it is a group of people gone crazy.

Thusly, a value is a category (or type) of fact - namely, a value is an empirical claim about the state(s) of the world that fulfill human beings and the conditions under which the well-being of human beings is optimized so that humans flourish and lead meaningfully fulfilled lives. In other words, since facts and values are not distinct, values can be regarded as a type of fact: they are facts about the conditions under which human beings are fulfilled and flourish. They are facts about the states of the world that all humans have an objective reason (a bridging factual rationale) to promote or to inhibit.

Hence, value is a conceptual category consisting of factually verifiable statements about an organism's intra- and inter-relationships (their internal environment and the environment around them). Values are categorized facts about 'states of the world' and 'states of the human mind/brain' that if acted upon provide the right conditions for fulfillment, and may even "re-generate" well-being in a dis-at-ease organism. With this understanding in mind, it is no great stretch to consider that science can be, and currently is being, applied toward the discovery and clarification of valuable knowledge and the identification of how accurately claimed values are at structuring and aligning humanity with its highest potentials. Herein, a population might ask, "How are we structuring our lives so that signals, internal and external to our individual selves, are reliable and sufficiently certain to generate mutual fulfillment?"

Clearly, questions about human values are really (i.e., quickly become) questions about human fulfillment.

Values translate into facts that can be scientifically understood. Science [and neuroscience in particular] does not simply explain why someone might respond in particular ways to situations involving material equality, or torture, but also whether equality is a "good" and a fulfilling [process] state, and why torture might be morally unacceptable and fundamentally unfulfilling as a socially accepted practice.

Herein, morality is discovered through the identification and measurement of behaviors, environments, and systems that contribute to human flourishing. The discrepant answers people give to questions about values eventually translate into differences in their brains, their behaviors, and their ultimate fulfillment.

It is at this point, while discussing "value as a category of fact" that there must exist a deliberation on the difference between 'values' and 'ethical principles'. This deliberation is an essential component toward the philosophical argument for 'value' being a category of fact and the selection of a 'value system' for the community as opposed to a set of stated 'ethical principles'.

**INSIGHT:** *It is indisputable that are better and worse ways to treat a cardiovascular event or to facilitate an individual in making "healthier choices" so they are less likely to experience such an event, when it is preventable. Hence, so too can morality be understood in terms of empirical information.*

### 1.1.2.1 Values versus ethical principles

**NOTE:** *The social prism with which we view ourselves will affect how we view (or judge) others. Individuals within some societal configurations view themselves as part of a larger ecological whole, whereas individuals in other societal configurations may view themselves as players in a competitive game. Some configurations of social and economic systems are empirically better in their coordination of the fulfillment of human needs than other.*

A distinction must be made between values and ethical principles. Values and ethical principles are similar in that they both define someone's ideas of what is important versus not important, what is right versus wrong, what is true versus false, and what is optimal versus non-optimal. However, whereas values [as they are defined herein] are an evidentially verified orientation toward fulfillment, ethical principles are unbreakable rules of conduct that often maintain the allowance for authority's subjective interpretation and for consequential punishment [by authority] when violated. Please note that the definitions are sometimes, though more rarely, reversed in common parlance. Abstract ethical principles are useful for control, but not useful for orienting individuals among a community toward an emergently fulfilling direction.

Ethical principles are defined herein as consequential

authoritative statements on human obligations, duties, or restrictions on relationships and conduct. Ethical principles do not maintain the condition of emergence (or tentativeness) and are not "allowed to be compromised", and there are often punitive consequences when they are violated. Ethical principles are embodied and established by tradition, religion, culture, leadership and authority (e.g., political leadership and governmental legal authority).

The black and white thinking that accompanies the dictator nature of ethical principles adds little value to a community that seeks a solution orientation that recognizes a commonly discoverable and consistent reality. Life is not about those who abide by ethical principles (e.g., "governmental citizens") and those who violate ethical principles (e.g., "criminals"). Instead, life is about the fulfillment of needs, aspirations and creative desires. Life is about discovery and mistakes; it is about adaptation and integration; it is about that which has reference so that growth has a meaning.

There exist both 'ethical principles', which concern ethics as the governing (or ruling) of behavior, and 'technical principles', which are the technical rules of operation of a system. Scientific principles are the technical principles of phenomenological reality; they are facts. In natural environments, these principles are the mechanisms of what is sometimes known as 'natural law' - or more accurately, scientific models - they describe how a natural environmental system works and presume that it always works in that way until verified evidence indicates that it works in another way. A scientific principle is a verified regularity in an emergent and probabilistic reality, in phenomenological nature. In science, laws are not so much "rules that are not broken", but emergent descriptions of regularities in phenomenological reality. These regularities do not change with the whims, likes and dislikes, affective states, or preferences of humans. Until proven otherwise everything and everyone's experience appears bound by them. They are the formulas of the phenomenal world. And, knowledge of them is useful to conscious organisms. Conscious organisms may use more accurate information about the world (i.e., more accurate technical principles) to arrive at more informed decisions and design systems that are more effective and efficient at fulfilling human needs.

The notion that a practical system of values is derivable from ethical principles [as defined herein] may be flawed. Any decision that does not involve objective reality—the world as it is—as its starting point is doomed to end in futility. Objective reality is composed of natural living systems and these systems are composed of a set of discoverable technical principles (or scientific principles), not ethical principles. Verified technical principles are not open to opinion or authoritatively "told" or "scribed" interpretation. Technical principles are descriptive. Ethical principles are authoritatively prescriptive and generally imply the idea of duty, obligation, and command; the notion of compliance, or else. Ethical principles can quickly become commandments and

form into duties that one is to obey under compulsion or threat. Invariably, duties of this nature entail some form of self-sacrifice. Yet, in truth, life requires the attainment of needs through the adaptation of values, not their sacrifice. Hence, one might go so far as to say that every ethical principle contains at least one belief: the belief in "authority". Rational morality is neither about "duties" nor "obligations". It is about applying reasonably emergent associations to the task of living and enjoying a common existence, one's social life.

The idea of "duty" commonly denotes the moral necessity to perform certain actions for no reason other than obedience to some higher authority, without intentionally thoughtful regard to any personal fulfillment. A "duty" is not the result of one's own choices and actions - the near opposite of truthful "moral responsibility".

The motive idea that each individual has the innate ability for adaptation, self-direction, and self-development, that desire exists for purposes of fulfillment, and that each individual in every moment has the power to perceive themselves as sufficient regardless of the dictates or self-serving claims of another, seems more empowering than punitive statements of right or wrong behaviours, attitudes, and authoritative standards; true morality relates to a state of freedom versus the state of authoritarianism, totalitarianism, and fascism.

Every time someone makes or takes a choice as to what is true or false, that choice entangles that individual very quickly in an unfathomable network of implications, with the potential to increase or reduce the freedom to make new choices. Every choice leads to the unfolding of a network of implications. It is only wise to entangle and align a future probable decision space with objective reality and real world fulfillment [as a commonly desirable direction]. Ethical principles do not maintain this characteristic for they come into being through the dictate of an authority figure(s), an "authority leader".

In antiquity personal difficulties were often explained as an offense to the gods, and even today said difficulties are explained as an offense to authority. Open inquiry steps in and provides the freedom for individuated consciousness to take a step back and say, "this is just a natural and discoverable phenomena that is not yet immediately understood"; it is not magic. It is ok to be curious and explore, there is no such thing as authority; life is explainable [in time].

Scientifically informed values will evolve and change with new discoveries, and thus, support in a population's adaptation to new environments, new contexts and understandings, and new directions. The concept of an ethical principle does not maintain the idea of adaptation as one of its conceptual characteristics. Ethical principles are intended to be enduring until interpreted otherwise by a legitimized authority. This is not to say that ethical principles should not be used to direct action within a context or that the authority cannot hire "scientific advisors" to "advise correct courses of action"; it is just to state that ethical principles will hinder adaptation

and rational decisioning for they do not maintain the axiomatic understandings of science, objectivity, or systems. Instead, ethical principles are highly likely to create barriers to adaptation and change, particularly when they become established [by an institution of legislation].

Established systems represent a danger to the survival of a community because they do not acknowledge the evolution of information [systems] through the discovery of knowledge and persistent necessity for adaptive change. They maintain no mechanism for self-correction (e.g., science); wherein, life is a path of constant self-correction. Alternatively, factual values are a flexible reflection of what is important, and they represent an emergent and integrated guide to action based upon verifiable facts. A value composed of emergent scientific understandings might be considered "flexible", whereas an ethical principle would not maintain this descriptive characterization.

A community that exists in an emergent and adaptable state will likely maintain a community value system instead of a set of ethical principles. Such a community of individuals might recognize the technical nature of the world and allow this information to inform their emergent systems while maintaining transparency of change(s) to those systems as they occur (as opposed to secreting and obfuscating changes).

Adaptive behaviour depends on the accurate evaluation of environmental changes. The extent of accuracy is itself dependent upon the individual's level of what is commonly referred to as personal-development (or self-development), which involves many factors, not the least of which is a reduction of non-corrective thinking processes. One must be prepared to change one's ideas and understandings in the face of new evidence if one is to effectively adapt to a new [information] environment. One must have a stable self-image, a reasoned and realistic awareness of their behaviors, and the consequential influences in the behaviors of others. A person with inner freedom is able to adapt to the environment as it is rather than as s/he thinks it should be. Perception, thus, is complete or incomplete depending upon a person's "stage-of-development" (i.e., how many layers of filtration do they have in place). The quality of perception is a function of the level of personal development, integration, and self-actualization, and it is based on motives for learning and human needs.

When values are in alignment with needs and maintain a physical reference in the process of arriving at decisions that benefit all of humanity in kind, then humanity will no longer be in a fight against nature. To fight actively against nature in any of its forms is not only doomed to failure, but will inevitably condemn the individual to profound dysfunction within a larger dysfunctional society. One simply has to look at modern market organizations (businesses) and jurisdictional authorities (governments) to witness such dysfunction. Fundamentalist environments simply provide an less

obfuscated view of such dysfunction. Please note that it is hard to see the dysfunction of one's own society when one has been enculturated since birth (i.e., normalized) into that society's dysfunctional beliefs, principles, and values. Fundamentally, to dissociate behavior from the environment and from that which is discoverable (i.e., nature) is a contradiction and can only lead to more contradictions.

It is hard to notice when someone's own culture, the one that person has been deeply enculturated and assimilated into, is less than optimal, possibly, hideous. Then, the question quickly arises, "Is one acclimatized to a degraded way of being; has a lesser potential that what is knowingly possible become normalized?" It can be very easy to find oneself loving things that aren't great for oneself or others; things that are more "expensive" and "costly" to the expression of one's higher potential state of living. One can live in a police state (and in fascism), and not know it, if one is not sufficiently alert. One can live around and participate with horrific actions and have no realization as such. One can advocate for violence and have no realization of what they are actually supporting.

Philosophically speaking, there is at least one ethical principle that makes contextual sense at the social level: the non-aggression principle (also called the non-aggression axiom), which includes consideration of any principle following from it or intrinsically related to it, such as the principle of self-defense. The non-aggression principle is a potentially valid ethical principle because in its claim as to how behavior "ought to be governed" it principally negates authority, force, and coercion. The non-aggression axiom states that the initiation of structural, physical, or psychological force, violence, and coercion against persons, or the threat of such force, is inherently "illegitimate", regardless of excuses used to aggress (i.e., it is not "legalizable"). The non-aggression principle is a personal statement that,

*I should not use violence or the threat of violence (i.e., coercion) to get what I want; though, maybe I can use violence if someone is acting on an intent to harm me or others, but I should not initiate the use of force to get my way in the world.*

In brief, the principle goes something like this: Thou shall not initiate force, though thou may respond to it in kind if the receiver of an assault. Under the conditions of a community-type society, "authority" (as a structure) is seen as an inherent form of aggression, as a form of structural violence. Whereas, the non-aggression axiom is the inherent negation of any person's authority over any other person. Fundamentally, the non-aggression principle is something to think about in living more consciously. Simplistically, the non-aggression principles is saying, "Do not aggress against others, and if aggressed upon, then it is natural for an organism to seek to protect through aggression".

To some degree, the non-aggression principle requires

a victim -- as in, the "aggressor" and the "victim" of the aggression. If it is the axiom of a paradigm, then any argument from that paradigm may potentially include the "aggressor" and "victim" model. If the regenerating source of aggression is found to be [in part] the system, then where is the "victim"; is not everyone then a victim of the system [structure]? In regulated competition there is care over who started, or instantiated, aggression; which generates the formation of a State (as a state of regulation on competition to protect all competitors). In cooperation there is care over why the system created an environment where aggression manifested. In regulated competition it matters who started a conflict and it matters who is capable of owning or dominating the conflict. What environment allows one human being to be aggressed against by another and punished by a third? In truth, it is incredibly frustrating to be wronged by another's aggression (non-consensual harm) and to be punished for defending oneself. In cooperation, the environment is accounted for; in competition, initiation and dominance are accounted for. If someone see themselves as a "victim" then figuratively speaking, one is "dead in the water". If "you" acknowledge that "you" are a victim, then "you" need a rescuer. Those who are "victims" are seen as incapable of doing things for themselves. And herein, it must be recognized that a victim is someone who is giving over (or, has given over) their own internal power to a so-called "rescuer" (e.g., to the professionals, to industry, to heroes, or to the State; to the authority of the day).

Anyone who thinks they are a "victim" is already working with a tank [of esteem] half empty. Individuals have to think of themselves as being in control of their own lives; having a high 'locus of control'. In the absence of this not much else is important. In every moment individuals have the choice to be a "victim" or a self-integrator. Herein, it is necessary to realize that trauma, like victimization, is a repeating feedback loop of self-limitation; and, it is important to note that someone who has been traumatized may not realize they have encoded the trauma (figuratively speaking, when people are traumatized, and have become "stuck", then people need to "release" the trauma to become unstuck and to continue a path of self-development).

It must be mentioned that there are definitional and relational issues with the principle, and hence, if it is to be applied, it must be applied in the larger context of objective values, human well-being, ecological consideration, and with a consideration of other forms of structural violence. Notably, coercion cannot be reduced to just behavioral (or policy) action; instead, it is more accurately the result of a larger process. And further, nature is inherently "coercive" (or restrictive); can't just do anything want, for nature sets real limitations. There are laws (or technical regulations) that in a very real way restrict behavior in this real world environment.

The non-aggression axiom is strongly advocated for by those who identify themselves as anarcho-free-market capitalists, Austrian economists, right libertarians,

among others. Yet, oddly enough, the market system does not promote non-aggressive thinking. When viewed historically, the market is a competitive [life] system that forces individuals to compete and otherwise fight over resources to survive, and within which, there will inevitably be problems of aggression (i.e., there will exist inherent structural violence). As such, the market exists in contrast to a cooperative way of living, which recognizes that resources ought to be cultivated carefully so that everyone can survive, thrive, and facilitate a healthy ecology. A competitive market-based socio-economic system will by its very [obligatory] structure generate behavioral aggression between some competing parties (i.e., aggression is structurally reinforced). And, there will inevitably be people who are going to use force to do things that should otherwise not be done (i.e., that systematically reduce well-being among the population). Essentially, the non-aggression principle is not systematically reinforced in the market; in fact, aggression is incentivized. Hence, the principle assumes no environmental affect.

In concern to the application of the concept in a market-based economic paradigm, there is also the potential issue of the withdrawal of support in the form of resources, which would itself not be identified as aggression per the principle, but could quite easily lead to suffering. For example, a parent may withdraw resource support for a child who is less capable of supporting themselves, which is technically not aggression, but could technically lead to starvation.

Since the non-aggression principle is an ethical principle it can only be applied to humans and between humans, and hence, it doesn't facilitate a respect for (i.e., a respectable relationship with) all other living systems, creatures and beings on the planet, and its adoption (to the negation of ecological concern) has the potential of engaging a speciesist mindset -- it is not "rightful" to aggress against other humans, and aggression against other species is not a "rightful" consideration. Speciesism, as the assigning of different "rights" and values to different species, quickly leads to the belief that one species has more of an ethical "right to life" than another ... because it isn't human. It is a subtly disguised bias against other species in a common ecology, a presumption of superiority, an epic kind of wastefulness. Thus, the question quickly arises, "Is the non-aggression principle not worthy of being extended into the total ecology of the planet, and if not, why not?" If someone harms the environment then they will inevitably harm the people and other creatures that live in said environment. And, under market conditions such behavior is not a question of if, but of when. What might have begun as a defensive mobilization [for survival in a competitive market environment (i.e., business organization)] ends up a self-serving apparatus (e.g., government) intended to boost a given population's lifestyle at the expense of others.

It is also relevant to note that although the non-aggression axiom objects to the imitation of force, there

is no coherent objection that an aggressor could make if s/he were treated with force by those s/he aggressed upon - this is known as the self-defense principle, and it is a natural survival mechanism (it exists in nature as an instinctive reflex, regardless of the non-aggression principle). The self-defense principle states that when someone makes a claim of being allowed to do violence to another person, then that other person is always "right" (i.e., has the "legitimized right") to defend oneself with physical force. If think about it, nature defends itself in many ways and sometimes it uses violence.

The self-defense principle makes the claim that if one is being accosted with violence or the initiation of coercive action, then always reserved is the right to use defensive force (i.e., defensive violence) against the entity who is exerting the initiation of violence. Therein, there is a necessary usage of force to put down violence if accosted with it. It is relevant to note that some people believe that it is never valid or valuable to use self-defensive force to stop an act of violence if necessary; this is known as "pacifism". Yet, organisms in nature frequently protect themselves from predators through force (both "a show of" and real), and sometimes they use extreme violence; pacifism is rarely, if ever, found in nature.

It seems that if the environment is evoking a stress response (e.g., survival in a competitive gaming market) in an organism, then "you" are asking an awful lot of the organism to be less violent.

**MAXIM:** *It is wise to make evaluations in terms of needs, and technical existence, as opposed to what is claimed [by an authority] to be "right" and "wrong".*

### 1.1.2.2 Functional ethical principles

Ethical principles are prescriptive boundaries within and beyond which an authoritative entity has fully imagined legitimate use of force, violence, and/or coercion. The authority, through the enactment of an ethical principle, acts as a restraining force (or fear inducing force) on those persons and objects the authority has believed control and legitimized (or legalized) force over. In nature, however, the restraining force is not that of an ethical principle dictated by an authority, but instead is observationally verified as a phenomenological 'scientific principle' (or 'technical principle').

Generally, ethics is the term used to discuss all moral or value terms. In this sense, the primary purpose of "ethics" is to critique and to design the operationalized orienting system of a society (e.g., a value system). The term "meta-ethics" is used to discuss the origin and nature of both a normative system and ethics.

Social control can be coordinated through many different types of relationships. Different types of relationship will likely create different types of society [on a values circumplex]:

1. A State-type society uses authoritarian-based

coordination relationships to control society (e.g., coercion).

2. A market-type society uses competitive-based coordination relationships (e.g., trade).
3. A community-type society uses contribution-based relationships to control society.

"Control" can carry a negative connotation for many people. However, here, the term "control" is used in its broadest sense to include any psychological, social or material activity that directs, guides, regulates or influences a person to perform or refrain from performing certain actions. It is used the way the term "control" is used in reference to the activities of design and usage. Societal control may be either informal or formal. Informal societal control is exemplified in the functions of traditional culture. Formal societal control is exemplified by the explicit development and usage of a shared information system with integration and change procedures. There are many categories of control method (Read: methodical control) that can be used by a society's population. In the market-State, control is "delegated" to specific groups with the "authority" to enforce [a monopoly on force] the control (e.g., laws, decrees, regulations, codes enforced by justices, police, and military). In the market, control is delegated with the authority to use violence to restore normative property relations. In the market-State, control functions as the organizing force (Read: violence) in society, providing structure to organizations and institutions. In community, control is an iterative programming of society by means of an openly standardized informational decision/resolution (i.e., procedural) system. In a community-type society, control functions as the programmable contribution (Read:

When removed from the context of authoritarian ethics, the generalized and pluralized term 'principles' may be loosely defined as: rules intended to be enduring and seldom amended, that inform and support the decisions an individual, group, or system makes to fulfill its purpose. In this sense, there exist functional ethics (a meaning that is synonymous with values). In the sense of functional ethics, ethical language (i.e., statements of right and wrong) can be analyzed from the viewpoint of its function. (Russel, 2008) Functional ethics (values) are statements of right (in alignment) or wrong (out of alignment) alignment of conditions (Read: conditional relationships/dynamics) with behavior and intention. Here, values could be seen as social directives (or, vectors; atomic vectors). A control system is, in a sense, an imperative application system (or, an imperative operating system).

A computer model (or, computer processing analogy) can demonstrate some necessary features of a control system. Computer processing requires two systems to obtain any organized output:

1. The information system consisting of data or facts.
2. The control system, the system of commands

(instructions, operations).

Command in the presence of facts enables function. The operation of a computer is produced by an algorithm which combines commands and facts. The application of a command is usually based on an item of fact. For instance an algorithm may state: "If there are more than 10 items in category X go to C, if not go to D". Here, the information or truth aspect of the operation (the number of items in category X) is a fact that the command uses to make a decision. The command does not operate as a fact within the system. (Russel, 2008)

Information and control are not interchangeable in the operation of a computer program. Commands are "do" statements, that is, imperatives. Information statements in themselves, do not require the computer to do anything. The end of the algorithm is to produce an output, that may be to answer a question or to control a physical process, such as telling the printer to "PRINT".

It should be noted that commands can be stated as facts or information. A command when listed, is information and can be treated as information. Information, in the computer analogy, is equivalent to truth or fact in philosophy or science, while the command statements are equivalent to ethical or moral imperatives. Organizations of information and materiality control human behavior in a manner similar to the way commands control the computer. A major obvious difference between computers and people is that the computer is externally programmed and must obey the command, while the human is self-integrating and need not do so. The situation that humans do not need to obey a command, accounts for much of the difference between computer imperatives and the various kinds of orientational (ethical/moral) concepts.

### 1.1.3 Value represents a moral coordinate

**INSIGHT:** *Punishment sacrifices human needs.*

Value represents a moral coordinate system for the orientation of [process] state-based decisions along a desired axis. A coordinate system is a means of assigning coordinates to a location and establishing relationships between sets of such coordinates, thereby enabling the interpretation of a set of coordinates as a representation of an orientational position in a 'world space'. A 'world space' is a [space of] pattern that are calling a 'world'. It is a space that may be experienced in a sensorial manner, and senses may be used to more greatly align ourselves along an intended path within a probable territory (i.e., to navigate).

When the coordinates have a relationship to the real world, then the representation is that of a position in 'real world space', in reality. In a real world referential system, value coordinates are identified through scientific discovery and refined through critical thought prior to their integration into the system that maintains navigation among the community.

In a system, each coordinate represents a partial

description of the current state of the system, and together, the coordinates orient (or orientationally describe) the actual axial direction of the system. In other words, coordinates descriptively identify the positional state of a system, and together, they form the dynamic of the system. In systems thinking the 'state' of a system is a complete description of the system in terms of its present conditions, its parameters, values, and variables at a particular moment in time. Hence, each coordinate represents a sub-state, and partial description, of the overall system. A moral coordinate system represents a framework for the directing of attention.

Values are a requisite component of an orientationally coordinated approach to decisions within the real world. Herein, a 'moral coordinate' is another name for a value. As a value, a 'moral coordinate' describes a position in the dynamic state of a socially interrelated system relative to an axial direction [or purpose]. A moral coordinate is a [partial] description of the current or future desired orientational dynamic state of a system.

A 'value system' acts as a 'conceptual coordinate system' for orienting a community in a desirable direction. Each value in the Community's value system is a moral coordinate (as a sub-state of the overall state of the system), and must maintain a reference to the material world in order to accurately orient toward the fulfillment of discovered, real human needs.

A full description of a moral coordinate system necessarily involves a discussion of the concepts of coordination and morality. Coordination is discussed in the next sub-section, and then morality is discussed at length following.

**MAXIM:** *That which is outside the possibility of choice is outside the possibility of morality.*

#### 1.1.3.1 *Organizational coordination*

Systems are comprised of elements that interact to produce a predetermined output, condition, or state. Coordination is a necessary functional attribute of an effective system where elements of a system with differing functions must be adjusted in order to reach a common purpose (or objective). Coordination is a principal activity in the organization of energy, resource and effort, and a vital component of the organization of every system. In a living system, coordination is required for a strategic response to challenges, problems, and other dynamic issues that might arise. The aim of coordination is not new - improvement of performance is a universal organizational goal - the better the coordination, the higher the organizational performance. And, in concern to a social system, it would be wise to point coordinated organizational performance at the fulfillment of human needs as a moral direction.

An organizing act can also be viewed as coordination. To organize is to assemble ongoing interdependent actions into *efficient* sequences that generate *effective* outcomes. One important purpose of coordinated organization is to formalize actions thereby reducing

undesired variation, and to control and to anticipate actions, which increases predictability and stability in the system. Stability is an important aspect of organization and of system continuity. Hence, the existence of a common value system with a rational and objective selection of core values for stabilizing the social system and orienting decisions in a meaningful direction - to fulfill human needs and facilitate in the persistence of well-being.

Actions within a system are mutually dependent, and an important part of coordination is to harmonize these dependencies. Definitions of coordination also involve the acts of dividing goals into tasks, the allocation of resources to the completion of actions, the migration of different actions into a whole, and fed back evaluation of actions compared to an objective (or direction). Researchers have identified at least three mechanistic activities that are necessary in order to perform coordination:

1. Coordination through **standardization**,
2. Coordination through **planning**, and
3. Coordination through **feedback**.

*Note that these activities are necessarily encoded into the Community's decision system and they are discussed at length in the Decision System specification.*

If a social system seeks to coordinate decisions so that the systems maintain a stable alignment with the needs of individuals, then the system must account for these three mechanistic activities in its decision process(es). In other words, they must be accounted for within the [economic] decision system of a community.

Coordination also involves some form of 'coordination logic'. In a social system, coordination is the process through which two or more desired conceptual coordinates (i.e., values) interrelate and complement the functions of one another (i.e., conceptual synergy) in the performance of a social objective, a common and mutually beneficial purpose. At a dynamic community level, coordination is the process of integrating values with situational needs (e.g., wants) as well as absolute needs (e.g., human needs) to arrive at decisions that maintain an orientational alignment with a desired direction. In the Community, coordination is concerned with maintaining harmony and cooperative efforts toward the fulfillment of human needs [through at least the three mechanistic activities previously noted].

Accurate coordination necessitates accurate information. Knowledge about the universe is knowledge that is consistent with the universe, and that tends to make it extremely useful for purposes of coordination. Scientifically referential values will logically identify desirability (and probability-out conflict) within a coordinated decision space. Hence, the community maintains a coordinated value system for [at least] three purposes.

1. Values exist as a form of useful information in the coordinated fulfillment of needs.
2. Values exist to coordinate individual and social activities in a desired direction. The "desired direction" represents a context for alignment.
3. Values may change (or adapt) over time as life conditions (including understandings) evolve.

Hence, can create the life conditions (i.e., "structures") that facilitate the emergence of a particular set of values. Herein, it is important to recognize that to some degree have made up social existence together, and that if have made it up, then can make up something different, possibly a social existence where are all thriving.

Some systems are simply unsuitable in their structure for generating and maintaining human fulfillment. Some structures by their very nature minimize human potential. Other structures, by their very nature, evolve human potential. Do not allow structures to become strictures. The potential of anyone's life experience is reduced or enhanced by the structures and strictures they accept. Herein, values orient the next [design] iteration of a structure, and they can facilitate the creation of structures that reduce potential or enhance potential. Community generates structures where it is possible for people to have self- and life-fulfilling experiences. Fundamentally, socio-economic structures are [in part] a reflection of the value system of partaking individuals.

Values serve as a means by which complex social problems may be resolved in a local structure (i.e., a system). And, "optimal values" are the "optimal means" by which complex problems are resolved in a local structure. Some values and choices are not optimal for human fulfillment; they do not coordinate in the direction of human flourishing. Herein, values become the organizational logic used to coordinate state changes in a socio-economic system, in community. The premises that values are based upon must be accurate (i.e., in alignment with reality). If "you" start with an invalid premise, "you" end up with an invalid result (i.e., decisions and behaviors that are not likely to align individuals and communities with their desired direction).

The foundational premises upon which a conclusion is based cannot be faulty or without proper evidence for the conclusion to be considered factual. Needless to say, being logical within the cognitive framework of being illogical only takes someone "so far" toward the notion of organized and coordinated fulfillment in a common reality. Logic is necessary, but not sufficient - the logic may be sound, but the premises may be inaccurate. Both the logic and the premises must be "sound" for the continued and stable existence of a community and accurate alignment toward a "culture of ascent" (i.e., social movement toward a higher potential state of existence).

As a logical systems process, optimal values have the potential of coordinating the arrival of an optimal

decision. Herein, 'optimal' means whatever is thought optimal; the concept may only be applied relative to a context. It is relative to whatever is considered an optimal state or outcome, the objective of the system. If fulfillment is thought optimal, then what organization of conceptual understandings might coordinate decisions that lead to ever greater states of fulfillment?

The concept of information is closely associated with that of coordination. All coordination involves information and every living system is at its core an 'information system'. Information systems involve *storage*, *retrieval*, and *transmission* capabilities. They require processes to accomplish tasks, which involve rhythms and schedules. Information systems accomplish more than their individuated components through *events*, *objects*, and *relationships*, and through coordinating tasks (and activities) over time and space.

In an information system, the choice lies between less entropy (less randomness) and more entropy (more randomness), between order and chaos. Patterns exist within which choice exists—this is a fractal process—the same structure in a repeating pattern. A fractal is a self-similar structure that repeats itself in different ways. The context is the rule-set for that particular local information structure. A decision that creates greater coherency also optimizes resolution of that which "is", to consciousness. A decision that reduces coherency will optimize randomness, while reducing understanding and coordinated organization.

In an information system, morality represents motion toward a state of lower entropy (i.e., less randomness and more accurate information). Information is the foundation for the evolution of systems and evolution as conscious human beings is predicated upon clearing up misinformation that is keeping from making those necessary steps toward a higher potential of creation. In information systems, to de-evolve means to lose *order*, *structure*, *meaning* and *significance*. Essentially, when an information system de-evolves it loses its information and becomes less able to coordinate its fulfillment.

**QUESTION:** *How complete is the information being used to inform a coordinated action? Would it be prudent not to act until more information becomes available? Will an action align an individual or society with a common and universally desirable direction?*

### 1.1.3.2 Morality

Morality (from the Latin *mōrālitas* "manner, character, proper behavior") is defined herein as the differentiation of intentions, decisions, and actions between those that are in alignment with a coherent direction (or right/true) and those that orient away from this axial alignment (or wrong/false). Morality is a rationally justifiable set of claims about an objective [behavioral] direction, and it is not illusory. Morality exists within the context of a definable direction and must always involve the freedom of conscious choice (i.e., a decision space) and some form of logical reasoning. In the Community, the contextual

direction is that of a systematically discoverable universe and an intentional social organization that maintains a meaningful direction for all human beings, the fulfillment of common human needs. Thus, morality becomes the logical and rational reasoning of [behaviors that facilitate] human fulfillment and well-being, based on knowledge. Herein, accurate evaluations of the environment are a necessary condition for the existence of morality. And, action against (i.e., thwarting) the fulfillment of human needs is considered regressive (i.e., immoral).

It is important to note here that although morality and ethics have two separate definitions, both herein and in common parlance, they are words that are often semantically interchanged, though not interchangeable. They have two separate definitions, and sometimes someone gives one definition to ethics whereas another person gives that same definition to morality. As was discussed earlier, herein, they have two distinct definitions.

Every definition of morality address questions of right and wrong, good and bad, direction and orientation, and it always relates these questions to well-being, in some way. Every moral framework regardless of context involves:

1. Right/correct—desirable action, orientation and direction.
2. Wrong/incorrect—undesirable action, orientation and direction.

Wherein, an action is desirable when it more greatly aligns the individual and society with an intended direction and undesirable when it orients away from such alignment. Ecologically speaking, an action is desirable when it favours equilibrium between an organism and its social environment (i.e., socialization), though not at the cost of the fulfillment of the organism's needs.

The fulfillment of humankind is a paramount consideration when discerning whether an action is "morally correct" or "morally incorrect" for a community. Moral choices come from rational efforts to improve human well-being. Authority-based prescriptions and cultural relativism are not helpful when discussing human fulfillment. Human flourishing, well-being and fulfillment are an objective basis for human morality. Hence, whatever tends toward human flourishing is objectively moral and whatever mitigates against human flourishing is objectively immoral.

If morality means anything relevant, then it has to do with the well-being of conscious creatures; and likewise, an inquiry into what may enhance or diminish this well-being (i.e., correct and incorrect action), which has not only a conceptual and spatial aspect to it, but a temporal one as well. Temporal [moral] logic isn't necessarily immediately visible. For example, spanking a child may give a parent immediate results, but s/he isn't likely to notice the probabilistic, yet scientifically definitive cause and effect relationship between the spanking and the manifestation of other issues in the future, such as a

lower IQ, more "acting out", and being more prone to aggression toward others, which are the probabilistic, scientifically factual results of spanking. Notice here, that there is no is-ought problem. The whole rational basis of ought, and values in general, is the factual requirements of what human beings need to survive and flourish. There are facts about temperature, shelter, nutrition, etc., that imply what human beings ought to do to survive and flourish. And, this is [in part] why science is so important in answering moral questions and why the scientific method (and a systems approach in general) is useful in addressing moral questions.

Human flourishing arises [in part] from the sufficient fulfillment of human needs. When real needs are not sufficiently fulfilled there exists a high likelihood that individuals will express self- and socially-directed corrosive behaviors. Hence, it may be said that human flourishing is the sufficient fulfillment of human needs such that corrosive behaviors are not manifest and individuals are meaningfully fulfilled within a larger, stable and socially cooperative environment. A social environment may be considered "stable" (i.e., cooperatively functional and dynamically progressing, and not oppressive or regressive) when social cooperation is normative and moral behaviors are manifest within individuals [in common].

Fundamentally,

1. If morality doesn't critically involve well-being, it's a meaningless term, and
2. the fact that people often make mistakes about the definition of morality, polluting morality with abstracted bias and debris, does not make it a meaningless term.

The very idea of right and wrong moral action may be understood in the context of the "moral actor". Humans, for example, have emotions and desires; they also have a decision space. Healthy humans as "moral actors" care about their own well-being, about those who they love, and traditionally, about the well-being of others in their social community (e.g., a "tribe"). Humans are social animals, and in fact, have no choice but to share a finite planet with each other. One individual's behavior affects others. If had no cares at all about what happens to or others, or actions had no effect on anything but ourselves, then potentially there would be no need for morality, and in fact morality might have no meaning. However, that is not evidential reality.

Questions of right and wrong depend upon minds. They depend upon the possibility of the consistency of conscious experience. Minds [at least] are vehicles of consciousness. Minds are also a natural phenomenon and rest within the "laws of nature" in some discoverable way. Morality and human values, therefore, can be discovered through science, because in talking about these things, are talking about all of the facts that influence the fulfillment of conscious beings who

maintain a decision space. In the case of an emergent community, 're talking about [at least] genetics, neurobiology, psychology, sociology, and ecology. Hence, values can be evaluated empirically, in terms of their universality, their neurological basis, and the effects of their implementation in a society, and on the well-being of individuals.

If there are facts to be known about how human minds and conscious creatures can experience the worst possible misery and the greatest possible well-being, then it is objectively true to say that there are right and wrong answers to moral questions. And, whether or not can always answer these questions in practice is based largely on a sufficiency of information, rational and critical thinking capabilities, and an openness to verifiable information.

If the emotive terms "good" and "bad" are to be used, then it can only be said that what is good is to ever more greatly align with highest potential nature, and what is bad is to ever more greatly distance ourselves from that potential of experience. In the permutation tree of all human choices, is it not wise to choose the most strategically effective and efficient path to human well-being? In other words, some choices verifiably lead to deterioration (physical and psychological) and so can have rational and integrated agreement that those are to be defined as "bad" choices. Whereas, some choices could select are verifiably more likely to lead to prosperity and flourishing, and they may therefore be defined as "good" choices.

Reality, along with the decision to remain in it, (i.e., to stay physically alive) dictates and demands an entire system of values. Unlike organisms with a smaller decision space, modern industrialized humans do not appear to pursue the values that fulfill real needs automatically; humankind in its present state must [re]-discover and choose them, but this does not imply subjectivism.

Every fulfillment-aligned value involves the identification of a fact as a given object or action that will fulfill a need: or threaten the fulfillment of a need. The good, therefore, is the recognition of nature. The bad is a form of contradicting nature and maintaining illusory realities. Knowledge for any conscious organism is a means to surviving and thriving. To a living conscious being, every 'is' implies an 'ought' - every discovered fact of reality has, directly or indirectly, an implication for humankind's self-preservation and for its wisest and most moral course of action. For instance, sunlight is a fact of reality, but once its effects are discovered by humankind and integrated into intended direction, a long series of evaluations follow: the sun is a good thing (an essential of life as know it - photosynthesis is the basic economy of the planet). Within the appropriate limits, its light and heat are good, good for you; other things being equally dynamic, therefore, ought to plant crops in certain locations, build homes in a certain way (with windows and airflow), expose eyes and skin to the sunlight, and so forth; beyond the appropriate limits, however,

the sun's radiation is not good (e.g., it causes burns). All these evaluations are demanded by the cognition involved - if one pursues knowledge in order to guide one's actions. Similarly, tidal waves are bad, even though natural; they are bad for if get caught in one, and ought to do whatever can to avoid such a fate. Even the knowledge of what now know as gravity, which represents a somewhat different kind of example, entails a host of evaluations - among the most obvious of which are: using a parachute in mid-air at a calculated height above the ground is good, and jumping out of an airplane without one is bad, bad for a human's life.

Humans have needs if they desire to remain alive. Those needs ought to be fulfilled in the most efficient and effective manner so that individuals in a society have the freedom to pursue that which they find most meaningful - this is true 'social morality' - a conceptual arrangement designed to re-generate the dynamic state of fulfillment.

Grounding [social] morality in things that people abstractly value or desire or care about or prefer or hold an opinion on (e.g., market economic value) appears to miss the point of morality altogether. People, for a wide-variety of discoverable reasons, often act against their deeper preferential well-being or live in ignorance of what their preferences would be if they had more experience and accurate information.

To suggest [in context] that aberrant and irrational cultural variations create insurmountable obstacles to a common morality is to suggest that the existence of hand amputees prevents the manufacture of gloves.

In a community organized around human needs, it is obvious that morality must involve objectivity and must not involve authority. Evolution toward a higher potential is possible on the basis of objective morality as informed by discoverable human needs and acted upon through scientifically derived values.

As conscious individuals existing within an intentional community identify options with the information have available. And, if need more information to arrive at an optimal moral decision, then gather more information prior to action. Without accurate information in context, moral decisions are not possible -- [moral] lifeboat scenarios are a waste of time. And herein, it is wise to remember that people can very easily fool themselves into thinking they are taking correct action after shoving accurate information through the filter of their ego, personal circumstance, and all manner of narratives and perception biases, the consequence of which is thoughts and behaviors that are completely out-of-touch with the reality of human fulfillment.

### **1.1.3.3 Authoritarian moral and ethical oughts**

**INSIGHT:** Authority replaces choice with obedience. A coercer might say, "If your will doesn't conform to my will I will use psychological or physical violence against . I am going to hurt in some way that don't want me to hurt if do not do, or become, what I tell to."

In natural reality, there are no authoritarian "shoulds" or "oughts" as commands and threats from "authority". The belief that an authority gives rights, liberties or freedoms, or is the basis of any form of morality is fundamentally flawed. Morality is not an authoritarian social system, or any system of force, violence, and coercion. It is neither legal codes nor retribution. And, morality does not involve dictation to people as to what they must and must not do, and punishment of their transgressions. If desire to transcend such limited beliefs, primitive instinctual reactions, and erroneous conceptions, then it is important to reveal the biases and falsehoods inherent in them in order to attain a truth adequate for humankind's effective usage in creating fulfilling common[unity] environments.

Morality is considered as an attempt to answer a question, "What should I do?" Morality is a question that only a rational and freely thinking consciousness can explore the answer to; morality is not a force from authority. And yet, a community that acknowledges a consistent and discoverable universe ought to attach its moral sense to the maximization of human needs and the minimizing of individual insufficiency otherwise its very persistent existence comes into question.

When words like "wrong" and "should" are used, many people feel quite uncomfortable, as these words can imply some higher power or authority that decides what is "wrong" and how people "should" behave. In fact, this is quite often given as the definition of ethics, where ethics [and sometimes moralism (or "authoritarian morality")] are defined as the governing of behavior by institutions and [actual] actors (i.e., humans in suits and uniforms acting out predefined and programmatic roles). Ethics is concerned with normative evaluations and judgments, which are interpreted by an authority who is either an institution or an actor [often acting on behalf of the institution of authority]. Ethics is dependent on another (or other person/entity) for *definition, interpretation, and inquisition* (e.g., the jurisdictional court system).

Most disputes on questions of morality actually concern ethics; that is to say, they concern objecting to other people's behavior, not one's own. Definitions go on to state that ethics are the external rules and standards provided (or dictated) by "institutions" that define (and may themselves interpret) allowable, and therefore punishable, inter/intra-personal thought and conduct. Violations of ethical rules are [nearly] always considered a punishable offense (i.e., retributive justice as a consequence), which may come in the form of ostracization, forced labor, physical pain and/or kidnapping, caging, death, isolation, and torture. Ethics, as defined herein, is formulated on the premise that the individual is a powerless and insignificant inanimate thing. The concept of 'crime' is a sub-conceptualization of ethics - a violation of ethics - and may involve "thought crime", "consciousness crime" (e.g., drug use), "victimless crime", and "victim crime", and extends from pre-cognitive crime through to pre-meditated crime. One might see how the concept of "crime" when applied to

the authoritarian organization or "governing" of a society could be problematic and lead multiple hierarchies of interpretation, judgment, authority, jurisdiction, retribution, and punishment. In a monetary market economy, criminal law and punishment enforcement might even work its way into becoming a for-profit industry where jurisdictions, bureaucracies, courts, and prisons are operated as for-profit corporations - a hellish monetary dystopia.

You can't get healthy, happy, well-adjusted and fulfilled people to go out and be prison guards or soldiers, which is to a great extent what early 21st century society relies upon, and although it may not (or may) be engineered that way, people naturally take advantage of the situation. Lions get together to hunt gazelles, they don't have to plot it out in some smoky room. It is just their instinct and desire under their natural environmental conditions.

Morality, as opposed to ethics, requires context and choice. Go to prison and try to convince the prisoners to eat better meals. They will laugh at and tell that are crazy; they have little choice in their meals. Nutrition advice is meaningless when don't have a choice about what eat. Moral advice is meaningless when don't have a real choice about your actions, when authority and other abstracted external concepts govern individuals' real interrelationships.

When some external individual or entity defines reality for "you", then "you" lose your freedom and sufficiency, and exist within what may be metaphorically called a[ artificial] "matrix" - reality defined by an outside other - a reality in which peoples actions mean nothing to their fulfillment. "you" lose touch with reality and lose touch with "your" natural ability to integrate reality into "your" mental model(s) of the world and coordinate "your" fulfillment. This very quickly creates intellectually vacuous and willingly insufficient individuals who are incapable of adapting and growing (i.e., they are incapacitated). Most people, when they begin to become aware of the matrix, simply get rid of one program and adopt another less restrictive program in its place; they do not drop all programming [from authority]. It is important to become fully aware of the nature of the "prison", its patterns, and how it functions in order to remove all compulsion from the system.

What if, in nature, there is not "ought", and that all that exists is that which "is"? Then, choice becomes paramount and the results of a choice are not open for interpretation; they are the truth of that which was chosen and that which has occurred. Some choices verifiably lead to a higher potential of fulfillment and others a lower potential, but since there is no authoritarian force telling everyone what they "ought" to do and punishing them for what they "ought not to have done", that leaves only that which "is". There are only choices that lead to a higher fulfillment as have been empirically observed or probabilistically shown, and choices that verifiably lead to states of nature that are less than optimal for human flourishing.

When removed from the biases of authority and of limiting belief, then morality is bounded by the fulfillment of human needs and human well-being within the context of a natural, life-serving ecological environment.

In reality, there is a universe of possibility that can be known about maximizing human well-being and the well-being of all other conscious creatures. And so ask, what will maximize well-being? There is every reason to think that this question has a finite range of answers. Given that changes in well-being are bound to be a product of natural regulations in nature, must expect that this space of possibility—the "moral landscape" as it has been referred to—will increasingly be illuminated by scientific discovery. And therein, maintaining an evidence-based (i.e., research-discovery-based) approach to any coordinated and oriented direction seems eminently useful. *Evidential reference* is necessary for all forms of navigation, and are truly navigating within a universe of possibility. Yet, the term 'evidence-base' becomes meaningless when the evidence cannot be trusted (i.e., when it not open verifiable and/or given by authority).

**QUESTIONS:** Who in your life and society has a monopoly on the usage of coercive action? Who has a nearly infinite ability to escalate violence?

#### 1.1.3.4 Authoritarian conscience

The authoritarian conscience represents the irrational internalisation of authority - it is a state of being where conscience has no logical referential tie to the phenomenological world and human fulfillment, but instead has attached itself to the commands, taboos, and approval of an external authority. This internal voice may be backed up by fear of punishment, or spurred on by admiration, and it is often created through idolization of an authority figure. Notice that the voice of the authoritarian conscience is obeyed not because it is imparting the wisdom of fulfillment, but because it is in authority. The presence of the authority figure is necessary to strengthen and maintain this voice, otherwise it loses its power and the conscience that considers and desires fulfillment can reassert itself. And, in order to maintain power [over another], authority will seek to inserts itself into all forms of inquiry such that it is always ready with its "gifts of knowledge" or punishment for transgressed inquiry, were applicable. Most people conditioned into early 21st century assign their value and power and control outside of themselves, and they feel good about it.

The conditioning of an authoritarian conscience can come from:

1. Projection onto someone of an image of perfection.
2. The experience of "parental" rules and expectations.
3. An adopted belief system with its own authority structure.

Authoritarian conscience does not function toward adaptation (or adaptability) and creates a cycle of insufficiency (or deficiency) both within the individual and in future generations conditioned to accept the authority. The failure to fulfill human needs in a self-empowering and non-authoritarian manner results in a stifling of all areas of potential growth. As a result of persistent growth inhibition an individual's sense of identity becomes perverted and threatened, which can lead to their continual dependence on others, particularly the authority, for approval (i.e., psychological dependence) and may manifest the behavior known as 'pleasing'—someone who is constantly trying to please others [to everyone's downfall].

The "good [authoritarian] conscience" produces a feeling of relief and security, for it implies approval by, and greater closeness to, the authority; the "guilty conscience" produces fear and insecurity, because acting against the will of the authority implies the danger of being punished and - what is worse - of being deserted by the authority. In order to understand the full impact of the last statement must remember that character structure of someone who has given their mind over to an authority. Such a person has found inner security by becoming, symbiotically, part of the authority felt to be greater and more powerful than oneself. As long as s/he is part of that authority—at the expense of his/her own integrity and fulfillment—s/he feels that s/he is participating in the authority's strength. His or her feeling of certainty and identity (Read: the need for significance and for certainty) depends on this union; to be rejected by the authority means to be thrown into a void, to face the horror of nothingness. Anything, to the constructed authoritarian character is better than nothingness. To be sure, the love and approval of the authority gives him or her the greatest satisfaction; but for many, even punishment is better than rejection. The punishing authority is still with him or her, and if s/he has "sinned", the punishment is at least proof that the authority still cares.

Psychologically dependent individuals often persist in their efforts to retain the approval of others (or of authority) even if it means repression of their own growth and social relationship needs. In the absence of motivation for growth their thought and behavior patterns are dominated by basic psychological needs, including the needs, as mentioned, for certainty and significance. When these needs dominate a personality they are sometimes designated as 'deficiency needs' or 'deficit needs'.

Motivation by deficit needs is known as 'deficit motivation'. Deficit motivation results in meta-pathologies of feelings of de-humanisation, repression, and a wide-variety of other neurosis, which are likely to be present in both "good conscience" and "guilty conscience". Therein, the neurosis will likely involve the irrational projection of images of perfection (i.e., perfection ideals) onto an external entity or onto authority. Yet, it is a delusional construction to create a

higher power and then give one's own will (or autonomy in the present) over to it; it is a self-destructing orientation - an orientation of higher entropy - an orientation that de-constructs one's own will power in the construction of the authority. Therein, the individual loses the ability to re-orient themselves through the self-selection of a more fulfilling focus, physiology, and meaning; which are instead "given" to them (or "commanded" to them) by the authority.

The construction of an "authoritarian conscience" involves the interaction of two processes that are based on the instinctive desire to admire as well as to have and to strive for an ideal (or for perfection): first, the perfection of character is projected onto another individual or an external agent of authority as a parental, religious, spouse, sports, or State figure; and second, the projected image of perfection is internalised or interjected into the individual's consciousness, whereby it becomes an "authoritarian conscience". Internalisation of the projected image of perfection leads to the individual's unshakable conviction in the external authority as the personification of the perfect character. The conviction may be so strong that it is immune to all empirical evidence that might prove to contradict it. The power of adoration of, or fear for, the authority replaces the power of objective reasoning, and the individual loses the capacity for rationality and objectivity in cognition. As a result the programmed (or constructed) conscience becomes increasingly authoritarian and irrational, which this leads to the rigidity of all forms of authoritarian conscience. The irrationality of authoritarian conscience interferes with a comprehensive understanding of the self and of others preventing the formation of meaningful interpersonal relations and personal growth.

Hence, authoritarian conscience is inadequate for effective evaluation of interpersonal relationships and social conditions. Its rigidity fails to produce behaviour that is adaptive to changes in the social environment (i.e., it is socially in-adaptive), and it regeneratively manifests corrosive relationships and behaviors (sometimes given the emotionally laden labels of "wickedness", "evil", or "anti-social behavior"). Even weak authoritarian conscience, which doesn't have the appearance of expressing pathological behavioral traits, can be extraordinarily intractable.

Authoritarian conscience is in part a direct result of aberrant conditions for healthy growth, which are prevalent in a cultural environment that focuses on *the control of human needs for subjective ends* as opposed to the fulfillment of all common human needs in a transparently objective, participative, and supportive manner. The artificial and manipulative forces of external control, which become internalized (Read: the internalized policeman), deprive the individual of the means of empowerment and fulfillment.

In many cases, individuals may become ambivalent or fearful of re-engaging their willingness to create a fulfilling environment. The integration of fear will in turn stimulate the psychologically reactive responses (i.e., impulses) of

repression and denial [about the situation in which they reside], which further inhibit growth motivation and stimulate deficit motivation. The resulting cycle prevents healthy growth, adaptation, and self-development - at scale, it prevents a systematic understanding of social and economic problems. Someone who appears as a human adult, but is caught in this cycle might be identified as an "immature adult" (i.e., they lack wisdom or maturity in their basic understanding of the universe's truthful operation). Therein, the emotional states of frustration and aggression, which are natural by-products of an authoritarian conscience, uncouple volition while engaging fight or flight, and other stimulus-response instinctual sub-routine programs.

Mature individuals whose basic psychological needs are fulfilled in a real [and not pseudo] sense, generally have self-respect, self-discipline, and self-direction; therein, they experience a state of being where purpose, worthiness, and authenticity are maintained. Such individuals might be referred to as 'self-actualizing'. With a basic sense of worthiness and a sense of purpose, such individuals are likely (or likely to become) self-disciplined and self-directed toward growth, maturity, and self-actualization.

How does the idea of "authority" prevent the conscious self from intentional re-unification with community?

1. Take away personal thought and individual understanding. Knowledge is given from an idealized persona or from authority!
2. Take away personal action and responsibility. Responsibility and punishment are given from authority!
3. Isolate consciousness. Wherein, structurally re-generated discipline removes self-determination and self-regulation creating the "internalized policeman".
4. Imprison consciousness. Self-generated consequence.

The very idea of "authority" is the tyrannical final common pathway for control [of the mind by an exclusive other] and the elimination of volitional thought, behavior, and understanding. The whips and rewards of authority exist in opposition to the drive toward fulfillment.

Eric Fromm (1947) identifies several categories of conscience:

1. "Good conscience is consciousness of pleasing authority, guilty conscience is consciousness of displeasing it." (Eric Fromm, 1947:09)
2. The 'humanistic conscience', in contrast, is "own voice, present in every human being, and independent of external sanctions and rewards" (1947:118). Fromm sees this category as humanity's

true self, found by listening to ourselves and heeding deepest needs, desires and goals. The result of listening to oneself and of introspection is to release human potential and creativity, and to enter into a higher potential; "the goal is productiveness [in self-growth], and therefore, happiness" (1947:120). This is something gained over a life of learning, reflection and setting and realising goals for ourselves.

It is sometimes said that the degree to which conscience is developed determines whether cognition is complete or incomplete. Therein, cognition is incomplete if moral development is incomplete. And, cognition is complete if moral development is complete, emergently speaking.

#### **1.1.3.5 Free will**

If there is no free will, no choice within a decision space, then no one is morally responsible for their behaviors and growth has no meaning. However, humans do have choice within a decision space; hence, they have free will [bounded as it is by the natural environment]. There are aspects of consciousness that appear automatic (e.g., perception, the subconscious, biological processes, emotions, and reflex actions), and there are those that are volitional (the choice to *focus*, and other choices that follow from it such as the selection of *physiology*, the *meanings* ascribe to language -- choice to direct inquiring mind possibly being the most important). Yet, long practicing meditators will tell you that even those processes that appear automatic can be gained an awareness of and conscious command over [through intentional and focused meditative practice].

Focus is the precondition of all thought. "You" must first be in focus to have a thought. Focus is the first step to thinking—by its definition, it must exist before "you" can make any other choice. The choice to focus is the choice to think; the choice to think is the choice to use that faculty that allows an organism [as embodied consciousness] to pursue life and creative desire. In this sense, one might be able to perceive that it is a choice to focus and that what is now known as "will power" provides the ability to shift focus (or attention). It is sometimes said that the real technology for self-change is 'attention' [of mind toward focus of thought].

There is always a reason to focus - but there are times when individual consciousness is not in focus (e.g., authoritarian conscience). The question, "Why did I choose to focus?" is like asking, "Why does the universe exist?" Existence is axiomatic to the universe, and irreducible. Focus is axiomatic to thought in the same sense; it exists and is irreducible. Free will is not affected by the content of a mind, but the content of a mind and the neurophysiology that allows a mind to direct its material organism can mean the difference between being in focus and being out of focus (i.e., thinking and acting clearly, and thinking irrationally and acting impulsively).

Note that having free will within a decision space does not imply that a conscious organism can think whatever or do whatever it wants. Conscious biological organisms can only think within the bounds of information they have access to and can only choose from the available choices within their decision space. There exist real limitations to choice, including but not limited to: awareness, fear, ego, neurophysiological processes, environmental conditions and conditioning, and the technical principles of reality. There is no evidence to indicate that a material human being can choose to start thinking about a topic that its consciousness / organism has no derivatively referential prior exposure to.

**MAXIM:** *Fear not only makes vulnerable to those who would oppress , but it tempts to be oppressors.*

#### 1.1.3.6 *The travelled perception of culture and cultural change*

Since cultural preference is non-instinctive, humans are not genetically programmed to learn a particular one. Every human generation has the potential to discover new things and invent better techniques and technologies, to evolve their structures. Wherein, new cultural skills and knowledge are added onto what was learned in previous generations. As a result, culture is cumulative, to a degree. The regular addition and subtraction of cultural traits results in culture change. All cultures change over time—none is static. However, the rate of change and the aspects of culture that change varies from society to society. People are not usually aware of their own culture until they experience another (i.e., until they have “travelled”). Therein, traveling provides an opportunity for the erosion of “-isms”, particularly nationalism, and other harmful cultural boundaries.

#### 1.1.3.7 *Behavior and the environment*

**QUESTION:** *Under what conditions and states of the world are you at your full potential?*

The environment plays a critical role in behavior and is an input into every organisms' [moral] decision space. Human behavior is fundamentally influenced by the environment (i.e., environmental signals). The environment, in relation to human beings, is at the very least the natural and man-made physical surroundings, the institutions and social organizations, and the knowledge, opinions and ideas that surround individuals [that thwart or satisfy fulfillment]. Behavior in specific, and biology in general, are not deterministic; they are responsive and adaptive. They exist in a dynamic and emergent relationship with their environment. Early 21st century society tends to overestimate personality-based explanations and underestimate situational influences on other people's behaviour. Though interestingly, that's not the case for most people in early 21st century society when explaining their own behaviour. Human behavior cannot be judged outside of the context of environmental influence. Such judgment represents an emotionally

subjective reaction to a discoverable context and is not conducive to understanding or to solving problems in the long-term.

When broken apart the word ‘responsible’ becomes “response” (a state of feedback) + “able” (capability). The term represents the power and ability to respond to an event [from the environment] with focused and informed intention. And, whenever want to perform some kind of conscious act, have to assume that there are preferable ways to realize intent [given the information have available and the information can collect].

Different environments reflect themselves in different modes of being, which are reflected in different externals (e.g., doing and having), such as language. Specific types of environmental organization lead to the manifestation of specific types of behavior, which may also be known as “organizational behavior”. At a social level this becomes what is known as culture (or “cultural behavior”). In many ways minds (and behaviors) are programmed by the cult[ure] are “enculturated” into.

At a basic and fundamental level, the environment affects the way people live and behave, down to the smallest detail. The environment reflects itself in those systems that reside within it. The environment does not control the choices someone makes with regard to his or her goals, moral actions, and behavioral expressions, but it limits the possibilities open to an individual and provides a context for all decisions. From a behavioral perspective, the study of morality is necessarily the study of behavior, including the contexts in which a behavior occurs and the environmental events of which it is a function (or product / result). Analysis from within this framework (i.e., frame of reference) may allow the successful identification of the variables that influence moral behavior, and ultimately, the development of coordinated social organizations and decisions to increase the occurrence of fulfilling behaviors (i.e., moral behavior).

Physical behavior exists within a physical environment. To abstract behavior from the discoverable environment is to abstract it from all useful inquiry -- inquiry is no longer open, but agenda and ideologically based (i.e., it is political - it becomes a political social system, not a humane social system). Fundamentally, exploratory and anxiety behavior is [in part] determined by the characteristics of the [eco]system, the environment.

Individuals are highly shaped by their environment. If individuals are placed in a depraved environment, where they must fight to survive, then they will fight. If they are placed in an environment of abundance where they must cooperate, then they cooperate. Some [environmental] systems just bring out the worst in people.

Fundamentally, bio-social pressures (that are products of the dynamics of a system) influence behavior. And when fulfillment pressures are recognized, then a more fully developed and intentionally directed human being becomes probable. At a base level, environmental pressures provide an opportunity for inducing adaptation.

### 1.1.3.8 Social insufficiency

'Social insufficiency' best refers to a society that is neither designed nor organized to serve in the fulfillment of common human needs. Such a society generates insufficiently fulfilled individuals, some of whom will behave in a highly selfishly self-interested and socially corrosive manner. Such a mentally unwell society may even go to the extreme of punishing the expression of fulfilling moral behaviours and real world reality-based value identifications. In a socially insufficient society, morality is an empty term with no empirical referent.

What matters: pleasure (vs. suffering) matters; empathy (vs. psychopathy) matters; thriving (vs. trauma) matters; fulfillment of needs matters; living within the regulated limits of nature matters. Even if can't say precisely how much each matters, what do agree on might be sufficient for at least the maintenance of a stable and socially fulfilled environment.

### 1.1.3.9 The naturalistic view of morality

The naturalistic view of morality is that human beings are just animals, like every other animal, and animals have no moral obligations or moralizing relationships with (or to) one another. When a lion kills a zebra, it kills the zebra, but it does not "murder" the zebra. When a cat kills a rodent, plays with the carcass for a short while and then leaves it to decay without consuming it, then it is not said to have murdered the rodent and committed necrophilia - cats behave in this manner naturally and regularly. When a great white shark or dolphin forcibly copulates with a female, it forcibly copulates with her, but it does not "rape" her - for there is no moral dimension to these actions. Dolphins are known to regularly behave in this manner and even form "gangs" to do so. Such actions are neither correct nor incorrect, prohibited nor obligatory. These organisms have a different nature, a different 'need space' as well as a different 'decision space'. The fulfillment of their conscious organisms should not be confused with that which determines the fulfillment of the human organism. Moral behavior is contextual to the organism to which the term is being applied, in context.

Certainly, there are perceivable "horrors" in the natural world. The violently aggressive social arrangement and behavior of gorillas and baboons is just one example. Often times, however, these evolutionary "horrors" stem from an environment of scarcity. Such violence exists in species when conditions of scarcity persist and there is no intelligence to behave and create otherwise.

Healthy humans are capable of [at least] empathic distress as well as the realization of axiomatic values and cognitive reasoning, which lead to critical, analytical, and systematic thinking processes. Herein, formal reason represents the emergence of human knowledge and wisdom over base instinct and belief, which allows for a much larger decision space than any other known species on Earth. When humans act in a manner that

causes suffering in [at least] other humans, then a socially destabilizing environment is established, which puts the continuity of a community of humans at risk, and with modern technology it threatens the very continuity of the species and planet. And, it takes cognitive and social intelligence to arrive at this understanding. Violence, particularly at a young age, is a "bomb in the brain" of every individual who experiences it, and will only continue a cycle of insufficiency in the human species. Such a realization requires not only empathy (and 'sensitivity processing'), but intellectual comprehension and mindful behavior. It requires the reasoned non-participation and non-support of institutions that create and maintain violent environments.

## 1.2 Value is objective

There are, in essence, three schools of thought on the nature of value: the subjective, the intrinsic, and the objective. The following sections discuss value in each of these contexts [of value] and provide argumentation toward value as that which is objective.

### 1.2.1 Subjective value

**QUESTION:** Why believe when you can experience?

Subjective value is the idea that something is a value because it is chosen to be a value. Anything a valuer decides is a value is valuable. In the realm of subjective value there are no objective references, standards, or measures when it comes to decisions in a social or moral/ethical environment. "you" do whatever "you" want, and pursue whatever value "you" happen to want - whatever state of the world "you" desire. Everyone chooses their own values, and there is no possibility of objectively or commonly understanding other people's values. At a cross-social level this becomes "moral relativism" and leads to the negation of existent cause and effect relationships in the real world.

Subjective values come from the subject only and value is determined by the importance a human individual or collective group of individuals place on a "good idea" for the achievement of their desired subjective ends. Here, humans do not have common human needs (as that would be objective). To exist in a world of subjective value would mean that everyone, or every collective group, lives in their own personal universe—possibly a definition for being out-of-touch with reality.

Humans clearly value a wide range of objects, activities, goals, and pursuits. When asked what is valuable include things like, a nice day on the beach, enjoying the company of friends, nature and learning, food, transportation, relaxation, and good music. When itemized, the list of things that find valuable is nearly infinite. But, what thread (or pattern) runs through each item that makes it count as valuable? A subjective response is that they are valuable because they are subjectively desired or that they bring [relatively] subjective sensations of pleasure

and happiness. The rationalization is that humans want things and when they come to pass or are achieved, then value has been brought into the world for that person or collective. Value becomes reduced to the status of mere preferential desires and affections without relation to anything other than oneself.

When the concept of subjectivity is applied at the economic level of a society, then the concept of a 'monetary market' manifests, for it is the most efficient and effective form of societal organization for achieving subjective ends.

Subjective value is a monetary economist's view of value. Monetary economists maintain the belief that value is subjective—a valuing entity ascribes a subjective degree of importance, meaning, or worth to something. And, when economists talk about "subjective value" they are speaking very precisely about the way the price system works, which then turns into a translation issue between different monetary economic disciplines. Austrian economists, for example, state that subjective preferences and valuations give rise to "objective market prices". This is simply a translation problem and there is little actual objectivity here. To believe that objectivity can arise out of subjectivity is illogical. In other words, to state that "subjective valuations" lead to "objective market prices" is a fallacious contradiction.

When the economist says that value is subjective, this means that people have different tastes and preferences and that people value things differently. One person likes chocolate and another person prefers strawberry. Individuals have perceptual tastes for what is valuable (i.e., value perception). For the economist, the decision to sell an item is a value proposition and the decision to buy an item is a value perception and the difference between the two is the "value perception gap". So, the economist asks how much the chocolate lover is willing to pay for chocolate, possibly a lot more than the persons' whose preference is for strawberry. This is what economists mean when they talk about value being subjective. That different people value things at different levels and the way to know what something is worth is to say what it is worth via "price" to someone in "the market" - and this is how value is said to be created "objectively" [by Austrian economists]. Things are only worth something to a particular "market entity" that values it or prefers it and is willing to pay a particular price for it. Now, if that is true, this explains why real objective value (discussed at length later) is necessary. If it is true that all have different tastes and preferences [as identifiable patterns of preference], then an objective moral decision framework would appear useful for organizing the achievement of these desires when live together in a dynamic society.

For the economist, value does not afford a single uniform measure of preference, but a measure relative to each "valuer" - it is subjective and has no reference to the natural, phenomenological world. And, although values are ascribed to states of affairs, the ascription is attitudinal and not observational, subjective and not

objective. As a measure of preference, value is and must be contingent on preferences for its very existence. Hence, for subjectivists, value is a product of humans' affections. The order of explanation is from preference (or affective want) to value, not from value to preference. Monetary economists do not recognize objective human needs [along with not accounting for natural resources, which they refer to with perspicuity as "externalities"].

Subjective accounts of value (e.g., "subjective selection") fall prey to the problems of at least arbitrariness, preference manipulation, and value elitism. These are socially destabilizing concepts. In nature, subjective selection allows for to differentiate things because of how they affect , but it can become harmful and maladaptive under a wide-variety of conceptual influences. Essentially, divisionary thinking at a social level (e.g., racism, sexism, ...-ism) has a high probability of generating conflict and violence when encoded socially. can imagine a situation where a child's preferences are manipulated so that the child prefers a particular kind of hurtful lifestyle or detests certain people. are not born inherently knowing that a "Chinese", "White", "African", or "Indian" baby is any worse or better than the other. Instead, grow up reading statistics, hearing stories, accepting the beliefs of others, and witnessing hatred in order to conceive racism, for example. adapt to environment and conditions. As perceptive consciousness have the potential to discriminate, but discriminations can be artificial and false. Just the notion that an individual's preferences (as well as thoughts and actions toward self-preservation) can be contrived and manipulated clearly shows the implausibility of maintaining the claim that the sole standard of value, in fact, that which creates value, is the satisfaction of arbitrary preferential desires and subjective selection [in the market]. The entire market-based industry of 'advertising & marketing' exists to selectively manipulate preferences and desires. Advertising is designed to condition [and dominate] the mind by changing behavioral patterns.

It must be asked why anyone's mere arbitrary preferences count morally or at a social level? Since preferences can be arbitrary (and erroneous), and according to this view, value is intimately tied to arbitrary preferences, this arbitrariness will contaminate any subjective theory of value.

Subjective value does not lie in the accuracy of a conceptual organization in resolving problems and needs in the complex, real world. Even though, accurate organization, particularly at a conceptual level, is valuable for the cohesion and fulfillment of human needs in a social system. Instead, the market (and sometimes government) is said to appropriately organize this for everyone -- or some "invisible hand" somehow does it. This is clearly not the case. The invisible hand [of the market] is invisible because it was never there to begin with.

If are going to all live together in the face of many different tastes and preferences [patterned and

influenced as they are], then could, if so choose, maintain a transparent and commonly objective value set - an identifiable, relational standard (open and rationally chosen) - as is necessary for the continued functioning of every coordinated system. Therein, know what to expect from each other and how to treat each other (i.e., clarity in normative behaviours); everyone has access to the same accurate information, which can be commonly verified, and hence, objective. Might such a socially organized system provide a framework for social living amongst people with their variety of tastes and preferences?

From the 'subjective' point of view the issue is always about the subject (i.e., it is all about "me"), regardless of how limited that subject's point of view and awareness of the totality of a situation may be. From an objective point of view, the 'objective' the issue is always about the nesting of systems, regardless of any subject's individualistic perception.

Subjective value may be discussed in the negative: It is the belief that nothing can be good for an agent unless the agent has a resonant or appropriate attitude - desiring, preferring, endorsing towards this good. Such reasoning plays out in the subjective claim that a loving relationship is only good for if want it, which does not accord with the objective fact that humans have a bio-physiological need for loving connection, particularly at an early age. What is most logical is doing that which [at least] fulfills the common needs of everyone so that everyone remains healthy and stable.

### 1.2.1.1 Moral relativism signifies subjectivism

**NOTE:** To say that morality is arbitrary, is to remove the notion of human well-being from morality, and thus, make morality meaningless.

Moral relativism is the view that what is morally "right" or "wrong" depends on what someone thinks—it is subjectivist. To which, the claim that opinions vary substantially about right and wrong is usually added. This subjectivist perspective comes in two related forms:

1. **Subjectivism:** What is morally right or wrong for depends on what think is morally right or wrong (i.e., right or wrong is relative to the individual and socio-cultural context [to consciousness]). The "moral facts" may alter from person to person; there is something known as "subjective truth". What is true for "you" might not be true for "me".
2. **Conventionalism:** What is morally right or wrong depends on what the society (or culture) in question thinks (i.e., morality depends on the conventions of a society). The "moral facts" may alter from society to society and from culture to culture. Every society's culture is morally right because that is what they believe is right.

Herein, moral relativism is the belief (note: all "-isms"

are systems of belief) that moral standards are purely products of consciousness, either personal or collective. The relativism part crops up when people inevitably disagree with one another; and so, the subjectivists claim that humans can at most have "truth" relative to one person versus another, or relative to one group versus another. The salient factor missing from any form of moral subjectivism is a role for external reality, the real world in general and human nature in particular. Conversely, objectivism [at least] recognizes the factual existence of human nature and its crucial role in morality, and is therefore not subjectivist.

The idea of an "objective morality" exists in contrast to what is known as "moral relativism", which is the idea that what is moral is dependent on the subject or culture (as in, "cultural relativism"), which commits what is commonly known in logic as "the relativist fallacy", fully impeding an objective moral understanding of a culture. The relativist fallacy, also known as the subjectivist fallacy, is claiming that something is true for one person but not true for someone else.

Moral relativism fundamentally claims that moral standards are purely human inventions, created by either individual people or human societies. Therein, moral standards are not unchanging - they change throughout time and from society to society. And, moral standards are not universal - they do not necessarily apply universally to all human beings, and their application depends on human whim and preference. In consequence, moral relativism essentially negates the existence of common and objective human needs. Hence, "truth" (or more accurately, "justification") is relative to an individual, culture, or society. The underlying assertions are that all knowledge is biased, no common standard is legitimate, and all morality is subjective. Essentially, the subjectivist theory of morality (or ethics) is, strictly speaking, not a theory, but a negation of morality. And furthermore, it is a negation of reality, a negation not merely of humankind's existence, but of all existence.

Since cultures (or ways of life) are created directly to serve the people who create them, the question that might arise in an inquisitive mind is whether or not a given culture's social and economic organization functions to fulfill common human needs. That is, does the society have a viable framework within which its participants can flourish and lead fulfilling self-developing lives, and can the society so progress on a sustainable basis in a manner that satisfies the spectrum of known human needs. If a culture spawns and nurtures attitudes, beliefs, practices, values, perceptions, principles, and behavioral patterns that can be shown to hinder its development or effective (and efficient) functioning, then it can be said that such a cult[ure], as presently constituted, does not serve as an adequate moral framework for the fulfillment of the needs of its participants or "followers".

Cultural relativism and moral relativism deny the universality and objectivity of values, and hence, the existence of a common and universally fulfilling purpose [as human flourishing and fulfillment]. Instead, the

moral relativist's system of belief asserts that values are relative to particular cultures in the sense that values held by a particular society or culture are true and valid for that culture or society [and may not be valid for others]. Any culturally dominant conception of the good is as valid as any other, there being no single or common culture-neutral (or trans-cultural) standard by which the various "goods" or values can be measured and evaluated. Further, moral relativism is the negation of science as applied to social concern as it negates validity and reliability, which are the two main measures in science [by degree].

That which leads necessarily to moral relativism leads necessarily to a re-endorsement of the status quo. In other words, moral relativism is a non-adaptive system of belief.

In the moral relativist world-view every value becomes valid and probably acceptable. Conversely, for something to be objectively valid it must be valid to someone for a verifiably fulfilling reason - an identifiable relationship with natural need fulfillment must exist. Therein, objective values can be called "relational" because values are always values to someone for some purpose. Validity is [at least] a relational concept. Hence, the following question must be asked by an openly inquiring consciousness: "To what is an opinion, perspective, or value valid?" Is it valid to an authority's claim, to an individual consciousness, to a cultural context, or to a discoverable and objective reality [in context]? Clearly, many opinions, values, and perspectives about the organization of social and economic systems are invalid in their related alignment with human fulfillment and the existent reality of a situation (i.e., they have a delusional and non-existent relationship with nature).

An opinion is not a fact that anyone knows, although it often appears as something that the opinionated thinks everyone else should know. An "informed opinion" might involve a mixture of facts and presupposition, but it is not verifiably and reliably factual ... that is why it is called an opinion. Something that has truth in it shouldn't be mistaken for the truth. Holding an opinion is like stopping at a rest stop and not the destination. And herein, it is important to recognize that opinions can be manipulated and contrived. There is a common saying, "Skillful manipulation sways public opinion".

Opinions are regularly manufactured and manipulated. Commercial television programming, for example, is an applied tool for the mass transmission of a whole host of opinions. And, watching television is an extremely passive process that puts people in a passive neurological state (inducing an alpha hypnotic state) that makes them highly suggestible to others' opinions, ideas, and "suggestions" (or commands). The television [set] is hypnotic. Ideas that one may not notice consciously may still be absorbed by someone's subconscious, and they may be bypassing his or her 'critical factor' (or critical thought). When engaged, the critical factor accepts nothing without deeper inquiry. In particular, propagandistic entertainment media accustoms people

to tyranny and other reduced, conflict generating, and maladaptive associations, while suggesting their compliance (e.g., modern television programming cop dramas). Why do we think television programming is called "programming"? There are no questions in the [mainstream] media; there are only 'talking points'.

Essentially, moral relativism does not account for consequences and consequential relationships; and, it cuts itself off from the generative lifeground of natural existence. When the logic within the belief structure of moral relativism is philosophically argued out, it leads to someone having to stand back and say, "it is ok for another person to kill me, even if they have absolutely no pre-tense to do so," something that is not natural for a healthy human organism to do, and for which defense and restorative mechanisms are designed into the central functioning of the human organism. To say that all cultures are valid is to say that all acceptable behaviors in all cultures are valid. Then the admission must come that there exist a spectrum of cultures from psychopathically violent and tortuous to peaceful and compassionate. After which it must be admitted that all behavior is valid because all behavior, from the most highly fulfilling to the most unfulfilling, will be expressed along this spectrum. And, if all behavior is valid then killing or torturing another human for no reason other than say, retribution, is valid ... because all opinions at a social level are valid and all cultures are valid ... Or, maybe they aren't.

The relativist approach could be used to justify unlimited (illimitable) harm-inducing ideas and outright atrocities themselves. If a society is to ascribe any useful, functional meaning to the word "morality", then it must relate to the well-being of conscious creatures; and this is not a culturally relative notion (i.e., this isn't subjective). Moral relativism is dangerous in that it can essentially be used to justify a broad range of highly destructive and counterproductive behaviors, values, and social traditions under the guise that "it is right according to that culture". Or that it fits safely within the realm of "personal choice / opinion", and hence, cannot be scrutinized for its social consequences.

Notice how moral relativism could very easily lead to what is known as a "police state" where the mass public believes their leaders have a different moral context because of their roles [in governance] and authoritative positions, and they can therefore behave in a manner that no one else could or would because they aren't in this other person's position. Notice the lack of a common ground, an empirical referent, and the nature of existence. Notice how moral relativism paralyses the defense mechanism and allows corrosive thoughts to go unchecked and harmful behaviors to go unchallenged. It allows for the creep of concepts and behaviors that reduce freedom and impose tyranny.

There are people who are interested in pursuing the truth and not just accepting what is comforting and what is conformist. In the objective view of morality many of the old philosophical battles have been settled.

There has been a historical rift between rationalists and empiricists. For the rationalists, reason was what someone used in pursuit of the truth. Rationalists believe that trust in the existence of a relationship is just in your own mind, and your mind creates truth. A form of this belief is seen in the claim that "create your own reality". Empiricists, however, claimed that truth was found through verified observation (and consensus of observation). Eventually, a third belief came along and said, "can't trust either reason or consensus", and truth is whatever the authority says it is. Finally, an objective philosophy came along and said, "No, don't disregard empiricism and reason, embrace them both and use them together". The objective involves participation in the verification of that which may be experienced, in evidence, and in logical reasoning, and it is an example of the application of an "objective" philosophy.

From the perspective of a moral subjectivist, there isn't necessarily any truth beyond opinion or authority - subjectivity is the basis of moral relativism. Yet, truth is not contingent upon one's belief in it, nor is it altered by the words one chooses to describe it, nor even wounded if neglected. It is simply truth, and truth is a constant throughout time. It is an unchangeable pillar that can be masked or distorted, but in the end truth always remains. Discovering truth is a personal task [of discernment]. But this does not imply that it is different for each person. Only the form in which each of experiences truth changes; the content remains the same. In moral relativism, there is no discernment of truth, there is only [arbitrary] acceptance [of opinion and/or authority] cloaked as "truth".

Morality today, in early 21st century society, is generally thought of as culturally subjective. Subjectivity obscures facts about [at least] the physical world that impact well-being, and thus, blinds from thinking about moral questions in light of that which can be discovered and verified to exist, which is desperately needed. Without an underlying goal that orients toward social practices that strive to maximize well-being and flourishing there is no useful platform from which to think about such needed changes.

## 1.2.2 Intrinsic value

**NOTE:** *Some cultures are wrong about how to maximize well-being, and hence, they are wrong about their values [orienting them toward flourishing].*

The alternative to subjective is objective. Since subjective values come from the subject, then it is sometimes thought that objective values must come from the object. However, this is what "objectivists" call "intrinsic value". It means that the value is supposed to reside inside the valued object itself, for what it is, or as an end. If subjective value is dismissed, then one possibility is that the value isn't just own opinion, but it actually is an aspect of the object of value. For example, humans are [in part] water and consume water for life - they need and desire water.

Hence, water must have some value characteristic that can somehow be observed. Similarly, pandas eat bamboo, and therefore, the bamboo must have some value characteristic emanating from it, according to the intrinsic view of value. The idea of the intrinsic value [or the "inherent value"] of objects is considered "objective" because the value is out there, where anyone can see it. Note, this is similar to the Austrian monetary economists who claim that "objective market exchange value" exists because price exists. Except of course nobody can see it or explain how exactly knowledge of this value characteristic claimed as intrinsic to objects is acquired. The object or state is intrinsically valuable, and everyone just has to accept that "fact". The intrinsic theory initially escapes subjectivism, but it has the side-effect of being abstracted from any sense of the real and verifiable world, and hence, there is no evidence for accepting it as valid. It is circular reasoning without evidence or reference.

The belief that objects of any form, natural or conceptual, have intrinsic value is at best a crucial unsupported assumption, and at worst, is straightforwardly circular reasoning: ought to have moral regard for nature. Why? Because it has intrinsic value? But how do know it has intrinsic value? Because ought to have moral regard for it. A chain of values must end somewhere. Arguing for the intrinsic value of nature on the grounds that any other way of arriving at values will inadequately protect nature is illogically circular and will always be capable of being quickly argued against, and thus, will not achieve the protected caretaking of nature. If someone seeks to protect nature, then they must be open to another argument.

Intrinsic value (i.e., intrinsicism) is a rationalization. This means that an object can be valuable or not, "good" or "bad", without reference to who it is good or bad for, and without reference to the reason it is being claimed as good or bad. The idea of intrinsic value holds that value and "goodness" is inherent in certain things or actions as such, regardless of their context and consequences, regardless of any benefit or injury they may cause to the actors and subjects involved. It is a belief that divorces the concept of 'good' from beneficiaries, and the concept of 'value' from valuer and purpose - claiming that the good is good in, by, and of itself. The "good" is an intrinsic, inherent property of an object, state, or action. When value is intrinsic to some state, then certain organizations of matter are simply inherently good for no reason other than the belief that they are inherently good - which divorces the concept of a 'state' as an evidential characteristic of a referential system.

If a human believes that the good is intrinsic in certain objects, states, or actions, s/he may not hesitate to force others to perform them. If s/he believes that the human benefit or injury caused by such actions is of no significance, then s/he may regard a "sea of blood" as of no significance. If s/he believes that the "beneficiaries" of such actions are irrelevant (or interchangeable), then s/he may regard wholesale slaughter as a moral duty

in the service of a "higher" intrinsic good. The intrinsic theory holds that the good resides in some sort of reality independent of the conscious experience of a common existence whose properties are commonly discoverable and verifiably.

It must be noted that intrinsic values, in practice, act as subjective values. This is because there is no explicit means of determining what is or isn't a value, someone basically just has to guess ... or follow what other people say ... or follow what the authority says ... or whatever feel like today ... or whatever emotions are feeling in the moment. Intrinsic value allows one to rationalize their values while claiming the mantle of objectivity.

How do gain knowledge of an intrinsic value? How do compare two intrinsic values if a choice is to be made between them? If an object or state is intrinsically valuable, but have no way of gaining knowledge of it, then how do compare (i.e., ratio) between values. And, hence, are left with subjectivity. "You" simply think it "into creation"; it has such and such amount of value, and that's good enough. "You" make trade-offs by whatever end up feeling like or "intuiting". But, that is not "good enough" for organizing a society toward the fulfillment of human needs on a single planet with other living organisms that have their own discoverable needs and a commonly shared lifeground.

Although both subjective and intrinsic values claim to be values, they don't actually have a common measurement, because they don't have a common method of identification. If think animals have some intrinsic value in staying alive, how do compare that value to the human value of consuming their tissues for nourishment, having a fur coat for warmth, having a leather jacket for protection from the elements, etc.? Intrinsic values are essentially non-relational values. Relational values are valuable to a conscious organism for a reason other than momentary emotion. Intrinsic and subjective values cannot be compared based on a single cognitive standard, and thus, cannot exist within any real, existent living system. A standard is necessary for functional existence within a real system. Hence, with intrinsic values 're left with comparing them based on how much "you", and only "you", desire them. Since any kind of value can lead to an emotional desire, then that is the only standard left to compare them by. And, if it is not obvious already, it means that by accepting intrinsic values, "you" need to treat everything as subjectively valuable. Once someone accepts a value that has no relational purpose, s/he can't trace the value to its consequential impact(s) in the real world. Instead, s/he is forced to choose the only thing that intrinsic values have in common, and that's his or her level of emotional desire toward the value. This is why intrinsic and subjective values are so appealing to those who are driven by their emotions without the inclusion of intellectual discernment and cognitive fortitude. Take note, mixing a little poison with your food leaves the whole thing poisonous.

A person who attempts to build a social organization

grounded on intrinsic value is in no better shape than a person who attempts to build a society on fiction or on authority.

Nature, as the natural regulations of discoverable reality, does not value "you" or value anything. If "you" walk out into a savannah without any local survival skills or situational awareness, a lion is likely to eat without any care or empathy for "you" whatsoever. "You" are prey to that lion. Nature is an evolutionary process and evolves [at least] predators and prey. It also evolves conscious organisms with a larger valuing decision space - organisms capable of higher cognition, empathy, and greater nervous system sensitivity to the environment (Read: "sensitivity processing"). Regardless, in nature, a human has no more intrinsic value than any other animal.

The fact that human neurophysiology allows for the human organisms' conscious experience of empathy is not a valid argument for the claimed existence of intrinsic values. It is a fact that humans have an evolved psychology and decision space, and that there is [at least] a neuroscientific explanation for empathy; but, there are no explanations for the belief in intrinsic value. Instead, value [actually] describes an existent [environmental] relationship, and intrinsic value is the absence of any such a relationship, because it is intrinsic (Read: internal only).

### 1.2.3 Objective value

**MAXIM:** *Admire those who seek the truth and question those who claim to have found it.*

Objectivity states that values are not properties that exist arbitrarily and in complete abstraction, nor can they be identified and measured coherently without conscious and interested beings becoming involved. Values have meaning to a valuer for an identifiable reason; they do not exist in the absence of a valuer [with a decision space]. Herein, value arises from the relational needs and consequential desires of conscious organisms who maintain a 'need space' and a 'decision space' in a phenomenologically regulated, scientifically discoverable universe.

Anything that maintains a decision space has the capacity to value, and a value is the logical and referential description of a valuable, existent relationship. The very process of valuing [on the part of consciousness] maintains the structural existence of a decision space for a valuing organism for focused intent toward a meaningful purpose (e.g., the fulfillment of real world needs). And, effects of actions in the real world are sensed before being fed back and integrated into the decision space such that its next iteration ( $\Delta T$ ) is more greatly in alignment with a known and fulfilling direction. Herein, effective valuing represents [the] adaptation [of consciousness] to existence.

The concept 'value' is not a primary; it presupposes an answer to the question: "of value to whom and for what?" It presupposes an entity capable of intent and

of acting to achieve a desire or goal in the presence of an alternative. Where no alternative exists, no goals and direction, and no values are possible - no decision space exists. A volcano is not callous when it wipes out a village of humans or burns trees and animals alive. It is not aware on any influentially recognizable level. A volcano does not hold any spite against either geography or conscious valuers if lava is diverted to some other location. A volcano does not appear to maintain a decision space.

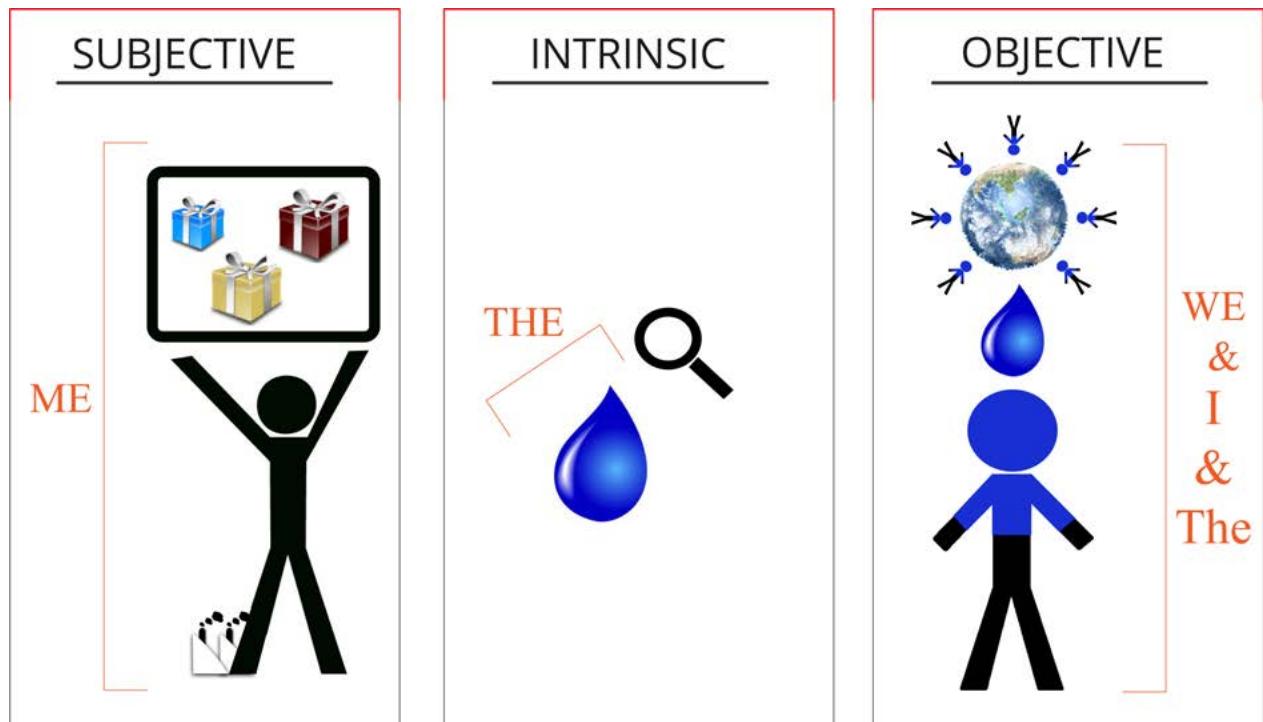
Objectivity does not postulate that value resides in objects or states, or is just a figment of imagination; it holds that there is an objectively identifiable relationship between the value (as that which is being valued) and the valuer (as a conscious organism or entity with a decision space and the desire to fulfill discoverable needs (needs that the organism may not even be consciously aware of). There exists an objective reason or rationale for the value of something, and value exists independently of human affective states. There are discoverable reasons and desires for action. Water, for example, is needed for a human's survival, and survival is a reason for collecting, drinking, and not polluting water. Objectivity provides a framework for understanding life through the logical fulfillment of discoverable needs as inherent to living organisms.

Each orientation toward that which is valued will answer *why* questions about social decisions in a different manner: the subjective orientation may

answer *why* questions by stating something along the lines of "because I want it to be that way"; the intrinsic orientation might answer *why* questions by stating something along the lines of "because that thing is ... [some quality some individual subjectively perceives it to have]"; and, the objective orientation might answer such questions by stating something along the lines of "there exists a discoverable relationship between that which is in environment and fulfillment, and therein, is a space for describing *how* might arrive at an answer to that *why* question.

When value is relational, it is also 'contextual'. Someone may like a glass of raw milk because it tastes good and has beneficial nutrients and micro-organisms, but someone else may be lactose-intolerant. Both persons have nutritional needs, which milk might or might not fulfill, and that relationship can be objectively determined (e.g., allergy testing, lactose-intolerance testing, skin observation post consumption, taste, quality/type of milk). The context under which the two persons are fulfilled by milk is different, even though both have a common need for 'nutrition'.

When operating with an objective value orientation the "good" is defined by those actions that increase the presence of need fulfillment and the self-directed adaptation of humanity. Therein, the "bad" is defined as those actions that diminish or violate fulfilling human relationships, prompted by the magnification and distortion of reactive human instincts [as finding ideals



**Figure 12.** Subjective, intrinsic, and objective values. Biocompatible hydration is necessary; it is a desired and shared relationship. Subjective value is all about giving gifts to oneself at the cost (or pollution) of others; intrinsic value is all about the finding of [ideal] value in objects; and objective value is about objectively discoverable relationships in the context of need, well-being, and a decision space.

in objects and giving gifts to oneself at others' expense]. Without knowing the difference between "good" and "bad" action (i.e., action in and out of alignment with need fulfillment), no individual can evolve self-actually.

Since value is relational it cannot be spoken of in an abstract, disembodied way. Value is always a value [to a living organism] for a specifically discovered or discoverable [terminal] reason. An objective discussion of values presupposes the conditions of a conscious entity with a decision space and a desired direction (or purpose), such as, the fulfillment of common needs.

Objective morality (or sometimes, "universal morality") is not contingent on culture or other subjective notions. Subjective notions are more about making pronouncements of what is right and wrong rather than describing a system for how human fulfillment and well-being might be optimally determined and verified.

No one likes to suffer, physically or emotionally. No one can claim to enjoy suffering since 'suffering' is by definition a state in which consciousness does not want to remain (i.e., a state of not wanting to be in the state that one is in). The word, and the experience itself, relate to the opposite of enjoyment. By definition, suffering is bad. Some people enjoy pain, but that is not suffering. If "you" are in pain and "you" enjoy it (or have chosen the state because "you" expect hormetic benefit), then "you" are not suffering. Since no one enjoys suffering by definition of the word, the implicit goal of a consciousness that accepts the conceptual definition of 'suffering', is to avoid it. If suffering could not be considered "bad", then the word "bad" is meaningless. If grant this, then a moral imperative surfaces: should avoid suffering, and hence, by reverse interpolation, should maximize well-being and flourishing. Since well-being is inextricably linked to facts about the physical world, such as how interact with the environment, what optimum nutrition means, social structure, and so forth, then how should behave can be logically deduced from these facts. And, this is how get ought from is, objectively.

If someone grants that the worst possible misery for everyone is bad, then a continuum could be established of rights and wrongs, that which is better and worse, and in which the peaks of a moral landscape correspond to the heights of well-being and the valleys correspond to the depths of misery. Therein, the worst possible suffering for everyone is the worst case scenario and embodies the deepest valley (or farthest of one side of the continuum), whereas the height of flourishing [in its emergent form] would be the highest peak (the farthest known point on the other side of the continuum), and where nearly an infinite number of scenarios exist in between.

The moment someone grants that the worst possible misery for everyone is the worst case scenario could imagine, and that morality has to do with well-being, then they must also admit there are [objectively] better and worse ways to proceed with respect to morality, which is of course contingent on the "laws of nature" and the method(s) applied to uncover them. If, as a society, are

to care about well-being (Read: if this is goal), then there are better and worse ways to attain it. If well-being is not goal, then the conversation is over and have no basis for speaking about a better world - look around, how many people in early 21st century society care about a better world and then act upon their care in a sensible manner. For , to have a constructive conversation about anything, on some level, have to have parallel goals (Read: a common direction).

The more humanity learns about itself, the more humanity learns that one's individual well-being is directly tied to everyone's well-being. The best way to maximize an individual's well-being is to work toward a society that facilitates everyone's well-being. If a society's purpose is to maximize well-being and facilitate all individuals in their development toward a higher potential, then there are right and wrong ways of behaving and of designing systems, particularly, socio-technical systems ... which impact the existence and persistence of fulfilling behaviors.

Objectively speaking, there are better and worse ways to structure a society to maximize human fulfillment and well-being. In other words, science [in context] can help to determine socio-economic arrangements that are better and worse for human flourishing, as well as for other beings in the habitat and the environment in general that all rely on for survival. For example, and in brief, know that a society with a greater the degree of income inequality will have a larger number of social problems. Also, it is clear that, in general, those of a higher social class become more indifferent with respect to the social well-being of others. A social system that alleviates or completely removes the basis for such disparities will be more conducive to enhancing well-being, versus a social system that is predicated on competition and consequently income inequality. These points are developed more fully elsewhere in this specification. It is also important to note here that what was said should not be taken to say that science has all the answers or that science should dictate all the minutia of individual choices, even though in principle, with enough time and information, science could [possibly] discover such truths. But, since are discussing all aspects of well-being it is safe to assume that a society that "grants" all of its inhabitants the highest degree of individual freedom [within the bounds of natural law and general sustainability protocols] would be one that maximized flourishing in this regard.

If a system causes gross social distortions, then someone cannot just take a syringe and inject morals into it (i.e., it is not possible to patchwork morality into a system not designed from a moral foundation). Herein, each individual must ask themselves, what is the structural goal of the socio-economic system I live within? For in truth, and as Stafford Beer is known to have said, "The purpose of a system is what it does." Look around, what is the result of the socio-economic system live within, and are "you" trying to patchwork it?

Herein, there is a difference between objective

morality and absolute morality. The former refers to a process of discovering what will enhance well-being, while the latter generally refers to pronouncements about what is always good and always bad and maintains no accounting for the complexity of a situation or inquiry into reality. Somewhat inappropriately, objective morality is sometimes known as "situational morality" because it seeks to account for the totality of the situation (or environment) in which a behavior occurred, which should not be taken to imply subjectivity.

Facts that relate to the well-being of conscious creatures are objective, though might not know them in the present moment. This is why a moral decision might involve the abstaining from decisioning until more information becomes available.

Could the relationship between factual reality and morality be represented as a function, or possibly, a query function?

1. If factual reality "F" were represented as a function  $F(M) \rightarrow M$  [from moral instruction to moral instruction]; then, for example, given the fact that burning people hurts them,  $F(\text{"suffering is bad"}) \rightarrow \text{"it's wrong to generate situations and structures that cause suffering by burning"}$ , then there may exist discoverable, "universal" moral attractors for given reality.
2. And, as a query function if factual reality "F" represents a function  $F(M) = ?$ ; then,  $F(\text{"suffering is bad"}) = \text{"what do verifiably know about reality that will facilitate well-being and life enjoyment without burning?"}$  This would, however, still not be able to motivate an agent that starts with an empty set of moral instructions (or, no traceable axiomatic values).

The objective theory of values is the only moral perspective incompatible with rule by force, authority, or coercion. If one knows that the "good", as the fulfillment of human needs, is objective (i.e., determined by the nature of reality) and to be discovered by humankind's mind, then one knows that an attempt to achieve the "good" by force is a monstrous contradiction that negates morality at its root by destroying humankind's capacity to discover and recognize through its intelligence the "correct" and most fulfilling action (i.e., the capacity to value). Herein, intelligence is the *response-ability*, *accessibility*, and *technical-ability* to modify matter intelligently [toward common fulfillment among a larger ecology]. Therein, an intelligent community might be said to be composed of a network of objectively "-able" interactions.

Force invalidates and paralyzes humankind's learning and cognition, its freely "-able" nature, demanding that social populations act against it. A value of which one is forced to accept at the price of surrendering one's mind, is not a value to anyone; the forcibly mindless can neither evaluate nor choose nor value - they have a null decision space for they are obliged to obey the

commands of others, they are forced. An attempt to achieve fulfillment by force is an attempt to provide a human with a picture gallery at the price of cutting out his or her eyes. Values cannot exist (cannot be valued) outside the full context of an organism's life, needs, goals, and verified knowledge.

Certain states of the world are beneficial to conscious organisms because they promote the fulfillment of the organism's needs, of which a healthy form of that organism desires fulfillment (and an informed individual organism recognizes and pursues). The fulfillment of needs is worthwhile to a conscious organism if the organism wants to survive and thrive, and [at least] for a healthy human, leads a meaningfully fulfilled life. States of the world are not intrinsically valuable themselves; they are valuable because of a rational desire to fulfill needs within the context of a decision space, need space, and a common real world environment; wherein, certain states of the world verifiably fulfill needs more meaningfully, more effectively and more efficiently than other states - more objectively.

Normal healthy growth involves the development of a natural valuing (or evaluating) process, which is manifest in the proper development of the human 'conscience' and a similarly aligned neurological structure. Human development must be approached systematically as cognitive development (or intelligence), moral development (or moral conscience), and neurological development (or neurophysiology) are all interconnected in a human organism. The development of 'conscience' depends on an awareness and understanding of human needs and their motivation in the behavior of all human organisms. The development of a rational conscience is dependent upon the right environmental conditions (i.e., states of the world) for its growth and the emergent actualization of its human potential. If environmental conditions are not conducive, then conscience either will not develop or not develop fully. And, each functional human individual is born with the biophysiological potential for development of a rational moral conscience.

The development of a rational conscience depends on favorable social conditions for its growth within an individual. Unfavorable environments [as environments that do not meet developmental human needs] are unlikely to manifest individuals with a mature conscience; instead, dogmatic belief and rigid thinking will pervade, and neurosis and psychosis will maintain a corrosive, unstable environment - an environment where values are decoupled from the objective existence of human needs in a real world with serious real world consequences.

It is unwise to accept another's claim to existence; it is wise to test and verify existence for oneself, and herein, a community will facilitate access to said verification (instead of thwarting access in order to maintain hierarchy). If truth is what matters, then humanity should be naturally skeptical of unsubstantiated claims. No one needs to believe anyone, for among community individuals do not need anyone to validate their

experiences for them.

Rational conscience is necessary for the actualization of an objective value system, and it is a function of systematic, scientific, and critical reasoning, which depends upon this "holistic" perception. Herein, 'sanity' is a function of a holistic perception and of accurate evaluations, an objective comprehension of that which is. Sanity maintains [a] recognition of the connections between existent identities and it eliminates distortions and dichotomous perceptions of the nature of reality and of living organisms in reality. The absence of rational conscience is irrational conscience (i.e., 'neurosis'). A "developed conscience" has achieved a holistic perception of reality - a function of sanity - necessary for correct evaluation of the real world environment and for the cooperative structuring of fulfilling environments. It eliminates distorted perceptions of reality and incorrect dichotomous perceptions of value. Metaphorically speaking, conscience is the "guardian of integrity", and integrity of action with reality does not exist without an objectively identified relationship to a common reality.

There are some forms of insanity which driven to an ultimate expression can become the new models of sanity. Generations habituate to the new normal. The next generation accepts a new baseline [even farther off a fulfillment-oriented direction]. Established interests build-in associations from early childhood and maintain those associations through systematic social engineering through life.

A rational conscience, which allows for the accurate perception of the objective social reality, is a function of correct perception of the self. A neurotic or psychotic mind has linked itself to an environment not really there: its responses are to fantasies and illusions; to dangers that are the projections of its own fears; to slights that are the projections of its own self-doubting. It is "psychotic". Inaccurate perceptions will maintain an individual in a state of being "unsane" and irrational, a state of persistently chosen insufficient fulfillment. Unsane people are stuck in a state of internalized frustration. The gap between their frustration and their fulfillment may be reduced [in part] through a re-engaging of their will and their curiosity to inquiry.

When a person says, "ought to do X," this invites the party being addressed to ask, "Why?" The only sensible answer to this "why?" question is, ultimately, an end-reason for intentional action that exists in the commonly sensed and verifiably experienced real world. Answers that invoke an appeal to authority and other fallacies, including specious arguments (i.e., sophistry) and neurotic / psychotic emotional exaggerations, are not valid responses to why questions for they do not accurately address an existent relationship in reality. When two rational consciences meet in discussion a 'philosophical argument' occurs. A 'philosophical argument' involves two or more parities objectively discussing a subject matter (Read: information) to remove all contradiction and approach ever greater approximations of a single, cohesive, real world [common] truth for all participants.

Fundamentally, the less chaos live in personally, the more are able to notice that other people are there.

In truth, the desire to fulfill human need and support (or caretake and steward) in the needs of other conscious creatures are the only end-reasons for intentional actions that actually exist, for they represent the refinement, growth, and development of consciousness. They are the only end-reasons for intentional action that actually play a role in explaining and predicting the behavior of intentional agents. Divine commands, intrinsic values, subjective whims, categorical imperatives, social contracts, committeees sitting behind a veil of ignorance, and the like, do not exist as the real object of any moral relationship to consciousness. Consequently, a useful answer to the question, "Why ought I to do X" will relate "doing X" to some desire or set of desires that fulfills a discoverable and commonly verifiable need.

**INSIGHT:** *Dogma limits thinking because of the "gravity" of belief.*

#### 1.2.4 Where "rights" are "values"

The more State-oriented term "rights" becomes "values" in community (essentially, they are synonyms in community). In the market-State, everyone has "equal right" as citizen (i.e., citizen rights). The same citizen rights of the market-State are part of the same effective the general rights set of all humans (to have autonomy of body, to access all that society has to offer equally with all others, and to have safety in and among society).

1. Liberty (autonomy "rights") agreements. Here, the value is that of freedom.
2. Equality (access distribution "rights") agreements. Here, the value is that of [restorative] justice.
3. Security (safety "rights") agreements. Here, the value is autonomy of body.
4. Efficiency (and effectiveness "rights") agreements. Here, the value is efficiency.

Note here that "rights" may also be seen as a dimension of the completion (cyclically) of a set of human needs. In this context, "rights" represents needs, of which the values are four orientational-type needs.

**NOTE:** *Rights are often declared in constitutions as social contracts.*

In the market-State, there are different layers of rights (law):

1. Civil rights (rights to protection from the State) and political rights (State-changeability). The rights of the citizen are the rights of participation in the political State.
2. Social rights (rights to specific public behaviors).
3. Market entity rights (rights to pretend to be a living human with needs and real-world requirements).

### 1.3 *Value is a component of a valuing organism's neurophysiological makeup*

**QUESTIONS:** How do stop recycling concepts that limit a life fulfilling orientation? How do become better human beings? How do become the best that can be? What actions objectively and verifiably lead toward human fulfillment, and what actions lead away from human fulfillment?

At one level, value is the expression of a desired state of reality, and at another level, it is an expression of an actual state of reality, that of the neurophysiological makeup of a valuing organism, the brain. If are going to discuss human well-being, are of necessity also discussing the human brain; because know that experience of the world and of ourselves within it is realized [at least in part] in the brain. Whatever can be known about the desire to fulfill the needs of organism must at some point translate into facts about brains and their interaction with the material world at large. Fundamentally, if humanity wants to understand itself, then it is not enough just to know about their cognitive adaptations to physical environments, it is also necessary to understand changes that occur in the brain.

Literally speaking, value is [at least] information that interfaces with (or within) brains. (Shomrat et al., 2013) When value is defined as a desired state of reality, the packet of information that is that desire becomes a piece of information inside the brain [structure] of the valuing entity. Even if abstract the word "desire" to mean what collectively understand will fulfill an individual or society, it all still logically reduces to observable facts comprised of the information stored inside [or passing through] homo sapiens' brains.

Desire itself is a functional neurological state. It [at least], and more is still to be known, describes how the brain is structured so as to relate input to intentional action given other brain states. With this in mind, it is important to recognize that neuroscience is a young scientific discipline. And, it is important to remember herein that not only does the brain entrain to its environment, but it is [in part] fulfilled by its environment (e.g., the nutrient content of consumed food feeds or damages the brain).

Though neuroscience is a young discipline, it does seem to support the thesis that intentional action is motivated by brain processes that at least roughly correspond to the properties are familiar with under the concepts of mental models and human need. Of particular importance is the progress that has been made in understanding how praise, condemnation, reward, and punishment work to strengthen some desires and weaken others, and may have the reverse of an intended effect.

situation in the world can be understood at many levels, from the level of the genome on up to the level

of economic systems and social arrangements. There are many levels to the human system. And, if are talking about human need, and the needs of all other organisms on this finite planet, then are by necessity [at least] talking about brains and the brains of these other organisms; because know that experience of the world and ourselves within it is realized to some degree in the brain, which renders embodied experience. Human values are at some point reducible to a concern about conscious experience and possible changes in the states of the human brain, which in turn affect behavior. Who doesn't desire a healthy neurophysiological state to support them in identifying and meeting their needs and improving their performance potential, and maintaining their happiness and sanity as they live an embodied life.

When admit that humankind is on a path toward understanding minds at the level of the brain in some important detail, then it must be admitted that humanity is going to understand many more of the life fulfilling qualities of ourselves in much greater detail. are going to understand "positive" social emotions [and pro-social motivations] like empathy and compassion, and are going to understand why some forms of communication actually inflict suffering in others and lower their potential to sustain a state of fulfillment. will also understand how social and economic organizations affect the makeup of brains, and insofar as begin to shine light on that are inevitably going to converge on that neurophysiological fact space. are going to enter the fact-space of human fulfillment and well-being at the level of neurophysiology.

Any scientific account of human values is one that places them squarely within the web of influences that link states of the world and states of the human brain to human well-being and fulfillment. Imagine that had a machine that could produce any possible brain state (this would be the ultimate virtual reality device, more or less like in the film "The Matrix", or what some individuals experience as 'lucid dreaming'). This machine would allow every human being to sample all available mental states. Ignoring the philosophical and scientific wrinkles here, it is likely that given an infinite amount of time and perfect recall would agree about a range of brain states that qualify as good (as in, "Wow, that was so great, I can't imagine anything better") and bad (as in, "I'd rather die than experience that again"). There might be controversy over specific states -- after all, some people do like some unusual things and others have traumatic childhoods that warp their perception of themselves and of reality -- but being healthy members of the same species with neurological similarities [relative to any other known organism], are likely to converge to remarkable degree. One individual might find that brain state X242358B is among their favourite, and someone else might prefer X979793L, but the fear that will radically diverge in judgments about what constitutes a state of well-being seems far-fetched. The possibility that one individual's hell [as a healthy human being] will be someone else's heaven, and vice versa, seems highly

unlikely. And yet, whatever divergence did occur must also depend on facts about the brains in question.

**INSIGHT:** *Entrainment means coming into similar alignment.*

## 2 What is a value system?

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A value system represents an orientational guidance system with the potential for effective and efficient decisioning to free humanity for its higher pursuits. A useful value system identifies systematically desirable conditions likely to generate persistent states of fulfillment and flourishing among the human population. As an information set, a value system represents the integrated understandings behind why some states of existence are likely to create environments where needs go unfulfilled and other states of existence are likely to generate a higher potential of fulfillment.

Values interrelate systematically in what is known as a *value system* (or *value set*). A collection of values into a value system represents a value priority system that all humans have - whether they acknowledge it or not. In someone's decision process, their value system commonly "blankets" all decisions -- as if all decisions are arrived at after passing through a conditional filter composed of their values. The Community, in part, uses values to coordinate and prioritize decisive action, and the Community's value system acts to orient socio-economic decisions in a rationally desired direction.

Besides providing cohesion and unity, value systems give a sense of consistent rationality and "rightness" to a social organization. In a community, a set of common values provide a common foundation for discussion, understanding, and progress. They provide reasoned and rational legitimacy for particular practices and usages, including the existence or non-existence of power structures within a given society.

An rational value system is an organized set of compatible, consistent, and congruent values held by an individual or group of individuals. This key understanding is important in creating a community that fulfills and supports the individual in his/her progression toward a higher potential -- some value systems involve incompatible and incongruent values.

Some values are mutually consistent whereas others tend to act to oppose one another. In other words, some values are compatible, and others are not, as they work (or exist) in a state of opposition to one another. Some values are psychologically compatible with each other, such that it is relatively easy to think about them at the same time, and to pursue commensurate behaviours simultaneously. Other clusters of values tend to be in psychological opposition to one another, such that most people find it relatively difficult to think about them at the same time, and difficult to simultaneously pursue behaviours that are commensurate with these "contradictory" values. Incompatible values are said to be psychologically contradictory. Understanding this is crucial to grasping the importance of values in how they influence behaviour and how the valuing of incompatible values has the potential of generating chronic states of cognitive contradiction in individuals and irrationality in their behavior.

Evidence from value studies strongly suggests that

the human value system is organized in such a manner that some values tend to be relatively consistent with each other, and thus, easy to pursue simultaneously; whereas other values tend to be in relative conflict, and thus, difficult to pursue at the same time. The extent of compatibility or conflict between values can be statistically represented in a 'circumplex model'. In scientific literature, many researchers aggregate values into circular maps (or circumplexes) that spatially identify the relationship between different values. Values that are found to be compatible are plotted adjacent to one another on the circumference of the circumplex (or within the circumplex), while antagonistic values are plotted opposite to one another. Values are placed near each other in the circumplex when the pursuit of one of the values facilitates success at the another value. (Grouzet, 2005; Schwartz, 1992; Kasser, 2012) For example, most people in early 21st century society experience the values of self-image and status as compatible, as buying an in-fashion handbag or automobile not only enhances one's [egoic] self-image, but also conveys greater status in a competitive materialist environment. Values are placed on opposite sides of the circumplex when the pursuit of one value interferes with another. For example, most people find it relatively difficult to pursue cooperative efforts while focused on hedonistic pleasures (i.e., it is difficult to work with others when one only recognizes one's own pleasure-oriented wants).

Studies have found that the activating or 'priming' (i.e., psychological value priming) of a specific value causes changes throughout the whole system of a person's values; in particular, it has the effect of activating compatible values simultaneously and suppressing opposing values. Hence, the integrated nature of a value system (as an information system) entails that some behaviours will tend to occur together, and others will tend not to occur at the same time or in close temporal proximity.

A variety of studies offer support for the idea that the human value system is organized in this fashion by showing that thinking about one set of values has predictable ripple effects on others. Maio (et al., 2009) found that the "activation" of particular values will tend to promote behaviour associated with these and other compatible values, and suppress behaviour associated with opposing values. Thinking about one value both bleeds over into compatible values and squelches conflicting values. For example, if a person thinks about the importance of financial success, then self-image and popularity will usually rise in priority (as such pursuits are compatible with the desire for financial success), whereas volunteering will decline in importance (as that aim generally conflicts with the desire to make more money). Hence, 'priming' particular values leads to 'bleed over', such that other compatible values (and associated behaviours) are also promoted, whereas opposing values (those on the opposite side of the circumplex) are suppressed. This effect leads to associations between behaviours that at first observation may appear to be

unrelated.

In an authoritarian social system those individuals with values that conflict with the authority's values are unlikely to have their values fulfilled, and are likely to be punished for the expression of their conflicting values. It is also true to state that some values contradict the actual fulfillment of human needs, and their expression regeneratively 'primes' an unstable personal and social environment.

**QUESTION:** *What values does society accentuate, and consequently, squelch?*

## 2.1 Value system congruence and flow

When values are recognized and in alignment with one another humans are more capable of entering the state of experience known as 'flow'. Many people have conflicting values, leading to contradictory thought and behavioral patterns, which cause them difficulty in entering a state of flow in their life. The very nature of 'commonality' involves the sharing of values oriented toward common needs.

Congruent values do not negate each other. Hence, they do not negate the fullest expression of an organism's higher potential. Every limiting and "negative" self-concept, contradictory orientation, and falsehood hampers and blocks creative and cooperative states of flow.

## 2.2 Value exchange and value encoding

In a community, similar values are what is first offered in exchange for connecting in a harmonious interrelationship with another individual. After which, there may be no need for material object exchange if the community's socio-economic access system is functioning sufficiently (i.e., sufficiently fulfilling individual's material needs). Herein, the idea of a 'community' exists in conceptual contrast to that of a 'market' (or trade-based) socio-economic system, where object exchange (e.g., currency, money, goods, service, resources, or "gifts") is mandatory for participation. Object exchange is not mandatory for participation in community. Participation in a community arises through similarity in individuals' value orientation. In a community, exchange comes in the form of social values, and not in the form of economic objects. If real or abstract objects are to be exchanged for one another, and these objects hold significant 'need-fulfillment value', particularly if they hold the value of life and death [as is the case with money, food, natural resources, and scientific knowledge], then the concept of 'ownership' must exist. And hence, the idea of 'property' is rendered with a whole host of complicated consequences. Alternatively, when exchange becomes about values, then the opportunity opens for a "network of value exchangers" (i.e., a community of individuals) to access [as opposed to exchange] common resources for everyone's fulfillment. This subject is covered in depth in

the Decision System specification.

Cooperation is an inherent property of a community, and it could be said that, "communities are systems of cooperation", or that, "a community is a system of cooperation". In a community individuals cooperate through the recognition (and sharing) of commensurate (or resonant) values. Resonant values are an indication of a similar orientational direction. Wherein, all cooperation toward a similar direction becomes mutually fulfilling. Hence, a community may be figuratively referred to as a "win-win" situation; as opposed to a market-based (or competitive-based) organization that establishes a "win-lose" environment.

Some organizational structures of society are constituted to generate behavioral patterns in individuals that are inimical to human fulfillment. People who are a part of these organizations adopt the perceptions, behaviors, and values that are a natural outgrowth of that form of organization. And, within systems of competition and ownership their exist systemic forces of the status quo that limit the formation of other states of organization, particularly that of a cooperative value [system] exchange, which may be more fulfilling.

The forces and mechanisms inherent in the social structure of a society will encode themselves (or be encoded) into the economic structure of the society, and both systems reciprocally effect the behaviors of individuals in the society, and are re-encoded therein. In other words, a society will encode its value system into its economic system, and the economic system re-encodes the results of its behavioral characteristics on people back into the social system. Metaphorically speaking, human beings create social systems and put "DNA" (or mental concepts, thought forms) into those systems. That DNA goes on to effect the other systems that form within the society (e.g., the economic system, future versions of the social system, telecommunications systems, etc.), as well as affecting the individuals in the society themselves. Hence, it would be wise to think of what kind of social and economic "DNA" would be most fulfilling to all of humankind, and then put that DNA in the social system; different DNA can have very different effects.

It is essential to recognize that there exist some social structures that will inherently breed inequality and other forms of social corrosion. There are some social organizations that are not favourably designed to fulfill human beings and bring out the best of human behavior and of pro-social motivation. And, other social organizations are designed in alignment with nature and for the facilitation of healthy humane living conditions.

## 2.3 Information value tracing

**QUESTION:** How do know until experience?

If a value system is to maintain a community's forward alignment with an intended direction, then each value must be traceable to the phenomenological world, and

each encoding of the value into the conceptual and material systems of which the community is composed must be tracked. If an objective value system is said to exist, then there must exist an information trace from the selection of a value as a rational and need-fulfilling understanding on through to the value's application in the decision process, which leads to the modification of a community's system(s) and the encoding of the value into the conceptual-material structure of the community. In other words, a logical and verifiable trace must exist between the selection of a value [in its ability to generate a state of need fulfillment] and its application to the design (or re-design) of the community's systems.

Herein, the injection of "disconnects", such as assumptions, beliefs, dogmas, false premises, and opinions, into a value system are likely to break this information trace, and by consequence the value system will no longer be capable of accurately orienting a community (or an individual) toward reliable and verifiable states of fulfillment. When said information trace is broken, then individuals in a society may become unable to, idiomatically speaking, "see the forest for (or through) the trees". When values become untraceable, then the root (or systemic) source of a problem in a society is likely to be obscured, for the information that would otherwise reveal the source of the problem remains obscured. Without the accurate and informed tracing of values individuals are likely to become unable to rationally orient themselves and their society toward the creation of systematically fulfilling environments - problems are unlikely be solved systematically and the real problems may likely not even be seen as problems. Therein, even though individuals can see the trees, their minds are not capable of grasping the existence of the trees as part of a forest - there is no information trace relating the trees to a forest of trees.

## 2.4 Belief [systems]

**NOTE:** In general, people who have beliefs think of their beliefs as truth; they don't actually see them as beliefs.

A 'belief' is faith or acceptance in the accuracy or validity of something without sufficient evidence. A belief may or may not accord with the facts and discovered regularities of natural, existent reality. A belief is not based on evidence and may be based on myth, tradition, custom, and opinion. In other words, no complete factual 'reference trace' exists for what a belief is describing; hence, a 'belief'. The term is a "float", disconnected in some manner from the ability to accurately coordinate and orient decisions in alignment with a factually fulfilling, need-based direction. Facts close the gap between what someone believes and what someone knows.

Believing something is real is not the same as experiencing something as real. There is a wise aphorism that may be applied here: Don't think that you are on the right track just because, it is a well-beaten path.

Beliefs are, by degree, out of alignment with verified reality. Therein, their misalignment from reality has the potential to generate an unpleasant emotional state (known as 'cognitive dissonance') in those who attach themselves to (or persist in maintaining) a belief in the face of new and conflicting information. In other words, by attaching oneself to a belief when presented with new information consciousness experiences [cognitive] dissonance. 'Cognitive dissonance' occurs when two opposing viewpoints are accepted (or acceptable at some level) at the same time. Instead of inquiring more deeply and integrating more accurately in the presence of new and more accurate information, conscious may choose not to process through the dissonance it experiences, and instead, it may (or is likely to) attach itself to the belief. All beliefs hold the potential for entrapping consciousness in a state of artificial limitation (as attachment) - they are beliefs; they are not inquiries. If someone buys into (or is tied into) a belief, then they have likely limited their potential. Many people are so entrained, so convinced, so totally oriented in what they believe that they refuse to see the information coming in that contradicts their beliefs, which prevents their growth and adaptation. Consciousness grows in this intense environment through verified experience, not through belief. And yet, the experience of belief provides an opportunity for growth. Beliefs need challenging if re-orientation toward a greater state of potential is intended.

More importantly, beliefs are claims about reality and about how human beings should live within it, and consequently they lead to behaviors, orientations, and organizations (e.g., laws and institutions) that affect the lives of all people, whether they share these beliefs or not. Beliefs, like values, become encoded into social and economic structures [when they are not filtered out]. Therein, a diversity of beliefs in a society will inherently generate conflict because such diversity inevitably leads to different approaches to life, and hence, different orientations of social and economic arrangement away from human fulfillment [with different behavioral/cultural characteristics as a consequence].

When a socio-economic decision is made based upon a belief (or belief system), then the decision may be said to have been made based upon an 'ideology' (i.e., the recycling of the internal logic of a mental construct, incapacitating the ability of consciousness to shift its orientation to one of greater fulfillment through open and active inquiry). A belief [system] is a divisional ideological trapping - ideologies divide the world into "You" and "Them". When someone steps into an ideology, the ideology erases the real, empirical world around them; and often, *they won't even notice it*. If "you" believe [in] something, then everything seen will look like your belief due to the psychological tendency of what is known as 'confirmation bias' - the tendency of people to favor information [regardless of accuracy] that confirms their beliefs. Fundamentally, in every belief there is a presumption.

Beliefs form into systems known as 'belief systems'. In the English language, terms representing belief systems are usually labelled with the suffix "-ism". For example, racism is one of these -isms. Racism is a system of belief that race is a primary determinant of factors that cause the expression of particular behaviors and traits. Several other common -isms are: capitalism, socialism, communism, materialism, sexism, classism, objectivism, and etc. (Chrisomalis, 2020) An -ism is an idea set (or "ideology") thought up by someone else and not based in objective reality (i.e., without sufficient evidence and reference to the real, empirical world). Take note that any -ism is a potential way of exercising tyrannical control over the "-ists" (Read: the people who subscribe to the -ism). It is unwise to be an -ism's -ist. Also, be aware (and beware) that "-isms" follow agendas. Wherein, cultures subscribe to -isms.

As an acronym, the letters i.s.m. (ism) could stand for Individual Social Management. Individual social management systems are formed with greed and fear as their seed, and the fruit born into this world reflects humankind in its base animalistic state. It is the opposite of the use of reason and higher cognitive processes. To a degree, isms manage individuals at a social level by causing them to [emotionally] react to events and new information, rather than facilitate the space for integration and intelligent response.

*"Your beliefs limit your experience to that which fits within your worldview. Beliefs eliminate possibilities at worst and they warp interpretations at best."*

- Thomas Campbell (2020)

Holding a belief causes a loss of referential meaning, which makes it easier for individuals to feel that their private interpretations conform to a general social consensus. Private beliefs assimilate social beliefs and social beliefs assimilate private ones and all the while a subtle transformation takes place - a society-level decoupling from reality. There no longer exists a reference point for creating coherency and reducing the randomness of information, fulfillment de-structuring sets in at an individual and social level.

Beliefs are unconfirmed declarative statements about truth. Yet, to evolve, one must have their own experiences and verify existence for themselves. Every belief is either flawed or false, often picked and chosen for by others. Beliefs are unexamined weights and opinions that side-track consciousness away from greater knowledge, understanding, and wisdom, and ultimately, a higher potential of fulfillment. Beliefs are often given as "gifts" to be treasured and never opened or inspected. Instead of interpreting someone else's experiences, a self-directed individual might focus on having one's own experience and verifying existence for oneself - one might unwrap beliefs and check their veracity. There is no limit to understanding when consciousness inquires with an open and actively engaged mind.

People learn through their own experiences, not

through the adoption or acceptance of beliefs. Life is all about gaining the experiences need to become more evolved and wisely fulfilled human beings.

Beliefs inhibit the potential expression of consciousness. By believing put ourselves in a pre-structured box, are filtering source of awareness. And, one box is not better than another box. As a community have to let go of all boxes. *Let go of "your" boxes of belief.* Community is about having your own experiences and proving to yourself what is true and real, and the Community's design may facilitate or hinder that process.

Beliefs are also sometimes known as "memes" (or mental viruses). Some viruses are benign, and others, highly malignant. Principally, all values are not equal, and all beliefs are not equal [in the harm they cause or the disconnection they generate]. Ideas must be left in the form of working hypotheses open to critical inquiry and the approximation of truth found by the process of exploration and experimentation. Beliefs edit incoming perceptual awareness; they cut information out of [the integration of] awareness [through consciousness]. Sometimes what they cut is benign, other times it can cause great waves of dissonance and tragedy. Those who hold beliefs might be said to be "under a simulation" -- they are simulating the re-creation of a belief (as a limitation on potential), within a matrix of all potential [source]. In mixed words, beliefs are programs that initialize and run [by consciousness] to limit experience [of the identification of that which exists] for the apparent purpose of learning.

Does everyone have a "right" to believe, and therefore, act upon whatever they choose? Is everyone's personal interpretation of a situation or of information equal? Are all to respect everything others want to? If someone who maintains the belief that "you" should die for their cause were to put a gun to your head, is that acceptable to ? Are a bigot for not allowing them to express their freedom of belief? Obviously, values and beliefs are not equal. Some values work [in aligning society with a state of fulfillment] and other values do not. Some beliefs cause more harm and others less. More specifically, some values and beliefs represent a closer approximation to reality and human flourishing, and others do not. And, the farther a value/belief system is from reality the more cluttered with belief it becomes, and the more destructive it often becomes, not just to the individual, but to all individuals in all societies on this planet. Therein rests a distinct social imperative that is often ignored and feared. The taboo associated with challenging what others think and believe under the still convenient notion that all values, beliefs, and interpretations are equal is simply not tenable. All beliefs are beliefs, but not all beliefs are equal in their probability of dis-aligning a community from growth toward a higher potential. There is nowhere to hide from belief systems that pervade the "collective consciousness" and decouple it from reality. The question is, "How de-coupled, how many beliefs, does one filter the source of one's awareness with?"

A belief system is a box in which consciousness is

exploring, and fails to realize that there is an environment outside of the box; and yet, consciousness goes around the box thinking its "open minded". have to be on guard and examine ourselves all the time to make sure aren't just assuming another box. have to be able to ask the tough questions of ourselves, and ask them all the time. Hence, it must be considered that even the thinking processes described herein are flawed and are belief systems. don't have to throw out anchors [of belief] as explore. Ask yourself the tough questions. Don't accept anything anyone says, have your own experiences so can expand your own potential, and learning on this journey leads to a higher potential for ourselves and all others. People have a tendency to stay with what they are comfortable with, and this should be strongly avoided by designing a society that can adapt and re-orient as new experiential data becomes available to them.

There are conditioned beliefs that are operative at the level of "your" behavior and emotion, and about which "you" may have no recollection -- hypnosis is real. Beliefs inhibit the ability to make accurate evaluations based on what was known and what is now known. They are essentially, attachments (or "mental cages"). Hence, they inhibit all forms of social orientation in a whole ecologically navigable system, and their encoding into an economic system has a probably chaotic effect. In any given society a configuration of factors conspire to make people participate in a perpetually unfulfilling [belief] system. Some thought structures inhibit (vs. facilitate) development toward a higher potential at both the individual and social levels. Humans are going to explore and manipulate their environment, and community might exist to facilitate the integration of newly verified experience. Alternatively, tyrannical systems inhibit self-verification and seek to limit or otherwise prevent integration.

The problems with belief are several fold, and can arise when:

1. Some beliefs should not be questioned.
2. Someone can be certain of something yet still be mistaken.
3. It is bad when someone doubts their beliefs.
4. If all members of a society share a belief, they are justified to hold that belief (i.e., the belief is considered sufficiently true to act upon).
5. Believing something that is false doesn't feels just like believing something that is true.
6. Believing that feelings are a reliable way to discover truth.

Additional problems with belief include:

1. Believing something without evidence is admirable.
2. It is unimportant to know where something came from and what happens next.

3. Believing something that is false is okay if it gives you comfort.
4. Someone is justified in their beliefs until they are proven wrong.

The following are several ways of identifying and resolving belief in favor of knowledge:

1. I often investigate beliefs that do not match my own.
2. I am comfortable with saying: "I don't know".
3. It is beneficial to find out when I am wrong about something.
4. I look for more information before I accept something as true.
5. It is possible that some of my beliefs are not true.

An informed value system might replace a belief system in how decisions are optimally arrived at. Belief systems limit someone's ability to self-actualize and to understand others views. Belief systems do not provide actual[ized] nourishment or orientational capacity (i.e., they are non-functional toward navigability in a world space). Instead, they reduce function and limit fulfillment by limiting the conversion and integration of neutral [source] information into wisdom. Beliefs disconnect consciousness from its innate ability to navigate toward higher states of fulfillment in a common material reality. Therein, beliefs infect personalities, and once integrated they often magnify and distort reactive instincts, ultimately preventing self-reorientation. They reduce understandings and spawn illusions to which attach ourselves and create layer upon layer of fictitious webbing [and "rationalization"] between common selves. And, once integrated within the individual, though particularly into a socio-economic structure, they become difficult to purge. All belief systems are seriously flawed to the point of being false. are undermined by beliefs (i.e., potential is limited by beliefs).

At a social level belief systems are always shifting, always changing; they are temporary boxes around the awareness of consciousness. How can "you" be an effective explorer when "you" are looking through "rose coloured" glasses of belief, wherein perception is slanted [out of synchronization with highest potential of experience]. have to examine beliefs, which is not necessarily easy for identify with beliefs— become that which identify with. You must face facts, and that takes courage.

It is only when people feel free to think for themselves [using at least reason as a guide] that they are best capable of developing values that succeed in fulfilling human needs and serving common human interests. can choose to bury minds in beliefs or to explore and discover the truth for ourselves. Beliefs reduce a personality to conditioning and to instinctual reaction as opposed to facilitating self-directed evolution [of one's total self].

*"Belief is the wound that knowledge heals."*  
- The Telling, Ursula K. Le Guin

Beliefs often hinder personal evolution by misrepresenting the reality of true nature, capabilities, and aptitude (or fullest human potential). Most people are creatures of habit, not of exploration (i.e., they have lost the playful and exploratory mindset observed in non-drugged and healthy children), and remain attached to their physical self-concept and limits regardless of evidence before their very eyes. Few people stop to consider that their library of cherished beliefs are not their own. They live and die within the narrow confines of the established thoughts and conclusions created by the minds and patterning of others. Most take their lifetime of programming for granted as a normal part of their socialization process. Even the clothes they wear, the style of their hair, and the types of food they eat are created by others.

Fear and belief are both a form of bias. Someone who enters a situation or life experience with either will not end up with truth, but a biased perception of the experience. In order to experience the truth of reality, all of those things that would metaphorically "color your glasses" must be dismantled and stripped away - they lead to false interpretations of existence. It is therefore important to meet reality with no preconceived notions and no expectations (i.e., mindful openness and active observation) in order to remain in synchronization with reality. Many of the fears and beliefs that people have, they don't even realize as fears and beliefs, which makes them particularly tricky to overcome and to purge - they are just accepted as a part of the way things are. In many ways culture is the propagation of beliefs and fears about reality, about situations and behaviors that "should be feared because they are punishable".

Culture is often conditioned without any question or inquiry, without the accepting party ever knowing that they have accepted a [limited] conditioning program. What worries "you", causes "you" anxiety, and causes "you" to wish for another experience? A "superficial" intellect covers (or masks) the fears for the self-protection of the belief-established identity (the "false[ly aligned] personality"); and although it appears to be providing a service toward continued functioning in an aberrant culture, it actually gets in the way and hinders the self-development of the individuated consciousness [in continuously integrating reality as it is and not as s/he would like it to be]. Most people in early 21st century society make most of their decisions and most of their choices based on their fears and beliefs, and often, that is what a culture expects - if don't behave in an approved manner, or maintain beliefs that are accepted in your culture, then there is something wrong with "you", and "you" might be outcast and shamed as a non-conformer [to the social beliefs].

*"Belief means not wanting to know what is true."*  
- Friedrich Nietzsche

Every unconfirmed idea, opinionated limitation, and belief is a potential mind trap hindering personal and social development. From this moment take notice of the many external forces that are attempting to influence "your" state of consciousness. Any thought or idea that contains a form of limitation, fear-based manipulation, or imperative without evidence is a mind trap. Generation after generation of physical and psychological indoctrination has had an enormous impact; for many minds are filled and interwoven with thousands of assumptions that create limits, institutions, and the invisible (and sometimes very physical) walls experience in life. You carry beliefs with, and figuratively cloister and quite literally box ourselves in with them. The only way to "battle" beliefs is to make them obsolete in the realm of objective reality; whereby they can no longer be used as weapons against individuals. Only those who inquire are ready to learn their way forward, and only those with an actively open mind resonate with the potential of higher fulfillment.

One of the greatest fears that people in early 21st century society have is that of openness - not being absolute with everything. When people are in a situation where there is a state of flux, either in what is happening to them and around them, or in their perceptual awareness (e.g., new information or entheogenic loss of ego), they tend to get uneasy. And therein, they try to solidify the flux into an "absolute" in order to feel safe and comfortable. But, the solidification prevents connection with the emergent flow of information -- dropping out of synchronization with [the] unifying [iteration of] reality. In general, this de-synchronization [program] is a "schooled" idea. It is a viral program whose mechanism of replication is structural punishment and reward (i.e., authority; e.g., schooling). To overcome it one must step into more accurate alignment with their own power and have their own experiences initiated from their own conscious inquiry. Do not accept the beliefs (and "baggage") of others. Every limiting and negative self-concept, every belief and falsehood, hampers and blocks out creative flow. And therein, cooperative flow is reduced or nullified.

*"Rather than being your thoughts and emotions, be the awareness behind them[, which prevents absolute fixation]."*

- Eckhart Tolle

A belief is a claim to knowledge that has not yet been openly examined by at least the individual or group making the claim. In a sense, beliefs are just misleading place-holders for wisdom and knowledge, which can quite easily become influential programs that run continuously in the background. In truth, can verify reality for ourselves. One could go so far as to say that beliefs have their own gravity that sucks self-development into a void of stagnation.

When someone has trust in a belief, they essentially have "hope and faith" that the claim they are making is true. Faith [or intrinsicism] is a belief in something

without verifiable evidence; including a claimed way to knowledge without empirical reasoning, or a belief in something without reason and verifiable evidence. Faith is experienced as a need to belong with a counter-impulse based on cognitive dissonance. Faith, by definition, negates logic and negates the examination of evidence prior to the arrival at a conclusion. And, since faith is belief without evidence it is contradictory to the entire process of understanding itself. People have faith when they don't have knowledge, and people with faith are likely to lack understanding. Faith is a state of persistent disconnection. It is almost an admittance of disconnection, a sacrifice of reason. And yet, faith grounded in forgiveness is meaningful.

Most of what individuals in the early 21st century think they know about community is faith-based and not evidence-based; it is not based in evidence for human fulfillment, but based in "faith in the institution". And, there are many forms of institution. Flawed identities are likely to group themselves with other flawed identities (i.e., self-limiting concepts). Wherein, faith becomes worship and sacrifice, and doctrine becomes punishment and duty. Do not confuse the certainty of the messenger with the validity of the message. Sometimes beliefs are created to make feel better about anxiety at not knowing something. Hence, among community, live gracefully with uncertainty, with a recognition that are in a learning environment with feedback.

In some ways faith really operates as: the permission give another to believe things strongly without evidence. Beliefs eventually become operant in emotion and behavior. People think their beliefs are private, but the moment they inform (or are otherwise relevant to) a believer's behavior, then they can't help but impact the structuring of social interrelationships [through probability ripples]. And therein, they inform social behavior in so far as "you" believe in them. Yet, in community, there is no such entity to give permission whether to believe or not to believe, which is not the state of community, but the State of fascism. Among fulfilled communities, ideas that exist without evidence are simply transparent as such, and they are withheld from integration into their community's decision system until they are verified to be otherwise. Faith would have them integrated and fully operant at a socio-economic level without sufficient evidence, which is a extremely dangerous position. Quite possibly it might be a good deal wiser to inquire, verify, and then encode. Things tend to become a little confused in the head when there is only faithful re-verification going on, and very little inquiry.

When the statement, "hope and faith" is considered at any deep intellectual level its superficiality is quickly uncovered and it is seen as has no meaning beyond the negation of the concepts of reason, evidence, evaluation, experience, validity, inquiry, feedback, and logical calculation. In other words, it is a nonsense mantra. To "trust a belief" is to have "hope and faith" in nothing of real value. They are sayings that have no actual

meaning, and in fact, remove a degree of intelligence from the user of the saying. Authoritarian institutions, in particular, depend on being able to appeal to faith as a basis for knowledge of ultimate reality -- when in fact it conveys no such knowledge and only seeks to further disassociate the adopter from reality. The most unfulfilling of structures with the worst of intentions can be hidden in plain sight when buttressed by the emotional appeal of hope and the belief in the possibility of winning.

Those with hope or faith tend to become blind (or may already be blinded) to the realities around them. Hence, for those who feel that charity is the way to spiritual perfection and happiness it may be wise to reconsider all three supposed virtues - those of hope, faith, and charity. In some systems of belief, these "virtues" have fully usurped human needs, human fulfillment, and systematic solutions to real problems. They have become pacifiers - generators of passivity. In truth, it may be most wise to re-evaluate any term lumped in with "hope" or "faith", such as "Hope & Change". Hope and faith and change and similar de-contextualized or meaningless terms are empty rhetoric, useful for propaganda, seductive suggestion, hypnotic suggestion, power acquisition, and conversational hypnosis (or "sophisticated enchantment"). Such propaganda can confuses otherwise highly intelligent people. Propaganda is a tool, often employed by those in power, as an approach toward preserving their power or gaining power. And yet, hope can be a vehicle for a less "negative" perception-outlook, which is stress reducing and healthy.

When there are poor people there is a need to give charity to them. When society is depraved, then charity becomes important for: (1) needed generosity; (2) demonstrated generosity (as social perception/social manipulation); and (3) a tax credit; but, when society is fulfilling from the outset, then "what is the meaning of charity?" In some ways it could be said that the very idea of "charity" has no meaning in a society designed around the common fulfillment of the individual. In the early 21st century, "charity" is either a tax break from authority or the expression of a systematic issue with society. If the system was truly working for humanity, why would there be [a need for] "charity"? A community-type society is designed to resolve issues with fulfillment so that "charity" is unnecessary. In a fully functioning society there would be no role for charity [which isn't to say that there wouldn't be contribution].

In a society that is broken and harms a social or economic "class" of individuals, then charity is important, but not sufficient [as a condition] for re-orienting the system of society toward one that is fulfilling and where charity is not just unnecessary, but without meaning. Often, in early 21st century society, those organizations that do the greatest harm are the ones that to their greatest extent publicize their own charity -- with their hand in the front they give, while the hand at the back takes. Let be clear, charity is not the redesign

of the system toward strategic benefit and greater disambiguation. The end of poverty requires the end of violence-orienting (and structurally violent) beliefs.

The state of being "open mind" (or "actively open mind") solely means that "you" are open to all possibility. It doesn't mean "you" are going to believe everything or anything; instead, "you" question and inquire, "you" critically engage with new information and seek its most accurate integration, "you" do not simply dismiss with reflex action. If "you" can give a name to what "you" believe, then "you" are in a mental box. If "you" had a truly active and open mind, and were in full access of your innate intelligence [to remove contradiction and fulfill common needs], then would not have a name to give to what "you" believe for "you" do not believe anything. In community, thought might convey information, but it is never "stuck in a box" or "stuck in stone".

An "active brain/mind" is a brain that is making connections and relationships [between variables] (i.e., thinking systematically and integrating verified experience). An "inactive mind" could be said to be a "disconnecting mind".

A belief is certainty in the existence of something based on faith that may or may not accord with the facts of reality. Might there not always be more to know? Any form of faith, because it is a surrender of reason in favor of faith, is a tremendous intensifier of all things that are divisive, rather than inclusive. Rather than have a belief system, one might have an informed and verified sense of perception and conception, of how things are up until now. Truth is unsuppressed by belief and faith, which are habituating and irrational. And yet, belief in the limitless creative potential of the self is meaningful.

Sometimes people hold core beliefs that are highly integrated with and very strongly engaged in a person's personality. When these people are presented with logic and evidence against that which they believe they often cannot consider or accept it, and a feeling of great discomfort is experienced (Read: cognitive dissonance), which engages and erects [irrational] defensiveness. Because it is so important to them to protect the core belief, they will rationalize, ignore, attack, and deny anything that doesn't fit in with the core belief. In defence, there is the potential of reacting with extreme emotional energy, with anger. And when become angry, then become indignant, become offended, want to ridicule the messenger, want to pathologize the messenger, want to censor the messenger, and possibly, may even want to hurt the messenger.

What is common to the experience of cognitive dissonance is the emotion of fear: people are afraid of being ostracised, alienated, and shunned; they are afraid of their lives being inconvenienced; they are afraid of being confused, of psychological deterioration; they are afraid of feeling helpless and vulnerable; they are afraid of making mistakes; and, most of all, they are afraid that they won't be able to handle the feelings that are coming up. None of want to feel helpless and vulnerable, but in truth, at some level, can all accept ourselves.

Specifically, cognitive dissonance is the mental conflict, experienced as discomfort and mental stress, that occurs when beliefs, ideals, values, or assumptions are contradicted by new information. In other words, information doesn't don't match up with a reality capable of being understood more accurately in another way (i.e., they don't inquire more deeply into new evidence that works against a held belief). The concept[ual theory] of 'cognitive dissonance' was defined and became widely distributed in the 1950s. As a concept, 'cognitive dissonance' is intended to describe the phenomena that when "most people" are confronted with new information they seek to preserve their current understanding of the world by rejecting, explaining away, avoiding the new information, or by convincing themselves that no conflict really exists. When the protection of a belief as [egoic] self-concept (or self-identification overlays inquiry into greater truth, then the ego is likely to rationalize (as in rationalization), ignore (as in ignorance), and even deny (as in denialism) anything that doesn't fit with that core belief—it clings to that which remains comfortable, yet contradictory. Cognitive dissonance is a possible factor in explanation for "defensive" attitude (and emotional) change [by psychologists] when confronted with new information. Further, when people are in a state of dissonance, when their beliefs or values don't match up with their behavior or experiences, there is a likelihood that they will adjust those beliefs or values, or even adjust their perception of reality in order to achieve consonance. Many people will actively avoid situations or information that might challenge their beliefs and values in order to avoid the feeling of dissonance. One of the ways can reduce the likelihood of cognitive dissonance is to never take inconsistencies personally, and to use them as a platform for further inquiry.

The more someone has invested emotionally or financially or in any other given sense in a belief the more cognitive dissonance s/he will likely try to bear before admitting in the face of evidence to the contrary that the belief is not "sound" and doesn't accurately reflect what goes on in the world. People will try to defend their beliefs in the face of evidence until they can no longer do so, but it is stressful; the more cognitive dissonance builds up and the more the world refuses to behave the way they believe it ought to behave the more psychological stress builds up and the more mental illness/emotional/psychological problems tend to arise out of that, which can give rise to psychotic behavior. In community, must always be open and able (i.e., have the space) to discuss the mismatch between belief and experience.

Having no beliefs is not a belief, it is a "fresh" and open mind; an empty cup; a mind not attached to a story, narrative, or past moments; a mind streaming consciousness. All belief limits the further acquisition of knowledge. Once someone is insulated in belief, and thus, isolated in awareness, they cannot orient accurately [by degree]; and since they are then out of alignment with their integral nature they are potentially a more supple victim for further programming.

How much nonsense are "you" comfortable with? How much nonsense have "you" cut through to see the truth (because there is a lot of nonsense in a competitive socio-economic system that generates "marketed" nonsense so that people can continue to "make a living"? One might say that a complex socio-competitive market on the scale of early 21st century society is almost complete nonsense, and without a comprehensive re-evaluation of one's understandings and thinking processes one is likely to be "filled to the brim", of their metaphorical cup, with nonsense.

*"Never be diverted from the truth by what you believe to be true."*

- adapted from Bertrand Russell

Herein, it is important to note that the usage of the term "open mind" is not meant to call either for perpetual skepticism or for letting one's brains drop out (i.e., for holding no firm convictions and granting plausibility to anything). A "closed mind" is usually taken to mean the attitude of someone impervious to ideas, arguments, facts, and logic—someone who clings stubbornly to some mixture of unwarranted assumptions, fashionable catch phrases, tribal prejudices, and emotional attachments. Yet, the term "closed" may not be an accurate description for such a mind. A "passive" mind might be a more accurate description. It is a "passive" mind that has dispensed with (or never acquired) the practice of inquiring and critically thinking, and feels threatened by any request to consider anything novel.

What objectivity and the study of philosophy require is an actively open mind - a mind open to possibility and eagerly willing to investigate ideas and examine them critically - an exploratory mind. An active mind does not grant equal status to truth and falsehood; it does not remain floating forever in a stagnant vacuum of disinterest, uncertainty, and ambiguity; by assuming the responsibility of becoming informed and experiencing that which is, it reaches firm, and yet, tentative understandings. Since it is able to verify its convictions, an active mind achieves certainty - a certainty untainted by spots of blind faith, evasion, and fear. In community, don't believe in anything, have "your" own experiences (a.k.a. the "dis-belief principle").

Modern human beings rarely think for themselves; they find it too uncomfortable. For the most part, members of species simply repeat what they are told and become upset if they are exposed to any different view. Self-awareness is really the enemy of sanity in early 21st century society, for once hear the screaming, the echo never stops. The result of this ignorance and reinforced social conformity is the generation of rampant child abuse and global warfare. Other animals fight for territory or food; but, uniquely in the animal kingdom, human beings fight for their beliefs. In the early 21st century, they fight for beliefs more than fight for food or water.

The reason for this is [in part] that thoughts guide behavior, which has evolutionary importance among

human beings [toward the fulfillment of needs]. But, at a time when behaviors and actions may well lead to extinction there might be no reason to really assume humans assimilated into early 21st century society have any awareness of this at all. How all see nature, or don't see it, is perception of own reality that was given to by family, network, close friends and environment. Without self-awareness there is likely to co-exist self-destruction.

**NOTE:** *If someone's sense of the possible has been suppressed or diluted, it means that anything that is actually happening outside of their sense of the possible is by reflex action dismissed as crazy or impossible.*

#### 2.4.1 Sensory gating

Once a meme (or, mental virus software program) is absorbed, then it begins to alter an individual's 'sensory gating' and affects all subsequent behavior. Most people never think about their own mental software programs until something forces them to. Herein, 'sensory gating' describes the neurological process of filtering out redundant or unnecessary stimuli in the brain from all possible environmental stimuli. (Cromwell, 2008; Freedman, 1987) A gate is a filter (i.e., an aperture that channels information). Once a mentally constructed limitation is accepted and integrated (i.e., once the mind has constructed and closed a "mental gate"), then that which can be perceived of the world around becomes artificially limited, until such time as an event occurs that opens the gating channel(s) or otherwise shifts the gating system, and the individual has an epiphany or insight.

Fundamentally, being confined to a single or limited viewpoint or other modality, habituated to it by school or an environment, is tremendously debilitating. Long-term training in one perspective creates a long-term template that automatically gates incoming sensory data; wherein, it becomes increasingly more difficult with age to alter the settings due to a bio-physiological reduction in neuroplasticity.

In truth, human perceptual capacities are flexible, fluid, and multi-dimensional; in other words, we can perceive multiple perspectives, and change our own perspective whenever it benefits us to do so. However, "gating parameters tend to set themselves as time progresses, and all organisms tend to habituate to certain ranges of sensory intake and response to environmental perturbations." This habituation can and does limit what and how we perceive, and how resilient and creative we are in the face of adversity.

In early 21st century society, people get a template that keeps them from orienting toward a more fulfilling set of common meanings (i.e., those that create community), and they often become focused instead on surface detail (and pseudo-satisfaction).

#### 2.5 Integrity

**NOTE:** *Relying on "hope" is not a strategy. If there is no method for maintaining an oriented direction [in reality], then may always be struggling to remain in integrity with reality. The validity of values are increasingly quantifiable by an empirical benchmark, that of science, critical thought, and thinking in systems, which may be applied together to maintain an objective state of integrity.*

'Integrity' is a concept of consistency [as a principal characteristic] of actions, values, methods, measures, principles, expectations, and outcomes. In morality, 'integrity' is regarded as the honesty and truthfulness (or accuracy) of one's actions [with verified reality and human flourishing]. 'Integrity' can be regarded as the opposite of hypocrisy in that integrity regards internal consistency as a useful quality, and suggests that parties holding apparently conflicting values should account for the discrepancy through scientific discovery and the removal of contradiction (e.g., critical thinking and philosophic argumentation).

The word 'integrity' stems from the Latin word 'integer', which meaning wholeness, soundness, or completeness (and it has a quantitative nuance to it). Therein, integrity is the inner sense of wholeness deriving from qualities such as honesty and the consistency of behavior with unbiased [quantitative] evidence. As such, one may assess that others "have integrity" to the extent that they act according to the emergent values, understandings, and principles they claim to hold. Integrity does not involve loyalty to one's subjective whims, but of behaviors reflective of rational and emergent understanding (i.e., behavioral alignment with a claimed value or belief system).

Fundamentally, the results of differing value orientations can be compared and measured. The integrity of a value system is measurable [in part] by how well its [design] principles orient toward human fulfillment and align with [verifiably] discovered scientific causality/probability, based upon the integration of feedback and the self-initiated responses of individuals actualizing the specific value orientation.

In the context of *accountability*, integrity serves as a measure of willingness to adjust a value system to maintain or improve its consistency when an expected result appears incongruent with an observed outcome. Truly accountable individuals will evolve their understandings as more [accurate] information becomes available, and such individuals may be said to "have integrity". A value system's abstraction depth and range of applicable interactions may also function as significant factors in identifying the system's integrity through a congruence or lack of congruence with observed effects.

A value system may evolve over time while retaining integrity if those who espouse the values account for and resolve inconsistencies as more information is acquired.

**QUESTIONS:** If humanity wants to create a community of fulfilled individuals progressing toward their highest potential, then what must be perceive and what must be valued? If individuals do not [at least] perceive their needs and maintain an integral value system composed of those orientations that lead to a liberated, higher potential life, then what are they actually perceiving? What orientation is likely to promote human well-being and flourishing?

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# The Value System of a Community-Type Society

Travis A. Grant,

Affiliation contacts: [trvsgrant@gmail.com](mailto:trvsgrant@gmail.com)

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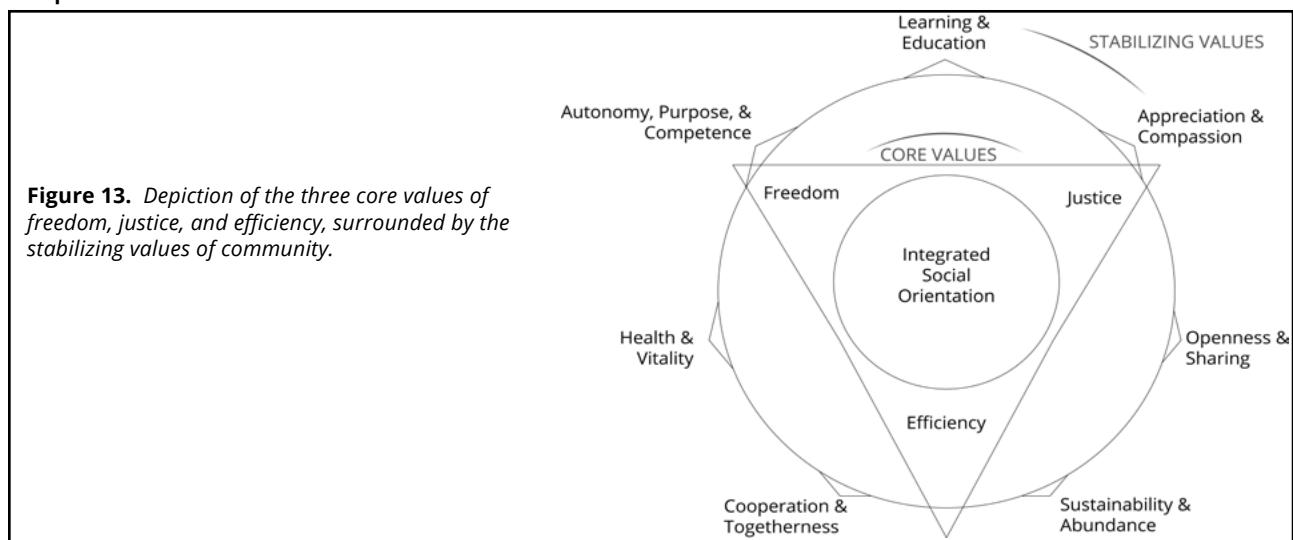
**Keywords:** value system, social value system, societal value system, orientation system, social orientations, socio-technical orientations, societal system state, societal attributes, societal properties, societal design properties

## Abstract

A value system is a conceptual reasoning system for translating a purpose [intended by consciousness] into action [through awareness] in a verifiable and a predictable/repeatable manner [as individual experience]. Every social organization has an orientation in an informational and spatial environment toward greater or lesser states of entropy. A social organization may use conceptions within its information system in order to stabilize its trajectory and orient intentionally toward a state goal/direction. A value system is the totality of that system which is orientationally useful at the conceptual level of society. The value system of a community type society has three core values that produce a stable platform for life, technical, and exploratory operations. It is upon this stable platform of three values (freedom, justice, and efficiency) that society may orient toward the its own evolved fulfillment. A set of stabilizing/compositional values ensure that the core remain a sustainable foundation for societal operation. Interrelated with the three

core values are a set of seven combinatorial stabilizing values. Together, this value set has the potential of scaling global human fulfillment without hurtful artifacts.

## Graphical Abstract



# 1 Introduction

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A value system is an important part of a social organization and society as a whole. It is a system shared by all individuals in the Community and inclusion into the Community is based, in part, on the value system that an individual maintains and embodies. A value system informs behaviors, relationships, and the intentionally organized systems of which a society is composed. The value system that each individual maintains is an essential factor in the coordinated orientation of decisions toward human fulfillment at both an individual and a societal level. A community-type society's values maintain an orientational alignment with its desired direction within a real world information system. Mental models and the values that encode them are at the foundation of how the world is viewed and acted upon to create the environment all individuals inhabit. Values significantly underlie actions taken toward goals.

A value system plays an important role in the human decision process, and actions taken in pursuit of values have personal, social, economic, and environmental consequences. Humans are [at least] social beings with instincts (as in, social instincts) for effective adaptation to changing social conditions. When social conditions are not aligned with human needs, then instability within individual human beings [the personality of] is naturally prone to arise. Therefore, "socialisation" without conflict depends upon the community's cultivation of a set of core human[e] values.

A set of formalized values enable a population to arrive at decisions together, while making actions transparent, consistent, and focused (i.e., "authentic"). Within a community-type society, the population realizes the importance of value system congruence between individuals and their general socio-economic environment. A congruently shared value system is necessary for progressive action toward a purpose at the individual level and the social level. Congruent environments reduce obstructions and hindrances, thus affording greater opportunity to express important values, to carry out plans, attain goals, and commonly shape the material world for everyone's fulfillment.

Social psychological researchers have noted the detrimental impact on well-being that arises when an individual's value system is incongruent with the system prevailing in their social environment. In other words, sometimes social values conflict with personal values to the psychological and physiological detriment of the person(s) with the socially conflicted values. (Sagiv et al., 2000)

Individuals are more likely to progress toward their highest potential when they can express and fulfill their values, and thus, achieve their goals - when they live in a society with a similar value system to their own, and in particular, an emergent value system that facilitates their adaptation to new potential states of fulfillment.

Generally, when most people in an environment share a set of value priorities, then normative behaviours

are more clearly communicated. In more fulfilled societies this appears as a general organization of similar concepts: mistakes occur and there is no need for punishment; explore the root cause(s) and allow for learning; follow through by designing another iteration [of the system] using more accurate information. In unfulfilled societies normative behaviors take the form of: established commands; interpretable principles, jurisdictional (territorial) laws, codified behavioral rules; and punishment.

In the context of a holistic social system with a similar means of arriving at decisions it becomes apparent that the distinction between what is "good" for one individual and what is "good" for other individuals has similarities. If two people really do share the same value system, direction, methodologies, and understandings, then of course what is good for one will tend to be good for another, since there is no longer any objective metaphysical distinction between the two individuals.

When individuals select a different set of core values (i.e., meta-values), then they will have oriented themselves in different directions. Therein, it will be difficult to maintain a stable social environment under such conditions, which are themselves a reflection of some sort of miscommunication or corruption of information between individuals and within their "collected/-ive" social information system. When a community arrives at decisions, highly valuing incompatible sets of values is likely to provoke internal conflict - this is an undesirable "state of affairs". Conflicting values create offended people. And, offended people are not the least of societies worries when it is composed of individuals with conflicting values. Thus, a community-type society seeks the elaboration of a set of common congruent values that empirically align actions with purpose, and with human fulfillment, in an emergently discoverable universe.

If a population can sustain the condition of emergence in its social structures and general approach, then it is always ready to adapt to that which better supports the mutual fulfillment of all of humanity, when knowledge of it becomes available. Emergence is in everyone and all things -- it is a universal life quality. It could be described as the result of a dynamic process of unfolding; but really, when individuals are learning and applying new information they are being emergent. To adapt is to be emergent. To change ones way to that which works better for everyone, regardless of how comfortable one is doing it the way it had been previously done. Societies either emerge, or fade away. The integrated application of the idea of emergence becomes a societal adaptation to what is possible. Humanity must have (and maintain) an emergent social approach so that it can be ready to apply what is known and technically possible in the present, in order to fulfill humanity's universal life needs.

**INSIGHT:** *The values in a society are only as useful as the socio-economic system that generates and reinforces the values.*

## 1.1 A stable social environment

A stable social environment is composed of self-directed individuals who choose to cooperate at a social level for the fulfillment of everyone. It is characteristically an environment that involves individual cooperation to sufficiently fulfill common human needs such that socially corrosive behaviors are unlikely to develop within individuals. Hence, conflict between individuals is either significantly reduced [and easily resolved] or is null, and will not significantly impact individual and social fulfillment. Such an environment embraces a set of core congruent values and a form of socio-economic organization that does not innately generate conflict and other socially corrosive thoughts and behaviors [by its very structure], either between individuals or within the individual himself/herself. Essentially, a stable society is regeneratively created through stable individuals who organize and cooperate in an efficient and effective manner [through similarity] toward the fulfillment of common need at a social level.

At one level, social stability is a choice, but at another level it is an actualized cognitive understanding that fulfillment is a common direction, and that it can be commonly oriented toward through the selection of a similarly directed value set. Without a clear comprehension of why cooperation is necessary, the motivation to cooperate (and share) will itself remain intermittent and unstable. Where social cooperation and self-directed fulfillment are normative, and socially corrosive behaviors are not manifest, then a more stable social environment may be said to exist.

The drive toward a personal higher potential is a characteristic of a stable, adaptable individual. Therein, individuals who are not working toward the betterment of themselves, and others, might be considered by some to be "unstable". A supportive and harmonious value environment allows for the healthy mental and emotional development of an individual from which a stable society more likely to manifest.

**INSIGHT:** *In community, individuals share value with value; they do not trade value for value (Read: the market perspective on value).*

## 1.2 Maladaptation and feedback aversion generates instability

Clearly, a social environment that is not adaptable is not stable in any meaningful respect. In maladaptive societies decay often proceeds by positive feedback, for that which is causing the maladaptation, possibly structural violence [vs. integrated learning], breeds the continuation of the maladaptive behavior. And further, it inhibits adaptation to a higher potential [of creative fulfillment] through the 'priming' of maladaptive values. Fundamentally, nature is a self-regulating system, and to separate society too greatly from natural mechanisms, particularly those that facilitate adaptation, is to separate

the individual from his/her emergently fulfilled self, while generating a whole host of unintended and unpleasant consequences at the same time. It is a general principle of systems that systems change in response to feedback and that [human] systems maintain their stability, their very continuity, by making adjustments based on feedback (i.e., individuals and other systems correct the alignment of their orientation to life through feedback).

In part, the orientation of a community-type society is designed to maintain 'stability' in the fulfillment of the needs of the individual, so that, [in part] the individual does not manifest aggressive, violent, jealous, greedy, controlling, and other socially corrosive, and maladaptive behaviors. 'Stability' is simply a description of the state of a system when the system is effectively and efficiently fulfilling its purpose (i.e., human need fulfillment) and not generating persistent states of instability (e.g., structural violence is a form of instability to human fulfillment). When needs are not fulfilled, then individuals are likely to behave in an unstable manner toward getting their needs met [at any relative cost] wherein their thoughts and actions thwart fulfillment in themselves and others - this is what is being referred to here as an "unstable social environment" - an environment where corrosive behaviors and structural violence thwart individual need fulfillment, and by consequence, produce the regeneration of corrosive and maladaptive behaviors.

A stable society is composed of stable and presently mindful individuals. If the individual is "absent", as is the case in the humans portrayed in Aldous Huxley's "A Brave New World", then no true stability can exist. Without the full presence of the individual there will not exist coherent feedback - without the individuals fully intrinsic participation there remain an absence in fulfillment. In Huxley's book, "stability" is achieved as a product of conformity and anaesthetization. It is not a rational understanding from a place of open inquiry toward ever greater truth [through corrective feedback]. Instead, the characters in Huxley's work live in a society in which individual expression is retarded, and "stability" is achieved through artificial affluence and sense satiation devoid of meaningful fulfillment. The individuals in the society have become accustomed (conditioned, habituated, accepting, drugged) to their plight and abnegate any sense of personal or social responsibility to evolve themselves and the society. In Huxley's work, individual fulfillment is non-existent; instead, what is described is some abstracted authoritarian notion of "societal need", which arises out of another arbitrary abstraction, that of the claimed "need for stability". This "need for stability" is not an individual need, but a need of the State [to control the population]. In the real world, abstractions are verified [in their very existence and alignment with fulfillment] through feedback from the natural world. When the individual is absent, then conscious verification fades, and abstractions, which might otherwise be seen for their alignment away from that which is desirable, spawn mentally isolated (and isolationist) realities of their own.

This quote from Huxley's work is a clear example of semantic confusion; the word "stability" in *A Brave New World* does not mean stability in the fulfillment of needs and a stable trajectory toward a higher potential state of life experience, but "stability" as in unchanging automatons (or static robots) who maintain an unquestioning belief in the authority of the State and are artificially satiated to reduce inquiry into truth. These persons are reduced in their conscious momentary presence with themselves; they are in a state of separation.

A stable society is a civilised society or "civilization". It is the case that one may believe that s/he exists within a "civilized society", but when needs are exploited, chronically pseudo-satisfied, or sated at exponentially insurmountable expense to oneself and the ecosystem, then one is not living in a civilization, but in a society on the brink of collapse or transition. The population of a community-type society transitions to new dynamics as required and/or intended.

*"We don't want to change. Every change is a menace to stability..."*

- Aldous Huxley, *A Brave New World*

### 1.3 Market-State values

In the market-State, the values of secrecy, scarcity, and competition are objectivized (turned into objectives), in order to win and succeed over others for accumulated "token options" access to scarce resources and private territory. Market-State values prioritize the cultivation of an environment where secrecy, scarcity, and competition are not only prevalent, but also, incentivized. The core market-State versus community values could be visualized simply in the following way, given that all societies have the same/similar core values (directions, but defined differently):

#### 1. Market-State values:

- A. Freedom: Scarcity (because, it improves profits; "it is your freedom to make something your property and make it scarce").
- B. Justice: Adjudication and secrecy (because, it improves advantage; extrinsic reward and punishment).
- C. Efficiency: Competition (because, it motivates).

#### 2. Community values:

- A. Freedom: Human need and preference fulfillment in socio-technical habitat, within a planetary ecology (because, there is a real world).
- B. Justice: Fair distribution of resources through habitats and conditions of restoration of well-being for all individuals (because there is human consciousness).
- C. Efficiency: Contribution and standards (because, together we are stronger in flourishing).

Secrecy becomes a strategic tool to gain an edge, often associated with protecting sensitive information or gaining leverage over competitors. The concept of scarcity is perpetuated to elevate the perceived value of resources, commodities, and territories, fostering a sense of exclusivity and competition for access. These values drive the pursuit of accumulating "options tokens" (a.k.a., money) symbolizing the access to limited resources or coveted spaces (through "prices"), driving individuals or entities to compete and win in the market-State "priced" landscape.

Moreover, within the market-State paradigm, the emphasis on individual achievement (a.k.a., merit) and competitive success (i.e., "wining") is magnified, reducing fairness. When a culture of competition is deeply ingrained, it structurally incentivizes individuals and entities to strive for personal gain and the accumulation of resources at the expense of others. This environment not only incentivizes action taken upon objectives of secrecy, scarcity, and competition as core objectives but also reinforces a framework where the pursuit of self-interest-over-others and the constant drive for merit and profit become central tenets of societal and economic progress within society.

### 1.4 Self-interest, self-maximization, and greed

**MAXIM:** *Greed, once engaged, sets its own limits.*

All individuals have an intrinsic interest (i.e., a self-interest) to maximize that which is desired, because maximization means that self-interest is preserved into the future. In community, that which is desired by those with a community systems science education is optimized human need fulfillment and preference accounting. In the market-State, that which is desired is money accumulation (profit) and power-over-others (authority).

The ancestors of early 21st century society would naturally preserve both food and plant seeds for times when there was less natural abundance. Hence, greed is not necessarily "negative"; everyone is "greedy" (i.e., self-maximizes) in context. Notably, if "you" want to live with a decent quality of life in the economic market system, then there is a level of greed that "you" have to maintain. Obviously, people can become obsessed with acquisition, and neurosis can develop such that they believe they need ever more stuff, and their whole value orientation and sense of self-worth becomes associated with accumulation and gain. To a great degree, however, the neurotic acquisition of stuff and association of objects with self-worth (e.g., "status symbols") exists because of the market and its punishment/incentivized reward structure. For discoverable reasons, greed, in its pejorative, becomes a part of the personality of some operators in the market. The design of some systems simply brings out the less fulfilling behaviors in people.

Here, it must be asked, "Is it fair to judge and label someone as greedy when the life imposed rules of the socio-economic game for survival incentivize greedy behavior?"

At least to some significant degree, it is truthful to state that individuals act through their own self-interest, which is aggregated through a time horizon that is generational (i.e., rather long). An objective for a society that realizes its generational nature may understand and apply a structure to society where everyone benefits without anyone benefiting at the expense of another (or others). However, it is significant to recognize that self-interest becomes tied to the social and economic systems of which any individual is a part, and so the societal system must be design based on mutualism (values and access), and not, exclusionism (rights and property). Individuals in such a society are likely to recognize that each is self-interested, and so together, they design a non-violent society that is better for one and all around one (i.e., for oneself and everyone else). Individuals therein understand that in society self-interest is intrinsically tied to social interest, otherwise there is not this thing referred to as, society. This form of self-interest might otherwise be known as rational self-interest where individuals perceive their self-interests as connected to the self-interest of others among a common ecological

environment and socio-technical organization.

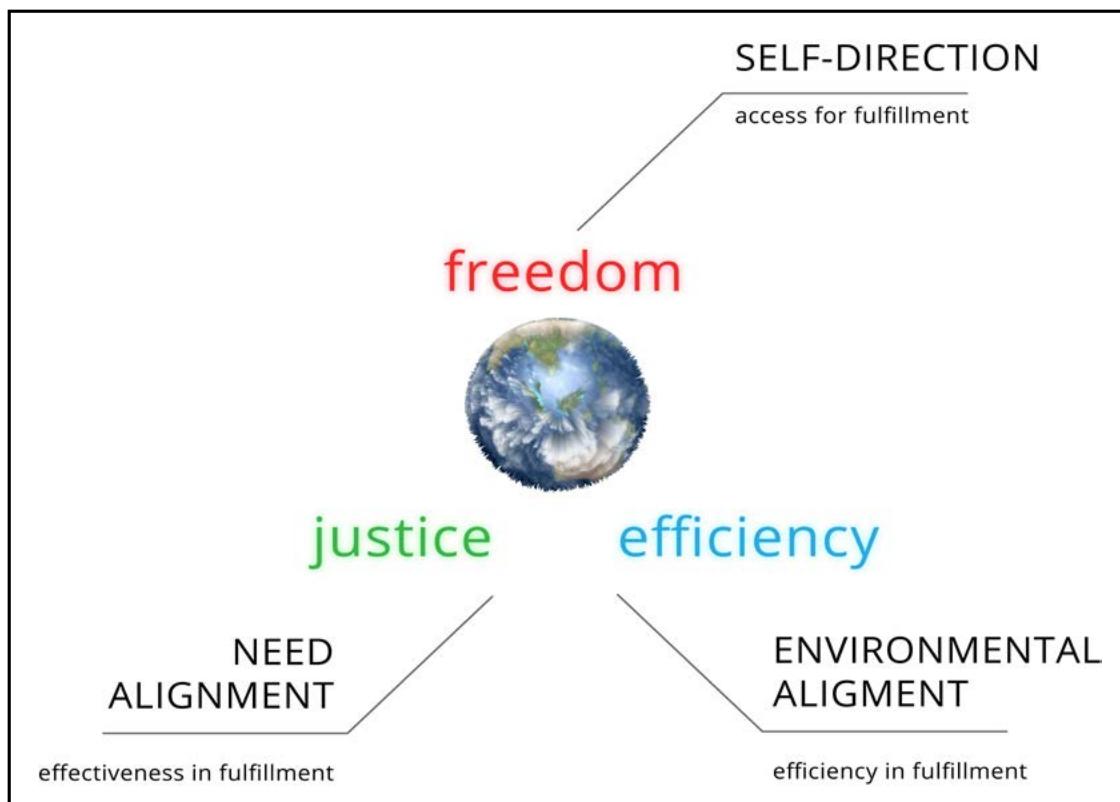
### 1.5 Value system sub-divisioning

The value system of a community-type society is currently subdivided into two sets of values:

1. Primary (core axiomatic) values - foundational orientation of core direction.
2. Secondary (stabilizing) values - supporting values and objectives, guiding-mission principles.

Together, these value sets provide the orientational probability of fostering a stable, adaptable learning community with self-directed individuals who arrive at informed decisions and create fulfilling relationships throughout all aspects of their life. Also, as a single unit, they represent the essential [prerequisite] value conditions for the fulfillment of individual human beings among a larger social and environmental ecology. In other words, their encoding into the structure of the community is intended to facilitate an [stable] individual-social movement toward a direction of higher potential fulfillment.

**INSIGHT:** *In order to change behavior, thinking and values must be changed.*



**Figure 14.** The three core values of a community-type society are freedom, justice, and efficiency (which are themselves conceived of and configured for human fulfillment). A set of stabilizing values encompass these core three values, and together, all values ensure a stable societal navigational system toward adaptive human fulfillment.

## 2 The three axiomatic values

*A.k.a., The three core value sets, core organizing concepts, core organizing social-relation concepts, primary values, metavalues, meta-values, directional values, foundational orientation, core orientation, core-mission objectives and principles, primary decision objective agreement sets, etc.*

The three primary value coordinates for a socially stable community directed toward a higher potential of fulfillment are:

1. **Freedom** - autonomy, self-direction, societal access service-support, nurturing, education, contribution, leisure and human need accounting. Here, people live free to experience higher levels of flow and fulfillment in society.
2. **Justice** - access distribution and well-being restoration; includes ecological restoration. Here, there is applied safety and restoration practices.
3. **Efficiency** - applied systems science optimization in the productive fulfillment of needs.

**CLARIFICATION:** "Justice", like "freedom", as a core organizational concept, likely means something different to those with a different societal paradigm. "Justice", like "freedom" is defined differently by people living in different configurations of society.

These values orient individuals and society most closely toward their common direction of purpose and the optimized fulfillment of all human need. Together, these three values represent a three-dimensional model for orienting the structure by which human fulfillment and social stability is sustained. Without a solid understanding and implementation of these conceptual moral [orientational] coordinates, the ultimate sacrifice might just be the fulfillment of individual human beings. The freedom to live a life of optimal well-being and fulfillment is connected with justice, expressed (in part) as a system of organization that provides sufficiently equal access to those services (and objects) that fulfill humanity. This fair distribution of access to services, which are composed of resources and contribution, is connected with efficiency, expressed as optimization, or simply, "doing more, with less".

At the very least, a stable orientation toward common global human need and preference fulfillment involves a social allowance for self-directed freedom, actualized justice, and operationalized efficiency. Herein, a population may come to realize that there is no intrinsic interest toward the well-being of everyone in unjust, unfree, and inefficient societies.

## 3 Freedom

*"Between stimulus and response there is a space. In that space lies the power to inquire more deeply and to choose a thoughtful response. In that space lies the potential for growth and freedom."*

*- adapted from a quote by Victor Frankel*

Between the states of stimulus and reaction lies the freedom of awareness and of conscious response. In a real and objective world a response to a stimulus has consequences. Hence, the power to choose freely opens a decision space where the stimulus and consequential alternatives may be considered, and a decision constructively selected in the awareness of consciousness. When a stimulus simply triggers a reaction without the presence of thought, then impulsivity and compulsivity are likely to be found hindering the highest potential expression of an individual, of consciousness. Herein, freedom appears as the absence of the effect of impulsiveness and compulsion on an individual's behavior such that there is less reaction and more responsiveness (i.e., less reactivity and more proactivity). Hence, a choice is "free" when conscious reasoning has been allowed to occur (i.e., when individuals have the space to process and integrate their experience, and hence, to act with conscience at a global level). When reasoning occurs, then there exists an expansion of choice through conscious thought, versus its careless contraction through reflex. Herein, learning must exist for the expansion of choice in the direction of progress. In effect, learning impacts the availability and probability of choice within an iterative decision space (i.e., decisions over time). Also, freedom stems from self-developed empowerment, and not allowing oneself to be manipulated and "de-energized" by external forces. Therefore, the ability to respond (i.e., response[ability]) is the opposite of the denial of responsibility and is not equivalent to obligation. The idea of freedom is bound up in the idea of doing anything in the real-world (i.e., having any ability to be active in some way in the world). Hence, fundamentally, freedom is having one's human needs and preferences optimally fulfilled, because it is from this that all thriving (social, decisional, material, and lifestyles) lives arise. Here, "self-direction" is "freedom" is "autonomy". The term, "autonomy" comes from auto-self", and -monia, a suffix signifying action, state or condition).

Since compulsion is a form of discrimination it follows that freedom is the absence of discrimination, characterized by independence of thought and the expansion of self-direction and meaningful inquiry. Discrimination sidetracks consciousness from the experience of an existential common relationship with itself; it thwarts the fulfillment of human need. Freedom involves the freedom of communication (speech, expression, and sharing) - censorship is interference with freedom. Freedom is experienced by in the ability

to rise above predation and oppression, and ultimately, violence in relationships among one another. Freedom becomes the facilitation of access to the fulfillment of needs. Fundamentally, freedom is the ultimate realization of each human being's potential. A community-type society facilitates the freedom of everyone, except the freedom to act irresponsibly at a social level.

'Transcendence' is the unique human ability to rise above automatic reactions to external factors (i.e., "equanimity") and find causal desire (i.e., a source-system/environment) inside. Transcendence is the emancipated consciousness that has reached such a level of development that it can see itself as the cause and no longer serve as a simple relay to conditioning. What is often called "realisation" is the awareness of the freedom of causality/probability inside the nervous system, that it has its own causality/probability, not just serving as a relay to conditioned reactions like before. Herein lies the realisation of oneself as freed from the conditioned, unserving instinctual reactions, and cultural/traumatic maladaptive programming.

In a community-type, free society, there is at first, the freedom to be wrong, which necessitates freedom to speak without censorship or persecution. When someone's wrong has so injured others that there is trauma, then justice in its restorative form is engaged. Justice in its distributive (egalitarian production and distribution) form is always present in community for it is understood that societies of more unequal access have more, and more violent, social problems. Here, the value of efficiency is applied as an objective to optimize all work, thus optimizing all coordination, production, and distribution of human need fulfillment. In concern to the phases of life in community, people are more free when they have the freedom (liberation) to choose contribution or leisure for the longest duration of their lives. People are also more free when they don't have to exchange abstractions, objects, and their own bodies (or others) for their self-development and fulfillment.

In any given society, there are two essential freedoms:

1. **The freedom to feel fulfillment** (i.e., feel complete with oneself, one's life, and society at large):  
Freedom is access to sufficient human need fulfillment.
2. **Freedom from within** (a.k.a., the first freedom):  
Freedom is access to an internal state of integration.
3. **Freedom with-out** (a.k.a., the second freedom):  
Freedom is access to those external elements that fulfill needs. Freedom to move around the Earth is encompassed by this freedom.
4. **Freedom from without** (a.k.a., the third freedom):  
Freedom from coercion (i.e., from coercive influence), freedom from those who might intend to control (i.e., freedom from power-over-others).

Internally, freedom can be perceived in terms of,

1. **Cognitive liberty and the power of thinking:**  
Stimulus followed by an awareness of thought, and the capacity for thought, prior to response. Wherein, freedom exists in the space and stillness between stimulus and response.
2. **Mental slavery and weakness of fearing:** The fusing of stimulus and response without thinking (i.e., without the space for integration; reaction).

Categorically speaking, there are also

1. **Self-directed freedom (positive freedom)** is the freedom to act, for which there are varying degrees of independence. The freedom to live a self-directed life with access to all that society, humanity and the earth, have to offer all of humanity.
2. **Coercive freedom (negative freedom)** - is the freedom not to have your fulfillment interfered with negatively. It is negative because coercion is something not needed/wanted, it is negative interference in fulfillment and self-direction.

**NOTE:** *A simplified application of these two types of freedoms may be someone stranded on a deserted island. The person has absolute coercive freedom, because there isn't anybody on the island who could interfere with him/her. On the other hand, his/her positive freedom is limited because he has few resources at his disposal.*

Negative freedom is the default state of an individual and society is only capable of subtracting from that freedom. Almost exactly the opposite is true for positive freedom. A fulfillment oriented society is capable of adding to the opportunities available to any given individual.

The prototypical core value set for most societies is whether they acknowledge and how they define freedom, justice, and efficiency:

1. The prototypical **freedom** is that of reconstruction the environment toward one's will. The question is, to where is the individual (and at the societal-level, social) will directed?
  - A. There is the **egoic freedom** to control everyone else's thoughts and actions. The question is, how much and to what end is influence applied?
  - B. There is the **self-less freedom** to have no control over others thoughts and actions. The question is, to what end is inaction a form of influential action in itself?
2. In community, freedom is stabilized by **justice**, expressed as a value of free and sufficiently equal

access to those services (and products) that fulfill humanity, including the service of restoration. Those who are fulfilled are unlikely to harm others, and those who have been harmed by others ought to be restored to fulfillment. The question is, how equally optimal is everyone fulfilled, and are those who have been harmed being restored?

A. In the market-State, freedom is stabilized by punitive/retributive justice that punishes offenders [of the law].

3. The value of justice as sufficient access to fulfillment is stabilized by **efficiency**, expressed as optimization access [to fulfillment], calculated solutions [for fulfillment], and [human] need identification.

B. In the market-State, freedom and justice are stabilized by the efficiency with which it is possible to acquire and trade [financial and commodity] resources.

**INSIGHT:** *If one desires freedom, one must facilitate freedom. In other words, if one expects freedom, then one must allow freedom. This means that there is no other way to receive freedom than by respecting other's freedom as well as your own.*

Human needs are the foundational elements that shape human lives and drive human aspirations. Among these fundamental needs, the concept of freedom and autonomy orient fulfillment. Someone who has freedom, has autonomy). An autonomous individual has the capacity to form and take decisions, correct course when necessary, and engage in continuous self-improvement, which not only applies to personal choices but also extends to societal well-being and optimal functioning of their body. The three autonomy abilities of any intelligence/body are (i.e., levels of autonomous operation):

1. **Self-directing** - taking decisions (without force or coercion), based on self-selected and self-set goals and objectives. This is always done within the bounds of a decisions system/framework.

**Self-correcting** - detecting and rectifying tactical, strategic, logical and technical errors and flaws (of all recognizable kinds).

2. **Self-improving** - capable of improving all layers of its stack (physical, mental, and models).

In the market, freedom that is given to anyone through law and legal documentation only means that someone has the right to do a certain thing, but it doesn't mean you can do it. To be able to do it, you must have the money (a.k.a., credit, tokens, etc.) to do it. Everyone has the right to eat three nutritious meals a day, but if you don't have the money or opportunity to get the food, then what good is that "right". Hence,

in this sense, freedom really means the opposite of continuous want and hope. If one's freedom granted by law does not give one thing opportunity to satisfy those needs and preferences, then it does one no good. Real freedom means opportunity and well-being; if it does not mean that, it means nothing. Freedom really means the opportunity to satisfy one's own, and others', needs and preferences. If one's freedom granted by law does not give one thing opportunity to satisfy those needs and preferences, then it does one no good. Real freedom means opportunity and well-being; if it does not mean that, it means nothing.

Freedom is not the ability to act on any given impulse, it is the ability to choose [consciously] what to act on, and why. Here, freedom is not the absence of commitments, values, or discipline, it is the ability to choose them at will. Between stimulus and response there is a space, and in that space lies an individual's opportunity to choose his/her response; and, therein lies growth and freedom.

In a sense, freedom is the condition where individuals are pursuing their own fulfillment ("good") in their own way (i.e., in a self-directed way), so long as one does not attempt to deprive others of theirs or impede their efforts to obtain/sustain freedom. Here, freedom entails responsibilities to ourselves, each other, and the earthly habitat we all share. Strictly speaking, freedom is the ability to affect change in the world/reality through will.

**INSIGHT:** *Allow for the most appropriate forms of freedom in the moment without allowing for those forms of freedom that will eventually disallow future freedom.*

The state of freedom may exist in the context of perception, thought, choice, and action. It is the suspension of pre-conception, as "seeing through beginners eyes". Freedom arises when consciousness can acknowledge that existence is different than what it may have thought before, and thereafter, choose differently. Hence, freedom exists in a mind clear of draining contradictions and dissonant relationships. It may be observed as independent thought, and as an individual "taking responsibility" for the sovereignty of their perception, their cognition, their relationships, and ultimately, their decisions toward or thwarting fulfillment. In a cognitive sense, freedom begins with the ability to reason and the unbiased examination of [experiential] evidence through mindful awareness of that which is. Wherein, the body experiences data as the mind processes it. Among the population of a community-type society, each individual is self-responsible for meeting needs in life enriching and self-accepting ways.

Freedom exists through a reduction in [the desire to] control [others] as well as an engagement with inquiry, discovery, and thoughtful action. It is the result of rational reflection and discerned deliberation, and is not intrinsically related to omnipotence. Note that the lessening of control in a supportive environment helps an individuated consciousness to have more strategic (or "balanced") control later, once s/he has integrated

those "split-off" parts of him/herself. Wherein, a critical aspect of freedom is the restoration of ones own thinking processes, of thinking for oneself, thinking as an individual (or individuated consciousness) with a 'critical factor' and the ability to experience and to verify in a common existence. Individuals must be critical of what they allow into their minds, so that they may form a coherent and integrated visual structure of the world from which to navigate together.

Freedom appears at the social level as the potential to fulfill one's deepest and meaningful desires [through integration and access]. Herein, freedom is facilitated by social cooperation and the coordination of systems to maintain access to those items that fulfill needs. In a value orientation toward a higher potential state of fulfillment it is incorrect to reduce freedom and to hinder the fulfillment of others' human needs, which reveals an ignorance (or misunderstanding) of one's deepest and most meaningful desires; instead, it reveals self-limiting conditioning.

Freedom is founded upon the knowledge of the objective difference between actions (and behaviors) that lead to human fulfillment and those that lead away from it, and then choosing the correct[ly fulfilling] one - this is true moral conscience (con[with] + science). As the exercise of conscience increases, freedom increases; as morality and the exercise of conscience decreases, freedom decreases. Morality (ethics) represents a shared system of [mutual] agreement [upon access]. Some refer to this as a "natural law" (i.e., a law that operates in creation and no one is capable of breaking). In nature, individuals have the freedom to fulfill themselves, or to destroy themselves through actions that align with a higher or lower entropic direction. Fundamentally, a population can facilitate access to its needs through which everyone may expand his/her state of freedom, or a population can thwart the fulfillment of its individuals' needs and consequently reduce everyone's freedom.

The world is an information space, and therein, freedom of choice in the exploration of the world is a universal aspiration and the single most important basis of human happiness and joy. Happiness must be contrasted here with the condition of narcissism, for freedom is not impulsive. Also, happiness among community involves the seeking of relationships and is not associated with exploitative relationships.

In the history of "correct action" there has always been a tension between the trend that emphasizes the rational dimensions of life on the one hand, and the tendency that underscores the striving for happiness on the other. The pursuit of happiness is sometimes considered to be an individualistic endeavour while rationality is supposed to promote the cause of the collectivity. Thus, the false dichotomy between reason and happiness. This dichotomy is itself founded on another groundless assumption, namely the incompatibility of the individual, nature, and his or her society. A moral philosophy organized toward the objective fulfillment of needs is free from this kind of dualism. This is the dualism of other

philosophies. Herein, there are no moral commands; instead there are rational and fulfilled individuals with the freedom to think and to choose their own potential of fulfillment.

When reason exists at a social level then a meaningful social definition of freedom may become more clear. Freedom is present when individuals have the resources, probable opportunities, and cooperative organizations available to fulfill their individual and social needs in a self-directed, participative, and volitional manner. In other words, freedom is access. Freedom may be defined in terms of the possibilities offered to the individual (i.e., the potential learning, growth and self-development opportunities available to them) in a society without obligation (e.g., currency). In some sense, freedom is bound up with the idea of possibilities. For the very stability of a society individuals must be free to experience and experiment with their world for themselves, to verify existence and participate in the evolution of the community, unhampered by the mere conventions of culture (or market obligation). Individuals must be free to inquire more deeply into themselves, their society, and the universe; and this requires access to [at least] a society's information resources and technologies at an equal level. Though most importantly and more fundamentally, it requires the fulfillment of a spectrum of common needs.

When socio-economic interrelationships become less impulsive, less controlling, and more rational, then a common perception of a higher potential state of [entropic] organization might begin to emerge. Therein, coherent organization at a social level is likely to lead to socio-economic increases in efficiency, and hence, allow for the potential creation of a progressively more free and more [verifiably] thought responsive environment. A more thought responsive environment requires a different set of [social] dynamics than are present in early 21st century society.

The development of intelligence necessitates freedom, and freedom necessitates intelligence. Within the Community there exists a pursuit of truth as well as a pursuit of fulfillment grounded in [at least] reason, knowledge, and social cooperation - in intelligence. In general, 'intelligence' is the ability to solve well specified problems in a particular domain. For a social organism, intelligence allows for the evolution of social cooperation, and behaviors are intelligent if they are conducive to social cooperation. Behaviors and communication that inherently create social conflict are a reflection of a lack of intelligence for they maintain social environments that are unlikely to fulfill human needs, and hence, are likely to reduce an individual's freedom. When someone behaves "unintelligently", they are essentially behaving in a manner that negates the fulfillment of [at least] their own, and therefore, other's needs (remember, needs are common). But, the ability to do well in one domain (i.e., to think critically and solve problems in one domain) doesn't necessarily translate into other domains. This is why all domains of life must be available for experiential

learning by individuals in community.

In systems thinking, the cooperation between the components of a system is the system's 'intelligence'. The components in, and structure of, a system represent the system's 'potential intelligence'. Generally speaking, intelligence is the ability to solve problems in the service of some goal (Note: this is a general definition). Intelligence investigates issues, does not believe, and visualizes in order to solve problems. Intelligence thinks through (visualization) about the problem space and chooses the optimal policies (rules) in order to choose the optimal actions. Intelligence uses memory, search, and analysis to describe, understand, and decide. And in nature, intelligence involves survival and replication.

The expression of a higher human potential rests upon, at least, the value of freedom. Herein, the concept of human potential is only meaningful in connection with normal psychological development, which leads to the individual's full functioning as a socially intelligent being. Essentially, fulfillment of human potential depends on provision of the right conditions for growth. A human's higher potential expression in the material environment is akin to a seed, which may only develop if provided with the freedom for growth and all the nutrition that growth entails. The expression of a higher human potential requires a full and healthy personality development among individuals in society. A community-type society exists through fully self-directed and empowered individuals who effectively integrate their life experiences.

Freedom begins with the individual. It is the allowance of others to be free and the exercise of one's own freedom. It exists in the recognition of a symbiotic relationship between the well-being of oneself and the well-being of those others who exist in mutual relationship with oneself within a common context (i.e., reality, social, economic, and ecological). Freedom only exists at a social level when freedom is shared. If "you" want to champion freedom, then "you" have to champion the freedom of others. Herein, freedom appears as an allowance for, and acceptance of, those who seek an environment for the open expression of themselves, their feelings, and their ideas. Within a sufficiently rational and healthy individual there is a logical and emotive recognition that one exists within an evolving whole. Maybe, a population should ask, "How do we enjoy life, while meeting our own needs, other people's needs, and the needs of the environment (or lifeground) of which our life is a part?"

Furthermore, if other people are not free, they will be ordered to fight (or en-force) against "me", making any use of my freedom ultimately impossible. This may be summed up in the following statement, "If no one else is free, then I cannot be free." A deep respect for life seems to demand a deep purpose for life - a purpose that supports everyone in their freedom of development toward a higher potential.

Freedom is not synonymous with power, but means maintaining rational alignment of behavior with accurate information toward a meaningful direction.

At a principle level, however, a population is only as free as it exists within the "laws of nature" (i.e., the phenomenologically natural world), which actually governs a common[ly] technical reality. When individuals violate these principles, then nature appears to dictate destabilization and eventual destructive transformation. The presence of nature cannot be ignored if individuals desire freedom.

Self-directed freedom and autonomy are characteristically related terms. Every form of oppression, particularly the expression of the coerced replication of belief (i.e., "schooling"), is a threat to the idea of a participatively free community (i.e., a community of equal[-ity + -nimity]). A higher potential exists in understanding the subtle difference between openly active inquiry and attachment [to any belief]. It is the difference in being open to the momentary flow of existence or utter attachment to a/the moment, which generates a spectrum of potential oppression.

Also, free expression and inquiry cannot involve the acceptance of definitions at "face value", as pre-packaged "gifts". Linguistics, language, semantics, and definitions orient consciousness. When language and knowledge are accepted at "face value" without investigation they programmatically and subconsciously re-orient consciousness [without intentional and integral freedom in consciousness]. In other words, acceptance [of meaning] without inquiry (e.g., "authority") re-orients consciousness without consciousness realizing that it has been re-oriented.

Without a broader system that structures and supports autonomy, there is unlikely to be autonomy for a complex adaptive system. In other words, there is unlikely to be meaningful autonomy of a complex adaptive system (i.e., a human individual) without a broader system that structures and will support that autonomy (such as a community-type societal structure).

If someone were to live in a society that would not allow for them to make decisions, right or wrong, about their own body or consciousness, then there is something very wrong at the core of that society. For someone to tell "you" what "you" can and cannot do with "your" own body is essentially their assertion of ownership over "you". In fact, it says something deeply troubling about the type of society and people in it that would suppress such natural, primal expressions of oneself. Alternatively, a free society maximizes the range and depth of higher potential possibilities available to the individual while facilitating restoration of those who have disaligned from their continued development toward this direction. This implies a society where possibilities are not artificially and dogmatically limited by assuming control over sovereign consciousness and forcing consciousness to conform to the external will of others. It also implies a society that facilitates the freedom-of-movement and freedom-of-expression within a common, real world decision space.

In community-type society, individuals have not only freedom of speech, but, even more important, freedom

of thought. Propaganda is repeated one-sided (biased) information that damages freedom of thought, and is unacceptable discrimination. Herein, it is important to be aware that some people desire freedom from the speech of others, which is a necessary design consideration. However, the antidote to bad speech is not removing the "bad" speech; instead, it is more "good" speech. The solution for bad speech is more scientific and compassionate speech. If those with political power begin removing "bad" speech, who knows where it will end, and who knows what "bad" speech will be defined as next. Simplistically speaking, "If you're not for freedom of speech for people who you despise, you're not for freedom of speech." Freedom of speech requires individuals to tolerate most speech, not just the speech they agree with. In other words, if someone is only for freedom of speech for people with whom s/he agrees, then s/he is not for freedom of speech. However, when it comes to content moderation of the Internet and publicly available information services, particularly those that children have access to, there are limits, which are generally set by limitations on exploitation of children and adults.

Freedom of self-directed movement is the absence of subjective force and individual coercion. By degree, coercion negates both self-direction and freedom of choice through the application of subjective force in a direction neither initiated nor immediately intended by the receiver. Coercive force, whether subtle or outright vicious, is a form of [mental, emotional, and physical] violence; it is a form of violence that specifically generates a scarce state of need fulfillment, and when encoded into a society's socio-economic system it becomes 'structural violence'. One of the more common and subtle forms of coercion in early 21st century society is the statement, "If you don't do what we want, then we will cut your funding."

*"If we are not sovereign over our own consciousness, then we cannot in any meaningful sense be sovereign over anything else either [and] cannot claim to be free in any way."*

- Graham Hancock

### 3.1 Self-direction

**QUESTION:** *In society, are you only as free as your purchasing power, or are you only as free as your contributed solutions?*

Self-direction is a principal characteristic of freedom. Self-direction is an individual's ability to independently plan, learn, reason, problem solve, integrate & recall, regulate, initiate, integrate, organize & coordinate, and arrive at decisions. These regulatory processes [among many others] act in such a manner that someone may more accurately align their decisions with an intended direction, a 'self-direction'. Self-directed freedom allows individuals to act and to produce effects on their inward

thoughts and feelings, within their own body, upon the course of their lives, and upon the environmental world in which they are in interrelationship.

Self-direction refers to the "self" directly acting toward a purposeful and meaningful direction. Herein, freedom could be characterized as a state in which an individual is pursuing those things that bring them joy, a state of flow, happiness, and higher potential opportunities; wherein they are pursuing their human abilities, pursuing knowledge and discovery, experience and novelty. And ultimately, they are pursuing their emergence into their full potential as a human being (e.g., self-actualization and transcendence on Maslow's hierarchy of needs).

Self-direction involves the continuous emancipation and empowerment of the individual. There are certain mental processes that facilitate empowered and self-directed individuals, among which are self-directed learning and systematically logical integration. Wayward-directions not aligned with the idea of integrating reality for the purpose of need fulfillment might end up obfuscating true knowledge and conforming the individual into a state of perpetual dis-empowerment.

When self-direction is defined in the context of an individual who is still open to learning, then the term 'self-directed learning' arises. 'Self-directed learning' is learning that characteristically involves a focus on personal and self-growth. Therein, the learner takes responsibility for their own learning, their own curiosities and desired experiences.

If there were an innate intentional direction in humankind, then it might just be the drive for one's own self-directed freedom of thought and development, which is misdirected and stifled by the environmental structures imposed upon individuals by an aberrant society. This innate human desire toward thoughtful fulfillment may also be known as a self-direction "instinct". It is the instinct for betterment and for self-improvement, layered on top of self-interest, that all individuals innately have within them, but which is weeded out through trauma and conditions that limit. For individuals, the instinct for betterment can be overruled and damaged, but is not ever "broken".

Individuals cannot self-direct when they do not realize the presence of stimulus-response in their life patterning. 'Stimulus response' is a programmed (and programmable) autonomic response. The ability of an autonomic response to service the fulfillment-needs of an organism is contextual. When there is no memory of the program, then there is no "feedback" in the stimulus-response relationship. If there is no feedback information, then there is no ability to re-program the behavior to one of more thoughtful self-direction. Stimulus and response without conscious thought negates an individual's freedom of choice, it reduces their ability to strategically self-direct - if someone is not reflecting a philosophy that is reflective of the world, then they are going to be out of sync with the world, potentially in conflict with the world, potentially experiencing cognitive dissonance, and certainly, directed away from the fulfillment of their

true self. That person's ability to self-direct will become [by degree] governed by their prevailing programming, and not by consciousness accounting for feedback from a decisive action in a common real world space. Here, freedom is curtailed when individuals believe [things that are not true], because falsehoods limit the operation of society and the sustainment/predictability of fulfillment. For instance, "You can't really say that you are free when you are being given and accepting false information which you are using to take life altering decisions".

Individuals cannot self-regulate when they lack the desire and ability to discover [new] information, and hence, explore reality while integrating that which they learn in a non-contradictory manner. Herein, it is unwise for the very stability of society, let alone the individual, to delegate one's observation and cognition skills to another or to a "leader". The very belief in authority leads to the non-resistance to authority and the eventual surrogation of one's own conscience to the authority itself (i.e., the negation of self-direction becomes "duty to authority"). All belief in authority is blind by consequence, inherently maladaptive, and obfuscating of the presence of stimulus-response.

It is important to clarify the term "leader" herein. The term "leader" has two meanings: the first is that of the authority as a "leader" who is directing others; and the second is that of the courageous "leader" who simply steps out to go first. In early 21st century society, individuals need more of the second type and less of the first. Regardless of the definition, it is wise not to put other humans on pedestals and make believe they are better than "you".

The belief in authority is a perpetual nightmare bereft of self-directed, self-empowered freedom, which is never attainable. The belief in authority is the belief that some person or persons have a special ability to determine what is true or false, and others must accept its dictates. The belief starts figuratively with "the seed of fear", and this is why the belief in authority is a perpetual nightmare, for it always maintains (or "renders into consciousness") the experience of fear accompanied by the negation of the self-direction of consciousness. Wherein, fear can be used for purposes of social control. Instead of believing anything, it is possible to just leave it as an unknown (or, give it a lower confidence rating).

Freedom means not being beholden to anyone else, free to choose what one wants to do each day, free to move as best fits that day and ones intentions, free to use, adapt, and share information. It is possible for the population of a community-type society to live through cooperative organization [and the extension of its information processing function to automated technical calculation]. What is desired by all, if not, fulfilling lives and a society that each individual is proud of in the present, and proud to pass down to future generations.

**NOTE:** *Without self-awareness there is no awareness of one's needs found commonly among others, and hence, there is no real*

*freedom, for one will not have recognized that the freedom to fulfill one's own needs depends on the freedom of others to have their own needs fulfilled in kind.*

### 3.1.1 Living entails freedom

Freedom is appropriate and necessary for the ontological description of life's most elementary dynamics. The presence of freedom carries with it the burden of need and entails both an endangered material existence and a living continuum. Embodied existence depends upon an embodied system, a "primordial act of separation", detachment from the overall integration of things within the totality of [source] existence, positioning itself vis-a-vis the world, and thus, introducing an opposition between "being" and "nonbeing" into the indifferent assuredness of existence. Material-living substances accomplish this by assuming a relationship of precarious and continuous independence vis-a-vis that same matter which is indispensable for its existence (i.e., organisms have material needs such as shelter, water and food), and by distinguishing its own identity from that of its temporary material basis, which it shares with the entire physical world. Freedom requires work in one's relationships and in oneself.

Being, thus suspended in possibility, is characterized through and through by polarity. Life always manifests this polarity in basic antitheses between which its existence is located: being and nonbeing, self and world, form and matter, freedom and necessity. Of all these polarities (manifested illusions), the one between being and nonbeing is the most fundamental. Identity is wrested from it in an extreme unceasing effort to postpone an end to the material that is inevitable - there is entropy. For, nonbeing has generality, or the sameness of all things, on its side. The defiance that the organism shows must ultimately end in compliance; selfhood eventually vanishes, never to return in the same form.

### 3.2 Self-interest

**INSIGHT:** *Once morality leaves the people their freedom is soon to follow.*

In a community of needs, individuals tend to be self-interested in the sense that they seek to meet their needs, while expressing and honoring their feelings, and by doing so together, they can understand another human being and act together for their mutual fulfillment. Rational self-interest may be contrasted herein with selfish self-interest. Rational self-interest maintains a cooperative "let's all work together" mentality so that everyone lives a better life. It maintains the perspective that, "I am going to live better and you are going to live better". In contrast, selfish self-interest involves a lack of cooperation and consideration of others in one's actions; it is concerned chiefly with one's own personal profit or pleasure at the expense of another's needs. Selfishness involves the disregarding of others [needs] in action; it is

"inconsiderate" behavior. Therein, "narcissism" is petty self-absorption and "hedonism" is petty self-pleasuring.

Self-interest can become, strangely and ironically, self-sabotaging, because at the end of the day all individuals directly, or indirectly, influence society, a society which influences them in turn. Hence, it is in everyone's self-interest to have a respect for the obvious reciprocal relationships that everyone has in society. The recognition that the self maintains a mutual relationship with the society, of which the self is a part, is likely to exist alongside a sense of responsibility toward both the self and the society. Herein, individuals are response able to their own fulfillment and to the fulfillment of others to be inwardly free among society. Freedom of the individual is complementary with responsibility to society. The free and responsible individual is responsible to him/herself while also maintaining a responsible interrelationship with other individuals and the systems of which a given society is composed.

All human beings share the same ancestors and so they live in a 'human' family, within a larger 'earth' family. Race, class, and regional, national, and marketed-brand identities are a spurious and caustic abstraction. When individuals realize that are members of the human family and start to identify themselves correctly, then they conceptualize [and identify] to themselves that which is also common. "You" do not [generally] exploit those who "you" identify with, and healthy humans experience 'empathic distress' for the suffering of those with whom they identify. 'Empathic distress' is the emotive recognition of suffering in another being. Due to human neurophysiology, and its ability to feel and recognize patterns, individual humans are equipped to understand others perspectives (i.e., healthy individuals have the capability for empathy and sharing). And further, individuals have a reflective mind, such that one can ask oneself, "Is this the right thing to do as a comparison to doing another thing?"

Empathic distress may be observed through the acting out of elementary human solidarity. The human species would not have survived if individuals didn't have the need, often, for everyone's sake, to be of use to others. For instance, for humans to combine with one another, to take an interest in one another, and to feel worry when others are in pain. It is important to recognize that morality, as the ability to cooperatively evolve toward greater states of shared fulfillment, is innate in humanity and solidarity is part of one's self-interest in society. Humans can be of mutual service to themselves and others, together, given appropriate societal conditions.

A community-type society is designed to synergistically combine self-interest with social-interest into a regenerative state of freedom for all in the community. Every act of engagement with the Community is of benefit to everyone, and the beauty of that awareness is that it embodies a new incentive structure that facilitates true social and environmental sustainability. It is a value orientation that generates a steady-state/dynamic relationship between the individual and their

total environment, while also eliminating the caustic and destabilizing inequalities perpetually reinforced under other social models.

**INSIGHT:** *The moment individuals don't have to worry about their survival, that is the moment they can actually use their intelligence to start something more deeply meaningful. In other words, humanity will have the freedom to start doing things that are more meaningful as soon as the variable of "how am I going to survive (today, tomorrow, a week, month, year from now)" is sufficiently dealt with.*

### 3.3 The BITE model of freedom

**INSIGHT:** *The minute choice is removed, freedom is removed. If there is no choice, there is no freedom.*

Freedom involves freedom for the individual within the categories of conscious experience relating to being, doing, and having, which in more detail form the BITE model of freedom:

#### 1. Behavior freedom (B)

- A. The organization does not tell individuals where, when, and how they can live their lives. The organization does not tell individuals what clothing they can and cannot wear, who you can reproduce with, what and when they can eat, what hairstyles they can have, etc. The organization does not tell individuals who they can and cannot associate with.
- B. The group does not organize society so that there is exploitation, manipulation, or dependence on authority figures or profit-driven entities. The organization does not seek obedience.
- C. The organization does not restrict leisure or entertainment.
- D. The intrinsic motivators of autonomy, mastery, and purpose are used support individual's stability and performance, and to support their self-direction (i.e., sense of directing their own lives).
- E. The organization structures access (and freedom) in such a way that no one individual's access or freedoms violate the freedoms of another. There are still boundaries to the freedom of behavior in an organization that values freedom.

#### 2. Information freedom (I)

- A. In order for a community to survive it must maintain a high degree of information transparency, and open access to information about society and the planet. The organization maintains information systems that give access

- to information to the whole of society about the construction and operation of society itself.
- B. The organization does not engage in deception, including the deliberate withholding of information, the distortion of information to make it fit a belief/bias or to make it more acceptable, or systematized lying.
- C. Individuals must have equal access to information about themselves and their society.
- D. Within reason, the organization allows all individuals to speak their minds so that others in society can see how right or wrong they are. There are still boundaries to the information freedom in an organization that values freedom.
- E. The organization does not censor speech.
- F. Individuals must be able to share information as well as participate in information discovery and evolution.

### 3. Thought freedom (T)

- A. The organization promotes critical, rational, and open methods of thinking so that individuals have more awareness of a more fulfilling decision space. The organization may promote critical and open thinking techniques to support individuals in remaining open to new information, but critical of the integration of new information.
- B. The organization promotes compassion, forgiveness, and the flourishing of all individuals. The organization may promote restorative justice techniques.
- C. The organization gives individuals the space (Read: location, environment, access) to think, and adapt and integrate their thoughts.

### 4. Emotional freedom (E)

- A. Any harmful action (behavior) is seen as an issue relevant to the whole society, and its scientific cause is inquired into. Emotions that are expressive of issues with the society (e.g., anger) are indicative of an issue with society.
- B. Harmful actions in the organization lead to the necessity to restore healthy and fulfilling relationships and discover the root issue of the problem. The group will practice techniques that restore optimal relationships. The group will not punish or threaten to harm family and friends. The organization may promote restorative justice techniques.
- C. The intrinsic motivators of autonomy, mastery, and purpose are used support individual's stability and performance.
- D. Love and happiness are the emotions that flourishing individuals feel on a regular basis (in part, because of an optimal state of freedom).

**NOTE:** The BITE model of freedom comes from its inverse application as a model of groups with high social control over their members (Read: cults). Cults are the common name for groups that maintain a high-levels of control [of freedom] over their members. The BITE model of high-control groups was originally detailed by Steven Hassan (Hassan, 1990).

## 3.4 Free access to society

At the societal-level, because both the individual and the social are active, there are two principle types of freedom:

1. **Free as in "libre"** - user is given access to create, control and understand.
  - A. Libre means that the user has access to information without intentional obfuscation, and the user can use that information to better themselves and their environment.
2. **Free as in "gratis"** - user is given access without trade/exchange.
  - A. Gratis means that the user has access to products (and services) without exchange/trade (i.e., freely).

At the societal level, there are three forms of information-technological freedom for a user:

1. **Freedom** - freedom to use, distribute and modify knowledge in universally available common pools.
2. **Libre (free)** - free for access without money, not as in 'gratis'; trade free means that nothing is asked from another human in return for that which is provided/contributed.
3. **Open** - the ability of anyone to access, contribute to and use common resources.

The sustainability of these freedoms at increasingly large population scales means that users have access to information and resources (more generally, resource compositions) through some coordinated societal system.

Free access is access that has been designed to the value-standard of [user] freedom, for which there is an informational and spatial side. At the societal-level, access is free if it gives the users four essential freedoms (principles) that make up a freedom oriented standard for society:

1. The freedom to access the productions of society without trade.
2. The freedom to study and contribute to the operation (including, change) of society.
3. The freedom share access with others.
4. The freedom to live without coercion or intentional obfuscation.

When a society carries these four freedoms, then the users have [free] access to society. They have control separately (in serial) and collectively (in parallel). In community, systems are decidedly designed to meet the freely identified needs of individuals (i.e., individuals identify their needs). Necessarily, a free access society is distributed in a manner mutually fulfilling for all.

Societies that violate one of the principles of this value-standard of freedom cannot be said to be "free". If any of these freedoms are missing or partly missing then the users don't have control over the society (and instead, it is likely a non-free, proprietary, and/or user-subjugating society). User subjugating societies (i.e., non-free societies) have BITE control over the users [behaviors], and the owner/authority has control over the society. Hence, the society becomes an instrument that gives the owner power over the users [behaviors] (i.e., it establishes an "authority"). Societies can be structured to allow and enable relationships based on power-over-others (i.e., unjust relationships). Further, due to the principles and decisions by which non-free socio-societies are ordered, they will likely distribute their non-free productions in an similarly inefficient and unjust manner.

A libre definition of freedom in relation to software programs gives the users four essential freedoms (principles) that make up a freedom oriented standard:

1. The freedom to run the program in any way, and for any purpose.
2. The freedom to study the program's source code, and change it so that the program does computing as intentionally decided.
3. The freedom to make exact copies of the program as you received it, and share them with others, without coercion or restriction.
4. The freedom to make copies of your modified versions and share them as personally-individually decided.

When a program carries these four freedoms, then the users have control over what and how and when a why a program runs (or otherwise operates) for them. They have control separately (in serial) and collectively (in parallel); distributed control (even though within distributed control there may still be a contribution-hierarchy for control of actual systems).

### 3.4.1 Involuntary and domination access (trading labor and secrecy for access)

Charging people for freedom [in access to the fulfillment of their needs] is an oxymoron. Work, as banal and repetitive labor in exchange for currency, and thus, survival, makes a mockery of freedom. There is psychological violence when one must do something that one thinks is senselessly aimless in order to meet their own needs and "provide for their family"; such an obligation for anyone reduces the potential fulfillment of

everyone in society.

**INSIGHT:** *People have a tendency to act with an increasing irrationality the closer they get to something they really want - the space between stimulus and response shortens and conscience decreases. In other words, people can easily become less free in their own thought and behavior the closer they get to something they are really wanting.*

The market is a system where "freedom" of access is measured by someone purchasing power. And, the State is a system where "freedom" of access is measured in both purchasing power and power-over-others. In the market-State, freedom has come to mean the freedom to choose among multiple brand names of one product. In the market, individuals earn greater purchasing freedom through:

1. Income - labor or financial growth.
2. Gifting - free giving.

The societal requirement to exchange labor for food and other needs is a limitation (or reduction) on freedom. In the market, the employed worker exchanges labor for food (or, for money and then for food). The need to eat (simply speaking, the stomach and real-world needs of humans) compels humans to do things in the real world. Most individuals cannot live in a market-based society without exchanging labor for food; because, if they do not exchange labor for money, and money for food, then they starve. Labor in the market-State is a contract between the industrialists (capitalists, owners, etc.) and the workers, wherein the worker has no choice but to perform labor for the private benefit of another. In the early 21st century, the worker sells their labor for an income, which is required to access food and stay alive. Hence, trade is involuntary if it is traded for food (or, any basic need). In the early 21st century, populations trade labor for food and the fulfillment of their other needs, which will largely go unmet if not traded for; most labor is involuntary trade.

**INSIGHT:** *He who has labor only has labor to trade.*

In the early 21st century, the trade pyramid is applied ubiquitously throughout the planet. The trade pyramid involves two parties:

1. The "haves": The "haves" have food and technology (material resources).
2. The "have-nots": The "have-nots" have labor (only), which they trade for food and technology.

For a base economy there are several axiomatic things that can be traded:

1. Labor.
2. Food.

### 3. Technology.

**NOTE:** *Information can also be traded in society, as can raw materials (in the above list, both would be listed under "technology").*

The "haves" have control over the food and technology. Someone who goes out and buys technology and food on the commercial market does not have control over these things, they are just consumers of these things. The "haves" have food and technology until they trade it for money, usually. The "haves" own the food and technology, the resources and means of production and distribution, until they trade them, usually for money. In the early 21st century, the "haves" are corporations (and States, which are also corporations).

**NOTE:** *Here, to consume food and technology does not equate to control; control means you produce and distribute it.*

A matrix of the axiomatic forms of trade can be established, such that it is possible to trade (the different trade possibilities):

1. Food for labor.
2. Food for technology.
3. Food for food.
4. Labor for food.
5. Labor for technology.
6. Labor for labor.
7. Technology for food.
8. Technology for technology.
9. Technology for labor.

Forcing a population to have a job in service to each other, in order to meet their life needs/wants, will not likely produce flourishing individuals among a community of flourishing individuals.

Better technologies give fewer people the ability to control resources that another person depends on to survive. There is private ownership and private benefit of resources and technologies that people need to survive and thrive given what is known. In the market-State, people "need" money to survive; money is obtained through jobs. The capital owners (capitalists, businesses) own the jobs. Unless someone has capital to start their own job or you have independent family wealth, then they will have to be dependent on another being to survive in the form of establishing and executing a business-type job relationship. Therefore, there is a dominance hierarchy -- the owner tells the manager what to do, the manager tells the laborer what to do. And, the workers must do what they are told to do, otherwise their money (used for food and fulfillment) will be sacrificed. Someone is on the bottom and someone is on the top. Somebody else owns something that the people who aren't the owners (e.g., the laborers) depend on to live. Effectively, the owner controls the hierarchy.

In an egalitarian society, no one is in a position to

dominate another; there is no structure to enable it. The material and socio-technical conditions are such that no one has the bargaining power and advantage over another (there is no trade or power-over-other relationships). Global access fulfillment is achievable through coordinated contribution to the organizing and ordering of resources and environments common to all. There is no competition in the organized structuring of fulfillment in a society oriented toward the freedom of its population.

There are classes of socio-economic access in the market-State (capitalism), in part, because it is a system of structured competition. It is in the owners interest to earn profit-money, and that orientation (i.e., competition for scarcity) is conflictive against the direct interest of the employee who also wants money, but needs to sell his/her body as work [in exchange for money] to an owner.

In the early 21st century, there are some people who have money and some do not. Hence, those who have the money can buy the labor power of others. By buying someone's labor power the buyer owns the product of the work. And, the buyer can live [better] from the difference of what s/he pays for the labor power and what is got from the product that the buyer of the labor now owns and can sell (for a profit).

Money is nothing more than a materialized dominance (a.k.a., violence) relationship [for the production and distribution of fulfillment]. Because, with the money the labor buyer gets from buying the labor and selling the resulting product, the exploitation is realized in the money. This money is what the early 21st century nations used as a measure for their economies. Yet, fundamentally, the cost price calculation is a form of exploitation.

**INSIGHT:** You cannot live in a society and be free from it.

In the market-State, the needs (and wants) of the demand side (consumers) only count if they can pay for them. Further, what people demand in a market economy is not identical to what they need; instead what people demand is that for which they have the ability to pay or to go into debt for. Then secondarily, it is that which is available for purchase or advertised. The needs of those who, for whatever reason, cannot pay, do not count in a society that produces goods and services for sale. As a result, that which is for sale is not intended to satisfy the whole population of the society.

The primary market-State values are: "want", "property", "profit", and "power-over-others" (Read: security). Further, human fulfillment (as "want"-market and "safety"-State) has garnered a reputation for only functioning effectively (with human needs being met) under market-State conditions. There is the false belief that only when there is property trade and State security protection can there be human need fulfillment, globally.

In the market, the decision as to what, where, how, and for whom goods and services are produced starts

with identification of whether they will sell in the market. The market system cannot measure production based on the actual needs being met. Instead, the availability of money to pay for the goods is used to measure the extent to which demands are being satisfied. And, the ability to turn a profit determines what is produced for whom or whether it is even produced at all. Herein, consumers accept their exclusion from the goods and services they cannot pay for and adjust their demands based their available money (or debt). Producers address these different market classes (market segments) and their need to make a profit by supplying goods of all kinds, from cheap to expensive, from low quality to high quality, and from unhealthy to healthy. Expensive, high quality and healthy products are therefore for the minority who for whatever reason have the ability to pay. Since the privatization of the means of production means that most people are forced to offer their labor on the labor market, the competition among those seeking jobs forces them largely to offer their services to meet the demands of employers. For the employer, the wages and working conditions of the laborers become cost factors, and the hours and intensity with which they work become factors in increasing profitability. In the capitalist production relationship, reducing the workers' share in the product of their labor, extending working hours, lowering the cost of working conditions, and intensifying the amount of effort workers are required to expend becomes a means of private enrichment for those who buy the labor power. In the market, the desire to optimize the cost/benefit ratio does not lead to better fulfillment of the needs of individuals in society, but instead to an increase in the wealth of the minority that owns (or has shares in) the privatized means of production. In this economic order, the living conditions of the majority of society are a means for building private capital and not human freedom. (Lueer, 2018)

*In the market-State (capitalism), only the needs that people are capable of paying for count, and their ability to pay is a result of their role in economic exploitation. The needs of the users and contributors (workers and whole population), something that capitalism fails to acknowledge, are what drive production in community.*

- Adapted from: *Fundamental Principles of Communist Production* (1930:78)

### 3.4.2 Freedom and law

Autonomy is preferable to an authoritarian approach that imposes stringent rules reflecting one person's perspective on what is best. Affording individuals the liberty to be themselves is advisable, provided their behavior remains functional and does not cause harm. Recognizing that some individuals can engage in activities that might be detrimental to others without experiencing dysfunction, it is advantageous to allow them this latitude. The law typically steps in when harm

has occurred between individuals. However, preemptive intervention may itself present problems. It is more beneficial to preserve individual freedom until such a point where a person demonstrates an inability to exercise it responsibly. Upon this occurrence, assistance should be provided to help the individual return to a state of normalcy, followed by observation to assess their well-being.

Essentially, it is much better to not be authoritarian, "heavy handed", and make rules that force everyone to be the way "you" think is best. It is much better to give people freedom to be however they are, as long as they do not become dysfunctional and hurt someone. If someone can stay functional doing something that another would become dysfunctional doing, it is much better to give them the freedom to do it. Therein, law intervenes when one person has hurt another. But, intervening before there is a problem, is a problem itself. It is much better to let people be free right up to the point that they show they cannot handle that freedom. And when they show that, then help them get back to normal (restoration), and then watch them and see how they are doing.

Society ought to help those people that are having problems, and give them counseling and support. And over time most people learn to avoid situations that set them off down a harmful route. And, in community, just like in the market-State, there may be some people who can't control themselves and are persistently violent, they end up in places like people do in the early 21st century, they end up in an institution or prison-like location someplace; because, they cannot control themselves and hence, cannot be trusted to be free in the larger society. And, if society was full of kindness and caring, then there wouldn't be many of these types of people.

If someone isn't hurting another or others, then let people be as eccentric as they desire to be. It's good not to overrun the free will of adults if their free will is not hurting or being negative in any way to themselves or others. This is not, however, true of children. Sometimes parents have to override the free will of children. There will always be cases during parenting where a parent says "no" to the child, for instance, a parent might say to a three year old, "no, I won't allow you to play in the street at 3-years old." Because, at three years old the child just isn't competent enough, isn't paying enough attention to their surroundings, and doesn't have that big a picture, to know that playing in the street can be dangerous to oneself and others. Alternatively, teenagers may be able to play in the street, because they can watch for cars and have more competence around cars and pedestrians.

The parents of children can take decisions for them, because children are incompetent. Though naturally, as they age, children increase in competence (and become less incompetent). Yes, incompetent people may need to have choices made for them, but a normal competent adult ought to be able to have the freedom to make their own choices, even though they may make choices "you"

might not take and might disagree with.

In the case of a child, the parent has to run-over their free-will occasionally. But, as the child gets older, the parent does that less and less, and when the person becomes an adults, the parent doesn't do that at all. Adults should be able to exercise their free will, and as long as it isn't harmful to others, then there is no problem with it. And, if behavior only hurts oneself, society probably ought to say, "that's OK too". In such cases, society might try to just guide and provide support, so that they can be restored (when they choose) to a place where self-destructive tendencies are not present. People who are adults and of sound mind (i.e., adults who do not have dementia, or something similar) ought to be free to have and deal with the consequences of their choices; which, is how they learn. Trying to get rid of the diversity of human interests, passions, lessons, behaviors, and experiences, because one person (or a group of people) judge some of them to be wrong, is probably not such a good idea.

**INSIGHT:** *Having an "I know best" sort of attitude over other adults is both arrogant and ignorant. It is best to be tolerant of other people who are different than you.*

### 3.4.3 Freedom and wage[-labor]

While the violence necessary to appropriate others' labor is openly visible in a slave-owning society, in the market-State this violent relationship is obscured by the wage system. On the surface of a wage-based society, workers' wages appear as the price of labor, a certain quantity of money that is paid for a certain quantity of labor (i.e., trading human effort, labor, for money, or something that is the equivalent of money). The wage structure thus extinguishes every trace of the division of the working day into labor necessary for human fulfillment (Read: necessary labor) and labor required to produce profit for the business owner (Read: surplus labor). Instead, all labor appears as paid labor. The price paid for the labor[-power] and the price at which the product of the work can be sold differ. It is this difference in value that employers (Read: capitalists) see when they buy labor[-power] and set the price they are willing to pay for it. The only difference as compared with traditional slavery is that the laborers seem to be "free" because they are not sold once and for all, but piecemeal by the day, the week, the month, the year; and, because no one owner sells the whole person to another. Instead, individuals are forced to sell themselves. Hence, instead of being the slave of one particular person, wage slaves could be seen as the potential property of the whole employer/capitalist class.

**INSIGHT:** *There is structural violence when individuals among our population have to sell themselves to others to meet their life needs, and with even more violence when the sale leads to the enrichment (greater access fulfillment) of some over others.*

In the market-State, users (consumers) are separated from workers (employees), who are separated from the means of production (employers). The employer/capitalist owns the means of production, while the workers/laborers only have their labor[-power]. Herein, the employer/capitalist owns the conditions under which workers must act (which are regulated by varying degrees by governments). With the "right" to dispose of (sell or waste, subjective/isolated decisioning) the means of production, the employers/capitalists also has the power to dispose of the labor; that is, employers (capitalist class) rule over the workers (labor class).

The separation of the working class from the means of production means that they do not control the products of their labor; instead their productions belong to (i.e., are owned by) the employer. What happens with these products is not the workers' business (i.e., not the decision of the workers); they only have their labor [to decide] to sell in exchange for wages. Working for wages thus reflects the separation of labor from the products of that labor, such that workers have no say about what they produce or how it is produced. Wage labor is the unmistakable sign of the working class's lack of freedom (i.e., the lack of freedom of individuals among our global human population). Those individuals who are forced to work by selling their efforts to another group of people who hold domination control by owning both the systems of production and the products produced in society. The exploitation of workers (i.e., the usage of others for one's own profit) is based on their exclusion from the decisions about the means of their production, the decisions about which productions are usefully valuable, and the process (services) and physical productions (products) themselves.

In a community-type society, all information is representable within a unified information system that supports societal navigation such that global human fulfillment is optimal. Only then will production and distribution not depend on standards set by government committees or profit-based procedures, but will instead be set by the reality of humans having different states of and conditions for fulfillment. Without this unified information and material basis, freedom of individual consent (contribution) remains absent.

A free society consciously decides what, how, and where they want to produce jointly, and thus, how they will deal with different categories and levels of productivity (human) and production (habitat support systems). The human and habitat service system requirements are transparent to all. The potential for optimizing processes is evident to all members of society, whether it comes from better technology, improved workflows, or changes in conditions and levels of contribution. In an economic sense, this explains how more fulfillment (in some cases, more supply) could be attained for all by:

1. Increasing productivity without having to work longer hours.
2. How the same level of demand could be supplied

- with fewer working hours.
3. Increasing productivity without having to degrade working conditions (healthy contribution conditions).
  4. How the same level of demand could be supplied with better working conditions.

In the market-State, the possession of better means of production or skills determines (in part) whether someone has low or high socio-economic access (i.e., is poor or rich). However, in community, the means of production (habitat service support) is used in cooperation with one another as planned from a common basis on which the result of each change in productivity affects each member of society equally.

*"In a cooperative society, human beings are no longer treated as a variable in others' cost-benefit calculations. Reducing workers' share in the social product, extending their working hours, and/or making them work harder no longer improves the bottom line of employers (i.e., those who by their labor-power)".*

- Lueer, 2018, p.45

In community, there is no longer a need push for greater productivity against workers' interest and health in order to enrich the owners of the means of production. The society is literally configured in an entirely different manner. There is no separation in level of fulfillment between the user and the societal InterSystem team. In the market-State there is the economic separation of employer, employee, consumer. In community, the producers (i.e., the InterSystem team members themselves decide on their requirements and working conditions, and thus, the amount of contribution.

The start of freedom is where the requirement for slavery (whole body or money/wage) ends; when this happens then contribution becomes possible and the habitat support service system becomes optimal in sustaining human need fulfillment. To coordinate fulfillment (production) beyond markets, an human-oriented, real-world basis (database) is required. In community that fundamental basis is a matrix of human [fulfillment project] requirements, contribution, material surveys/studies/inquiries, and economic calculation/inquiry.

#### 3.4.4 Community statement on freedom

We as individuals organized into a community with a set of common values seek the empowered self-direction of our own lives and learning, free of interference [by others] and free from contradiction (e.g., noise to signal ratio). More explicitly, we value freedom from oppression, force and coercion, which is not intended to mean freedom from responsibility of decisively conscious behavior. The only selfish interest herein is the desire for self-development and the fulfillment of our purpose, our desires and goals, including creative

self-expression, which are not pursued at the cost or expense of others. Instead, they are pursued to the delight and benefit of others, for individuals that have chosen this direction and value system have necessarily developed an interest in the greatest care-taking and fulfillment of all life. A free society developing toward its higher potential is a society where individuals are not stuck in self-created and socially-manifested limitations of body, thought, relationship, ideology, and so on. A community remains a community when it re-generates structural systems that maintain a state of freedom from [limiting] conditioning.

#### 3.5 Power relationships and coercion

*"They tell you that it is freedom because if they were to tell you that it was slavery you would not have any of it."*

- Anonymous

Compulsion can be fully expressed in a power relation, such as one between a parent and a child. It is a well-known fact that a person who is abused as a child is highly likely repeat the abuse on their own children (or other children), unless they never adopt or are able to overcome the compulsion. But surely this must be true of other power relations as well. The child bully, beaten at home, repeats the compulsion on weaker children. The boss, having some degree of power over others, uses that power to fulfill his compulsions in the form of lies, arbitrary orders, verbal abuse, and so on. The priest, having been molested by his "father" or another male family member, molests young boys in turn. The policeman, taught to humble himself to authority and accept punishment, craves to become authority, in turn, and punish others. And so on and so forth. Some people become more coldly controlling than others - their awareness becomes configured (or conditioned) differently. All social power relations [that involve social control] create the potential for the generational limitation of freedom. Fundamentally, freedom is not the ability to do whatever someone wants at the expense of others.

**INSIGHT:** *There is less freedom when one [person/entity] controls the lives of many others. Service-to-self (as a life orientation) seeks control over others.*

One can be a slave and not know they are enslaved. Slavery is more than just a physical thing, it is also very much a mental thing. Slavery comes in many forms among which include: physical, cultural, generational, and psychological slavery. And, socio-economic systems can structurally reinforce slavery (e.g., wage slavery).

Anytime someone introduces coercion into the equation, anytime someone *threatens force or enforces a policy on another, or a group of people, then that individual is holding humanity back from its potential for getting along non-violently and cooperatively with decisions for*

individual autonomy and freedom. It is inevitable that a society requires some kind of organization and controls, but the organization and controls must originate from a place of intelligent, rational, objective, and responsible interrelationship; they must originate from a place of mutual human fulfillment.

**NOTE:** *The State has ultimate ability to coerce, because it has a monopoly on the ability to detain, arrest, incarcerate, and kill. The State had the ability to inflict violence on the public and the public has, in general, no right to defend itself from the State. The threat of property loss and/or prison time is coercion -- "Do what I say, or else, prison". The threat of bodily harm and/or reduction of movement autonomy, for lack of compliance, is coercion.*

Whenever coercion is discussed it must be discussed with the understanding that social conformity can be an exceptionally subtle and unconscious process - people can believe they are free when in fact they have become fully assimilated [and "conformed into"] a violent society. When someone is enculturated into a coercive society for many years in many forms, then coercion is the social norm, and any discussion of coercion will exist beyond the normative bounds of what the individual in the present society, and authority, defines as coercion. What the present authority does and supports is not coercive, but what the "evil" authority does is.

For instance, when individuals and organizations do not pay their required tax, then authoritarian pedestrians often say that they have "shirked their tax obligation". However, tax isn't really an obligation, it is a violent mandatory behavior. If someone does not pay his/her tax then s/he will have violence done to them; or if someone resists the payment of tax, then violence (often to death) is considered appropriate. If someone does not pay a taxation on life, under certain societal conditions, there is a possibility of loosing one's home and even, one's life. Therein, obligation is a euphemism for an actual monopolization on coercive force/violence.

Government is the ultimate embodiment of authority and of power over others. Government is based on the belief that humanity cannot be trusted with its own freedom. Governments show themselves [in part] by generating the existence of a national state security, protection, and enforcement apparatus - a governmental secrecy and [economic] security system, and a police force for forcing law upon the State's "citizens", the "public". The idea of "plausible deniability" (i.e., the idea of not being able to confirm or deny information) becoming the ultimate form of conceptualized and encoded State secrecy; wherein, freedom loses all meaning. The State is the creation of dominance opportunities. And physiologically, the triggering of individuals' desire to control others can be rigidly compulsive, if not destructive in character. Security is all about intrusion prevention (i.e., preventing intruders). Often, if the trigger/incentive is taken away, then the problem won't exist.

All governmental regimes [in part] control their populations through fear and subtle intimidation; therein, impulses become cultivated rather than consciously corrected. Politicians (i.e., those who take governmental decisions) can easily turn a freedom (which, may or may not have been written down somewhere) from an individual "right" into a conditional bureaucratic dispensation. The support of those in some government (e.g., government aid) is always only one decree away from mandating terms of submission, because it is a system based on submission, or violence.

In general, government exists to be the public's master. Often, "they" who see themselves as "government", in turn, see the "public" as helpless and ineffectual [in creating their own (or any) state of fulfillment] -- the public needs government to protect, and provide for, them -- the public are neither resilient nor self-reliant without government. It is hard to break free from this diminutive paradigm of group thought. Group think freezes individual thought; it abates conscience and curbs the ability to organize a truly fulfilling environment in a cooperative manner. "Herd instinct" (or "consensus trance") keeps people oblivious longer than one might think they would remain oblivious. Groupthink freezes the individual's ability to critically examine a situation. When a society is carried along in collective groupthink, the population risks much.

When individuals stop defining themselves as "citizens" they become less vulnerable to being misled or cowed by the insular scams of a nation state. Herein it is wise to remember that wherever there is power over others there is abuse as a natural consequence. And in competition for survival someone will always want a taste of that power, to which even the kind-of-heart are likely to become seduced. Under market-State incentives, behaviors can easily turn predatory, and those predatory behaviors can quickly become normalized. In government, power is not the will of consciousness to move objects, but the hierarchical "force of arms" and "rule of law" to move objects. Social hierarchy subsumes individual power.

Integrated understanding does not come from coercion or force or violence, it does not come from schooling. Therein, authority brainwashes people away from self-reliance; wherein, personal responsibility is the essence of self-reliance. The methodology of some social systems is to remove individuals from the source of their wisdom and knowledge, their own body intuition, and their own restorative-healing and self-regulation/self-integration processes; instead, those with power want to be the purveyors of knowledge and medicines, and the "public" their supplicant, whom they can give to or withhold from.

Some of those who believe in authority go so far as to say things like, "Violence against you is good and right because you didn't respect the certification of my authority by the larger authority of the club, gang, or government". In general, authoritarian structures use a hierarchy of power over others to maintain control,

and to influence. Yet, societal conflict doesn't have protagonists, certainly not heroes, mostly everyone is a victim -- Hollywood's TV and movie heroes are purely fantasy. The stories individuals are sold by commercial media and government propaganda are not capable of being coherently integrated and are highly conditioning. Commercial experiences are designed (and manufactured) by commercial and other industry interests for the perpetuation of commercial and Statist beliefs and values. Heros are commercial amusements; they generate revenue for commercial interests; they are de-contextualized and fantastical creations that subtly reinforce and normalize aberrations and unrealities; they are distortions; and they are often conditioned into children through fairy tale narratives. They are not the teachers or the idols of the intellectually liberated. They are the protagonist contestants in an amusing and visually dramatic game. They are the soldiers with PTSD. They are the gang members. They are the maimed and injured operatives. They are the traumatized and unrestored. They are not leaders, they are victims; and, their integrated learnings will help everyone evolve.

What is the meaning of freedom in someone's life, when freedom means, "free under government"? Therein, choices are generally limited to 'exploiter' or 'exploited'. The adoption and the acceptance of exploitation leads to the impoverishment of the lives of all.

Herein, freedom (or liberty) is the absence of impositions from any exterior determinism, it is what some might call "negative rights," freedom from coercion. In a "free society", all organizations and objectives must be cooperatively determined by the individuals involved. There are many different ways to derive liberty: from the disproof of transferring exterior obligation (being impossible for an exterior determinism to impose any moral obligation), from the need for free will (in order to be able to act on one's values in a decision space), from the premise of equality (because coercion necessarily entails that one person's fulfillment is exploited for the sake of another's), and so on.

That which is being discussed here is not freedom of constant opting among infinite alternatives for self-gratification or the voting in of the next politician who professes [quite hypnotically] Hope & Change, but a freedom of a social evolutionary continuum in which persons have the freedom to cooperatively interrelate for the fulfillment of everyone's needs. When aberrant socio-economic conditioning dissipates, then intelligence may appear as the natural capacity to maintain environments where individuals exercise higher potential state-dynamics of free choice in all aspects of their personal and social lives. What is the meaning of the word "hope" when individuals realize that it is their intention and effortful action to improve their condition that actually has an positive effect on the world. In a sense, hope is for the entitled and disenfranchised, not for those with a sense of self-sufficiency and self-empowerment. Which is [in part] why it works so well as a slogan for the election of leaders in some States societies.

In between stimulus and response there is a space for processing and for questioning, for inquiry into higher potential states of existence. Who is not free, who does not have a processing space between input and response? Enforcers and other soldiers do not. Those people who give and receive and follow orders. Soldiers have to essentially arrest this natural thinking ability in order to fulfill their "duty". When this self-reflexive questioning process is removed, when conscience is removed, then individuals are turned into collective, programmed input to output machines for the purposes and agendas of "leaders" and other authority, power wielding figures.

Freedom represents a lack of authoritarian constraint, whether those constraints be the internalized policeman generating neuroses or external policemen generating psychoses. Yet, fear is the ultimate constraint. A fulfilled individual lives a life without F.E.A.R. (False Evidence Appearing Real). It is ironic that some societies find it acceptable to express their love and desire for freedom when the individual surrenders theirs to join that society. The idea of "patriotism" is the epitomization of the surrendering of freedom to an [ideal] authority.

*"It is dangerous to be right when the government is wrong."*

- Voltaire. The above quote could be redirected toward the market, "*It is dangerous to have an abundance of solutions when business has an abundance of products.*"

This is what social control is all about: giving people a stimulus or input and waiting for them to regurgitate an automatic or pre-conceived response, a memorized and patterned response, a strategically planned and conditioned response (e.g., problem-reaction-solution, problem-agitate-solution). The very purpose of school is to create a uniformed pattern of response to authority -- that is and was its intended design. What most people in early 21st century society don't have is that intermediate lifeground, the logical stage of figuring it out for oneself rather than taking the word of authority and responding through triggered attitudes and pre-determined narratives.

There is an implied agreement when individuals with conscience come together as a group that they will "not punch each other in the face" (i.e., not intentionally inflict suffering on one another); yet some societies codify that agreement and create a social/ethical obligation not to violate it: "I surrender my freedom to punch you in the face and create [authority as] a "rule of law" to punish you if you punch me in the face (as legalized consequence). I surrender my freedom out of fear of getting punched in the face."

The concept of "law" allows for the monopolization of conflict by a single entity, generally known as government, or the State. Government exists to assume power from individual consciousness ("farming individuals"), and it does so by monopolization of violence and conflict. In the State, everything exists only with the permission and

the behest of the State. Many authoritarians (as those who believe in authority) then go on to claim that people are too stupid, broken, and violent to fulfill and care-take themselves -- they actually require authority, they have a need for authority ... because they are broken ... or because of the gang next door. Early 21st century society is structured in order to exploit the product of and to reinforce the "maladaptive fallacy". The maladaptive fallacy is the assumption that humankind is flawed, evil, and broken. In order to correct that "pathology", early 21st century society has socio-technical organizations such as, the military, the police, the government, the psychologists, the professors, the politicians, the priests, the charities, the businesses, and their ilk, whose purpose is [in part] to reinforce the belief that humanity is flawed.

One cannot ever be exercising conscience if they are following orders, which are always based on duty to authority. The two things are antithetical to each other. Following orders does not involve a wilfully active process of inquiry and participation, the self has been abdicated. An order follower becomes engaged in the monopoly of violence perpetrated by the belief in authority; s/he becomes engaged in re-generating the very structure that creates a state of un-/dis-satisfaction with life. This is why an order giver (or "controller"), desires to own the mind of the follower; s/he needs to have influence over the thoughts of another person and maintain that influence so that they reciprocally own their behavior. And, this is [in part] why some people could very easily come to the conclusion that the term "government" actually means "to govern the mind" (*govern ["to control"] + the Latin mente ["mind"] = to control the mind*); though the etymology of the word might indicate another conceptual understanding. Regardless of the word's recognized etymology, in its practice, the orders that are dutifully carried out by those who believe in authority and in government are done so through a form of mind control.

Some people appear to be looking for a master to give them permission to be free. These people are no closer to being free than a slave who has been purchased by a more gentle slave master, one who doesn't work him as hard and gives him more choice. The slave is literally no closer to being free, even if his / her daily life is more comfortable and s/he feels like s/he has more freedom. The underlying lie still exists - that s/he is the property of someone else. As long as the belief in authority remains, then an individual is no closer to being free. For example, someone who lives under the domination of a less violent State and believes in their State's form of governance may be more comfortable on an emotional and practical level, but they are no closer to being free. In a sense, they are farther away from the expressed manifestation of freedom because the more painful a forced and coerced experience becomes, the more likely someone is apt to consider that the whole system is a joke. The slave who understands that s/he is not the property of anyone else is more free than

the slave who is owned by a nice master and has yet to recognize the truth of who they are.

**INSIGHT:** *Legal freedom does not equal freedom [in a community-type society]. In other words, a legal freedom is not a freedom; it is a privilege given from authority. The authority is the law, which gives the right of freedom that it will not use its monopoly on violence in a given situation.*

### 3.5.1 Freedom isn't free

One of the slogans of "Big Brother" in George Orwell's novel entitled Nineteen Eighty-Four was "Freedom is slavery". People in early 21st century society really need to examine what they think "freedom" means, because it might not mean what they think it means. Take the slogan "Freedom isn't Free", for example. It is used as war propaganda in early 21st century society. War propaganda has been around as long as wars themselves and those in power use slogans to invoke a sense of duty and bravery in soldiers. Such slogans appeal to a sense of pride and patriotism, signaling them that it is their time to step up and become part of something bigger. In plain words, they are used to convince "citizens" to obey orders without questioning. In truth, freedom was always free. Only warmongers have put a deadly price on it. The "Freedom isn't Free" meme is classic and tragic Orwellian language. It is effectively saying, "Freedom requires you to give up freedoms." Is there a more classic "Newspeak" than that? George Orwell once said, "But if thought corrupts language, language can also corrupt thought." In some cultures warring against a supposed menace gives people purpose in an otherwise purposeless society. Many people [in a socio-economic state of perpetual competition] don't know what to do with their lives when they aren't fighting an "enemy". They need to desperately believe that the others continue to be a threat to them for it gives them purpose and a "spirit of community" cohesion. In reality, war is about resources and the defense of power-based ideologies and it revolves around the belief that "there isn't enough to go around". Often, war is a geopolitical strategy power-play for industry. Therein, the 'state of war' is the 'state of terror' [against human fulfillment]. Herein, we must ask of those warring against "terrorism", are you having a war on the consequences of the actions you are engaged in? Is it fulfilling to have a war on an abstraction; one that will be eternal and pointless? The marketing campaign around "terrorism" is designed to bring out your instincts of protection and reciprocal social obligation. Here, terrorism is the act of scaring a populace into making a favorable political choice. Terrorism is seeking to change political power through violence. Terroristic behavior may be defined as someone who uses the threat of violence to manipulate others with fear. In other words, terrorism is the use of violence to induce fear in people in order to get them to conform. Yet, a strict definition of terrorism includes the characteristic that it is applied to influence government (policy). Now,

consider how government uses the threat of violence [as law] to "organize" society. Yet, the authority will always claim that terrorism is what the enemy does; when "we" do it, it is "heroic action". If terrorism is a political action, then what about a society that doesn't have a political/governmental system? The moment we start thinking of other humans as the enemy is the moment we start tearing each other apart and doing the terrorists work for them. One could use a dog with fleas analogy here. The fleas on the dog do damage, there is no question. But often it is the dog itself scratching and biting to try and get rid of the flea infestation that does the real damage.

*Terrorism is the war of the poor, and war is the terrorism of the rich.*

- Peter Ustinov

### 3.5.2 Security contradicts freedom

*"They who can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety."*

- Benjamin Franklin

It is relevant to note herein that 'security' [wherein secrecy is an inherent characteristic] is not equivalent to 'freedom'. The "state of security" does not equal the "state of freedom" - they are not congruent values. Security (and secrecy) is a force with the characteristics of secrecy, restriction and power-over. Conversely, freedom is a force of expansion; particularly for the expansion of more informed and self-expressive choice. When a group of individuals focus on security, then freedom will likely become hard to maintain because of the advancing restriction of liberties (or "personal freedoms") to maintain the State (or condition) of security, of restriction. Hence, security and freedom are an example of conflicting values. To quote the assassinated U.S. of A. president John F. Kennedy,

*"The very word secrecy is repugnant in a free and open society."*

It is a linguistic trick to refer to a society as "stable" when change and adaptation are prevented from occurring through secrecy and security. Such a society is a parody of a truly stable society where identification, connection, reason, mutual relationships, and morality are the fostered norm. The choice between fulfillment and security is no choice at all. The engineering of a loss of individuality for the existence of security, and hence, a divergence from nature, will not produce a society where people live "happily ever after"; instead, it is likely to produce disassociated persons who believe in and are conditioned by fairy tales. When change becomes a menace to a supposed "stability", then there was no real stability to begin with. Dis-continuity and dis-integration are what shape a secretly secure environment.

People don't know how much they don't know about

something when the socio-economic system as a whole is structured to be a secret, or the incentives are structured around secrecy. The perception that secrecy and security create value leads to the organization of systems and the selection of decisions that are not aligned with a dynamically informed environment - they shut off the feedback mechanism and prevent adaptive evolution. Even implying the existence of a secret can cause problems among society.

Secrecy is opposed to transparency by its nature. Secrecy is a powerful tool of control. Essentially, "to secret" means to (Read: one of its principal characteristic is) limit the number of people with information or people with the ability to impact something. It is a form of restriction that propagates authoritarian rules about the nature of reality without free thought, it conditions a belief about the optimal way of operating within reality while reducing the ability to affect and participate with ones' environment.

Secrecy eventually becomes surveillance, the panopticon (an architectural design by Jeremy Bentham). The term, panopticon, is a noun, *pan* "all" + *optikon* "of or for sight" - a circular prison with cells so constructed that the prisoners can be observed at all times, both by the guards and by other prisoners. In Greek, panoptos means "seen by all". The center guard-observation tower could be darkened inside so that the prisoners never knew when they were being watched by the guards. The whole point of the panopticon is that "you" never know when "you" are being watched so that "you" internalize the policeman. In a panopticon the prisoners can see each other, and so, they begin "watching" themselves [to see who misbehaves]. It is a pathway to eternal self-destabilization -- "carry your own inquisitor with you at all times".

*"The only way you can have perfect security is to have total surveillance."*

- George Orwell, 1984

In *"Discipline & Punish: The Birth of the Prison"*, Michel Foucault (1979) notes that the structure of the Panopticon reflects the optimization of homogeneous power through surveillance. The principle which Foucault is trying to illustrate therein is that the architecture may become an apparatus for creating and sustaining a power relationship independent of the person who operates it. In other words, it is the architectural form of the panopticon which helps to engender a form of social control (Leach 1999:120), and this confinement structure can help to fulfill this social control by a coercive power. Therein, when the guard tower is dark, then surveillance is always possible, but never verifiable. The guard(s) can always see the prisoners, but the prisoners cannot see the guard. On a value-neutral sense a panopticon prison is a tremendously useful setup for the guards of a prison. But, it is not only a way to design a prison. Foucault asks rhetorically, "Is it surprising that prisons resemble factories, schools, barracks, hospitals, which all resemble prisons?" (Foucault, 1979, 228) For Foucault

and Bentham, social control through architecture can be generalized to different areas of society.

Here are few examples where normalization is applied into confined places:

**Table 19.** Table shows the relationship between market-State institutions and control of persons and societal elements.

Institution	Biopolitic/Biopower
Hospital	Control of health
Prison	Control of behavior
School	Control of ideology
Factory	Control of work
State	Control of law and law enforcement
Bank	Control of money
Business	Control of production

A security State may prefer the ease of governing a population that polices itself (i.e., adopts an authoritarian conscience). Early 21st century society is engineered to have people internalize the control on their own. Compulsory schooling facilitates the conditioning and then there are prisons to lock people away and make money off of those who still don't internalize the control. Herein one might come to realize that the statement, "I'm always on duty" is a symptomatic reflection of having full internalized authority in place of freedom. Human freedom is not found in duty to authority, but in duty to oneself and all of humanity.

**INSIGHT:** Victory and sacrifice are two sides of the same ruinous coin.

It is the height of naiveté to think that once collected, useful information for competitive advantage won't be used. In a state of competition, if "you" have the advantage, "you" change the rules to give "you[rself]" more advantage. That is the nature of secret government organizations. By "any means necessary ... to gain and hold advantage", or so the saying goes. It must be asked, if technology can be an engine of surveillance, then who has the privilege of turning on and off monitoring devices in society? And then, one might have to admit that at least, in part, 'security infrastructures' are a [marketable] hedge against human conscience and represent a reduction in freedom in-kind. Secrecy allows those who would abuse power to secretly influence outcomes, and to gain even more advantage; wherein, the most advantage can be gained by changing the rules themselves to ones own advantage.

Can it not be said that people are more free when they have more accurate information? Individuals are more free if they know what their devices are doing, and that they are not betraying them to an authority. Individuals are more free if they know the truth of the [real] world. Individuals are more free if they can access the science already funded, which would be accessible and evolvable/adaptable by the social population if the

materialization of an abstraction, [ownership + authority] no longer ruled society.

Fundamentally, one can't predict among a significantly large population who will have the idea that benefits everyone. All must have access to humanity's understandings of the world and all must have access to a system designed to facilitate their participation in the evolution of societal understandings and systems. Anybody and everybody has genius in them; everybody has potential that deserves nourishment. In early 21st century society, however, information sharing is antagonistic to profit, to "rights" of ownership, and to security and secrecy services in general.

*"None are more hopelessly enslaved than those who believe they are free." Or, "Those most helplessly enslaved are those who believe they are free."*

- Goethe

The only thing information wants is for humans to stop anthropomorphizing it. Information is neutral. Information wants nothing, but people want to be free. And, for people to be truly free they need access to accurate information about themselves and the systems that they use. A society rates low on the fulfillment scale when channels of information are "closed", controlled, or manipulable by only a few people, and also, when "citizens" have to accept what they are told [by the authority].

Humanity can choose to create and use technology that makes it more free, or technology that takes away freedom. Humanity can choose to create and use systems that are more open, or it can choose to use systems that serve a few at others expense.

Humanity uses technology to organize, but it has to organize to keep the technology "free" in a larger system that values security. When John Gilmore said that the Internet interprets censorship and routes around it he didn't mean that it had a magical anti-censorship component, he meant that intelligent people who use the internet will take affirmative steps to make it harder to censor. Any system can go wrong, and a population needs a way to either reform it or disconnect from it and generate a new system. Security removes that freedom for adaptation and action by concealing information and thwarting actions that may be used for the free, self-directed evolution of individuals. And yet, [open cryptographic] security is necessary for freedom within the State of security represented by an authority.

Freedom is eroded without trust in the system that maintains the coordinated organization of one's freedom in a social environment. And what greater disintegrator of trust is there than that of secrecy. Secrecy rapidly erodes trust. Is there a circle of suspicion or is there a cooperative system of trust in "your" society? A climate of fear breeds a state of silence; and, a state of silence feeds denouncers. A denouncer is someone who will report (i.e., denounce) "you" to an authority.

Occulting knowledge can quite easily create a power

differential. Therein, when knowledge can be "gained and owned" it establishes a mechanism for power acquisition. Systems that divide the concept of 'power' [from the individual] will maintain the characteristic of competition over resources, and of persistence in scarcity [for competitive advantage]. In competition it is useful to dis-advantage a competitor. Competition over resources leads to uncertainty and results in impulsive and irrational behaviours that further fragment an individual's self-directed power to affect and change their environment. When self-direction is derailed then learning is de-railed, and hence, adaptation is artificially limited (i.e., freedom is reduced). Herein, it is important to recognize that malicious intent at a social level often requires *secrecy, deceit, and social power*.

One of the larger problems facing human civilization, it might seem, is, 'impulsiveness' - a focus on short-term goals, at the expense of what might be best for in the long run (i.e., strategically). This is another evolutionarily widespread trait—many animals appear to show impulsive behaviour [given a set of environmental dynamics]. Impulsiveness is not necessarily 'irrational' from an individual's point of view, but often, it can create problems for future generations - there are a probable pattern of consequences to decisions; and in competition, those consequences risk a species future fulfillment.

How anyone in their right mind could ever rationalize that a balanced, peaceful, aesthetic, sustainable, and meaningful world could ever come out of open competition, and hence open warfare—from individuals competing against each other for work, to businesses battling each other for market share, to governments competing against each other for economic dominance (which is the unstated purpose of every intelligence service), has quite an odd view. Such a society will manifest as protectionist and warlike, and appear to any objective observer to maintain a security-based orientation. A competition-based socio-economic system is a paralysing and detachment promoting system of selfish-serving agendas which generates parasites and prostitutes.

When individuals are little kids, they might first learn about secrets through, say, keeping a birthday present as a surprise; and it might feel fun and exhilarating; but as individuals develop complexity, and their lives become more complicated, so to do their secrets, and secrets become not quite as fun. Secrets wiggle their way into psyches and socio-economic systems. They dissolve trust in oneself and in ones social relationships. Under conditions of competition between individuals (in the market), secrets are power; to grant/share a secret to someone is to give them power over you.

What might science have to tell humanity about big, damaging secrets that might be held on to, and that eat individuals from the inside out, maybe for years? A study published in the *International Journal of Behavioral Development* by Anita Kelly (1999) found that young

adults who admitted to keeping a secret had lower levels of self-control, prior levels of loneliness and depression, and their personal relationships were compromised. The researchers checked back in with them six months later and those who had revealed their secrets showed a dramatic improvement in "symptoms". The study found that the women were more likely than the men to have secrets, and that they were also less likely to share them. (Kelly et al., 1999)

Also, a study published in the *Journal of Social Psychology and Personality Science* found that secrets actually feel physically burdensome; such as when people talk about "having baggage" or "feeling heavy". People who were given the opportunity to tell their secret felt no such burden. Also, people in the study who were told to focus on a personal secret judged the hills of a landscape to be steeper and distances to be longer than they actually were. (Slepian, 2013)

One way or another human brains usually find ways to purge themselves of distressing secrets, which could be, for some, through the manifestation of physical maladies. It is cognitively difficult to suppress secrets due to a mental process known as 'ironic monitoring', which promotes sensitivity to unwanted thought. The process of 'ironic monitoring' subconsciously surveys for unwanted thoughts (mental energy drains, open loops, and contradictions), eventually bringing them bubbling to the surface where they become a part of the intentional operating process, which is conscious awareness. (Wegner, 1994) In other words, secrets will continuously "haunt" someone until the dissonance they create is resolved. Keeping secrets feels like crap and it creates a crap society.

Not having cognitive closure makes some people very uncomfortable. It is destabilizing to people to different degrees and over time.

**NOTE:** Under the state of authority someone's dissent is likely to be pathologized. Consider "drapetomania". Drapetomania was a conjectural mental illness that, in 1851, an American physician hypothesized as the cause of enslaved Africans fleeing captivity. [[en.wikipedia.org](https://en.wikipedia.org/)].

### 3.6 Freedom from disease

**INSIGHT:** Dis-ease is likely to manifest when freedom dissipates.

Beings who are unwell and have an awareness of such generally have a deep desire to be dis-ease free, to have physical well-being. Disease might be understood as a deviation from the optimal functioning of an organism's systems as pertaining to a given species. Therefore, health is freedom from (or the absence of) disease. For instance, "freedom from malnutrition" and "being free from malaria" need not be taken as sophist rhetoric; there is a very real sense in which the freedom to live the way one would like is enhanced by [or even exists because

of organization that usefully transcends epidemiological and economic environments to support in maintaining healthy human organisms. Sophistry is the presentation of an invalid argument in an emotionally compelling manner. Sophistry might involve unconscious biases and irrational preferences, or it might be intentional.

When an interaction involves a relationship with that which factually exists, then an individual simply does not have absolute freedom or infinite want. Phenomenological, material nature is a "hard" and truthful restraining force. Wherein, nature can be discovered and individuals can use their discoveries of it to create the life they desire -- a life of freedom from unwanted dis-ease (and suffering) within the emergently known bounds of [technical] reality. Fundamentally, there is no such thing as "being free from nature" - to be free from nature is to be free from that which creates (or allows) existence. To maintain a value orientation of 'freedom' that is out of alignment with nature, and then apply that orientation to the operation of a global economy has become increasingly catastrophic to human health and dangerous to sustainability on planet Earth. The integrity of any social and economic model is best measured by how well aligned it is with the known, "governing" laws of nature [and not the external social "governing" by others].

*"In any point of this grand enterprise called society if it is not about nourishing human freedom in the most fundamental and meaningful sense [then it is not aligned with any meaningful direction]."*

- Graham Hancock in documentary "Freedom" by Pieter-Jan Ardies

Organisms that exist in a state of chronic stress are not healthy, and systems that innately generate chronic states of dis-ease are not freedom facilitating (or "free living") environments. Hierarchical social power arrangements (i.e., social governance) are an example of an environment that innately generates states of disease in a given population. Biologists Robert Sapolsky (2004) and Lisa Share followed a troop of wild baboons in Kenya (the KeeKorok baboon troop) for over 20 years, starting in 1978. Their initial research found that the aggressive hierarchical social arrangement of the baboons lead to the appearance of stress markers, such as increased heart rate and higher blood pressure, and eventually, stress related diseases in those baboons of a lower rank in the social order. Therein, high status males would violently lash out at females and lower status males. The initial results of the research indicated that in the baboons' society, ranking played a determinant role in the level of stress hormones in a baboon's biological system - the higher the rank, the less indication of stress and related disease. Robert Sapolsky states,

*"Primates are super smart and organized just enough to devote their free time to being miserable to each other and stressing each other"*

*out. But if you get chronically, psychosocially stressed, you're going to compromise your health. So, essentially, we've evolved to be smart enough to make ourselves sick."*

The oppression from hierarchy has a direct bio-physiological effect on the body. One of the scientifically studied effects of the experience of oppression (i.e., social rule by another) is the suppression of the immune system. And, the immune system is an organism's greatest protection against the biggest dis-ease killers, whether they be heart disease and cancer in the developed world or infectious diseases in the developing world. The immune system quickly becomes suppressed through psycho-social [structural] stress, through the suppression of the self within a dominance hierarchy -- how someone feels with regards to their life, their boss", the economy, the social environment, and in the nuclear family all have a direct effect on one's health and one's probable lifespan.

In his book "A Primate's Memoir", Sapolsky (2012) details his study of the activities and lifestyle of the KeeKorok troop of baboons in Kenya where explores the relationship between stress and disease. The book describes how in typical baboon fashion, the males behaved badly, angling either to assume or maintain dominance with higher ranking males, or engaging in bloody battles with lower ranking males, which often tried to overthrow the top baboon by striking tentative alliances with fellow underlings. Females were often harassed and attacked. Internecine feuds were routine.

Through an unexpected twist of fate while Sapolsky was studying the group, most of the aggressively hierarchical males (i.e., alpha males) were wiped out due to the consumption of pathogenically contaminated trash (contaminated with TB). The death of the males drastically changed the gender composition of the troop, more than doubling the ratio of females to males (Read: a reduction in the scarcity of sexual partners). The death of the "enforcers" (i.e., alpha males) also led to a change in the social-orientation of the remaining males. And, by 1986 the troop's behavior had changed considerably - males had become significantly less aggressive; and, a latter analysis of their blood work in 1993 found that males lacked the distinctive physiological markers of stress, such as elevated levels of stress-induced hormones [which were present in the control group]. Also, Sapolsky (et al., 2011) found that when males came in from neighbouring troops they were "taught" and adopted the new "chilled out" lifestyle. Essentially, they adapted to the lack of enforcers with a more cooperative culture that has persisted years later.

As a final note on the subject of freedom from disease, it is important to recognize that some deficiencies in fulfillment (e.g., sufficient nutrition) coupled with pseudo-satisfaction (e.g., food additives) create cravings and addictions that are extremely difficult to deny. And, when these cravings and addictions are coupled with a socially competitive hierarchy it is no wonder that greed

and ignorance and perversion are rampant in early 21st century society.

Yet, how terrible would it be if the body didn't give consciousness signals (cues) as to what is needed to acquire, and, when to acquire it. When individuals truly free themselves, then they may find that they also free themselves from the cravings that control them.

### 3.7 Self-organization

Freedom at the conceptual level of understanding represents the essential property of life itself, which is at least consciousness embodied within biological self-causation. The ability to self-organize is the strongest form of system resilience. When identity is applied to action there becomes causality and probability. Since biological action is a self-initiated goal orientated response (SIGOR) to environmental stimulus and challenge, such action ought not to be predetermined by any extrinsic cause. Any extrinsic cause, such as force, coercion, (e.g., extrinsic motivation) and even structural violence, would be [experienced as] a violation of self-generated action and could only be detrimental to healthy living processes. Fundamentally, motility is a self-initiated effort (e.g., volition), and the motility of a living organism is a self-initiated goal orientated action (SIGA); wherein, volition starts with self-causation, a violation of which starts with the fear of authority. Motility is the end result, not the cause. Only a living entity can have goals or can originate them. And it is only a living organism that has the capacity for self-generated, goal-directed action. On the physical level, the functions of all living organisms, from the simplest to the most complex—from the nutritive function in the single cell of an amoeba to the blood circulation in the body of a man—are actions generated by the organism itself and directed to a single goal: the maintenance of the organism's life.

Consciousness, as well as biology ("as within, so without") is observed as a sequence of discrete self-initiated goal-oriented system responses (SIGOR) to events. Therein, consciousness is the experience of a dynamic state of existence in a common reality system through its own self-instrumentation. A crucial difference between a cell (including but not limited to a neuron) and a transistor on a silicon chip is that the former arrangement of matter can autonomously and adaptively modify itself in response to its circumstances, whereas the latter cannot. An everyday example of this biological capacity is provided by the healing response: a damaged organism can often stem the loss of precious bodily fluids, stitch itself up, and (with some scar perhaps) continue living. All individuals witness this capacity regularly in their own bodies.

Freedom [within a decision space] is a property of conscious life. Life is an emergent phenomenon and as such it possesses new properties (notably, a decision space) that its precursors do not have.

Being responsible for one's choices is the first cause of those choices, where first cause means that there is

no antecedent cause of that cause. The argument, then, is that if consciousness is free [by degree] (i.e., has free will), then consciousness is the ultimate cause of its actions. If determinism (as a paradigm) is true, then all of the choices of consciousness are caused by events and facts outside its control (i.e., there is no decision space for consciousness). So, if everything consciousness does is caused by events and facts outside its control, then it cannot be the ultimate cause of its actions. Therefore, it cannot have free will; it does not have a decision space, and hence, there is no integration, and essentially, no learning.

In their book "Biological Self-organization" Camazine (et al., 2003: 8) define self-organization as:

*"A process in which pattern at the global level of a system emerges solely from numerous interactions among the lower level components of the system. Moreover the rules specifying interactions among the system's components are executed using only local information, without reference to the global pattern. In short pattern is an emergent property of the system rather than being imposed on the system by an external ordering influence. ... The system has properties that are emergent, if they are not intrinsically found within any of the parts, and exist only at a higher level of description ..."*

From this definition it follows that:

1. A process of self-organization may have probabilistic antecedent events (or "causes"), but cannot be absolutely determined by antecedent cause. Life is a self-sustained and self-organized process, and it does not have an efficient cause; life is self-causation. Any interaction of a living entity with its environment is a self-initiated, goal-orientated response (SIGOR). Note: This explains [in part] why 'conditioning' versus facilitation of intrinsic motivation and access to knowledge and tools can be so harmful to an individual.
2. The emergent properties of a system are different from the properties of its components, and therefore, cannot be explained by means of reductionism (Read: principles of lower-level organization are not sufficient as explanations for higher-level [systems] structures).

In other words, the properties of a system may be probabilistically described by prior events in the system, which can be calculated; and, an understanding of the properties of the system comes from exploration of the system as a whole. Antecedent practice lays down physical neural pathways fostering later habitual actions (as probabilistic affects). However, the final and perpetuating properties can only be understood by looking at the emergence of the system as a whole.

Antecedent events (or causality) have a probabilistic effect on the next iterative decision [space] of an embodied consciousness - they may be said to play a principal role in determining a decision space, but they do not determine a final decision.

Emergent properties cannot be reduced to the properties of parts, by definition. Take for example two halves of a rubber bouncy ball. None of them can roll. But if you put them together you will get an emergent property of rolling. No inanimate object appears to have a property of self-initiated goal orientated action (SIGA), let alone consciousness and or an effector (Read: something which initiates an effect on the environment around it). This applies, as well, to the very complex macromolecules which are the building blocks of living organisms. However, the process of their self-organization created a living organisms with such emergent properties. It would be a useless exercise to try and explain SIGA at a molecular level for material embodied life [appears to] start at the level of cell. Living organisms "act" and are not usefully "acted upon". In the words of Robert Rosen, they are systems which are closed to antecedent cause. Unlike inanimate objects they are driven by self-causation.

Living systems are open self-organizing living things that interact with their environment. These systems are maintained by flows of information, energy, and matter. Life is self-organizing, self-regulated material structure, which is able to produce self-generated goal orientated action (SIGA) when the goal is preservation and betterment of itself. This emergent identity, which is applied to biotic action and conscious decisioning, defines a type of causation known as 'self-causation'. Note herein, the self is the cause, the self is not property (Read: "self-ownership" is social construct). All levels of living action, from a cell's protein-synthesis to a scientist's investigations, are goal-directed. In vegetative action, past instances of the "final cause" act as "efficient cause".

This is the mechanism of self-causation. Now, it is clear why any action imposed on the organism and driven by antecedent cause (the claim of an absolute decision without space [as in, authority]) could only be detrimental - it inevitably would interfere with the self-generated action of the organism. Each and every organism is its own "primary mover". In the low organisms the degree of freedom of action (or "decision space") is limited by their genetic set up. However, even low organisms like fungi, for example, have been shown to be capable of overcoming this genetic determinism. Rand (1964) observed,

Note here that an embodied organism has to initiate goal-orientated action in order to obtain energy for its self-sustainment: plants turn their leaves toward the sun to optimize photosynthesis, lions hunt prey, and humans use their minds in the creation of tools. In other words, in order to get energy an organism has to spend energy first. Fundamentally, we must have a means as life to continue on as life. Life through means of life to more life.

SIGOR is limited by an organism's perceptual ability and capacity to process (or compute) sensory input, and hence, inform and otherwise structure its decision space. The process of evolution is a process of development of these qualities, since an organism's survival principally depends on them. More freedom of action means a better chance of survival. The consequence of the evolutionary process is self-awareness and free will within the embodied form. Free will is an expression of self-causation at a conceptual level.

SIGOR exists at every level of lifeform organization, from viruses to humans. Its essential "featured" manifestation is the ability to project goals into the future and to act to achieve them. This is a mechanism of conscious-biological self-causation. At the "preconscious" level, organisms use pre-programmed codes (DNA and others) for this purpose, but at a conceptual level, the 'mind' is the tool. At the conceptual level, self-initiated, goal-orientated action becomes volitional - that is, by using concepts the mind is able to arrive at decisions about goals (or rather, purposes). Desire is a goal, projected into the future which is chosen according to the needs of the embodied consciousness. Freedom (or free will) is an attribute of consciousness, which is developed from the very basic property of a living being - the ability to project goals and to initiate an action to achieve them. A living entity is not a mechanism, nor is mind a computer. Fitch (2008) observed,

It is not difficult to see that Fitch's nano-intentionality is what is more commonly called SIGOR, and that is what is perceived as a living organism. Mind and consciousness is a self-regulated, self-organized, and self-caused entity. It is an attribute of the living entity-human being, and as such it doesn't have any efficient cause. The ethical consequence of this biological fact and philosophical principle is the principle of the non-initiation of coercive force (i.e., there is no such thing as authority over another; there is no such thing a "governance" beyond the governance of nature). Consciousness is the essence of life's existence and cannot be separated from it, as one cannot separate from a plant its ability to turn its leaves to the light. Any attempt of application of antecedent cause, a force of external control (Read: the negation of autonomy), on mind will be a hindrance, will impede its functions or stop it altogether. The initiation of force, therefore, is an act that prevents humankind from living in alignment with nature, living freely, or living at all.

**INSIGHT:** *Morality is composed, in part, of a social allowance for others to choose goals for themselves.*

## 4 Justice

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*A.k.a., Effective fulfilment, restorative justice, distributive justice, participatory justice.*

Words have significance beyond their literal meaning and use in native speech. Perhaps there are words whose meaning have a greater influence on the arrangement and interrelationships of persons within a society than other words. Perhaps the word "justice" is one of them. It would seem that throughout history the meaning ascribed to the word "justice" has always been an organizing and coordinating concept of societies. One might hope that a term so crucial to the orientation of society would have some association to the empirical well-being of individuals among a more encompassing ecology, as well as providing alignment with a meaningfully fulfilled life direction. One would hope that it would have some objective physical referent, and was not abstracted from the socio-economic and lifeground context from which it derives its meaning.

The market-State views justice differently than does community, typically. In the context of the market, justice becomes easily viewed of as a "debt" to be re-paid with hardship and/or some degree of engagement. Where a debt is decreed owed by the State, it is possible to put another (i.e., make the cost/outcome of the behavior/action) the financial harm to someone else and/or their property; because they owe a "debt". If you cannot pay that debt with the money you have, then you must work to pay them (very much like indentured servitude or wage slavery). In the context of the State, justice becomes a "debt" to be re-paid with hardship and/or some degree of engagement; a debt owed to the authority. You live through, and probably work through, the authority, and/or you are caged for a period of time, and the debt is "paid" through your isolation from society and low-pay labor (enforced hardship pay) from the State.

In general, however, justice can be likened to a sophisticated navigation system that is constantly evaluating its alignment with a predetermined route, conceptualized by societal values and principles. When an action causes a deviation from this moral path—akin to a dis-alignment in navigation—justice intervenes as a corrective mechanism, assessing the degree of deviation and implementing measures to recalibrate the course. It involves a continuous process of checking with standards and updating standards, so that the community's collective moral compass is upheld, ensuring that any necessary adjustments are made to maintain or return to the rightful direction. In this way, justice is conceived of as an evaluation of alignment, ensuring human fulfillment and well-being are upheld, and where there is harm, that well-being is restored. Justice may be viewed as a re-alignment response when there is, or has been, dis-alignment from optimal. For instance, justice is, in part, checking that the values are being upheld. In concern to the metaphor of a social system being a system for societal navigation, there is

(1) a direction, (2) an alignment on or off that direction, and (3) an approach to thinking about adjusts to the direction and executing adjusts to the direction.

**NOTE:** *If the language used produces precisely the kinds of culture and behaviors that are not desired, then possibly, a re-orientation to life is necessary. To "staying on track" with fulfillment, a re-working of the meaning of the term 'justice' may be necessary.*

As a society develops, so too will the idea of "justice" eventually grow to become an essential factor in the well-being of each individual and in their chosen orientation to all others. Before elucidating upon the term "justice", it is important to note that the intention herein is that justice be applied toward the well-being and fulfillment of the individual within a larger community of individuals. It is not applied toward the behavioral management of individuals or the ownership of conflict by either authority or the structuring of competitive advantage. Herein, well-being refers to [at least] the state of sensation where the total spectrum of an individual's human needs are sufficiently fulfilled such that the individual is curiously engaged in their life, freely expressing themselves, and is participating in an intentional and fulfilling way in the lives of others on this finite planet. Well-being, therefore, is directly linked to freedom, for when someone is fulfilled and responding in integrity and through focus, then they are less likely to react instinctually and maladaptive toward the inhibition of their own and others' freedom. A society designed to foster and nurture human well-being will have a well-defined conceptual understanding of the meaning of 'justice', which by consequence will be traceably encoded within its socio-economic system, wherein it fulfills (and does not thwart) human need by measurable degree.

Fundamentally, for an individual to have well-being, s/he must have access to those things that support him or her in maintaining healthy functioning and optimizing self-development, especially physically and mentally. Justice cannot be abstracted from these needs, these lifeground associations, which maintain an overall state of well-being; nor can it be removed from its socio-economic context, which involves the organized and coordinated fulfillment of these needs on a social scale.

**INSIGHT:** *There are real, objective measures of human well-being.*

### 4.1 An overview of justice

**INSIGHT:** *The question of how one human should treat another is often posed. The answer may lie in how each one of us has the potential to participate with others toward a mutually fulfilling higher potential of common existence.*

A society is [in part] composed of a group of people in a persistent and chosen interrelationship with one another, divided by choice and defined by organization. Common

societal interrelationships include, but are not limited to: personal relations (one-to-one or one-to-several); social relations (a network of personal relations); economic & ecological relations; and self-relation. When there exists a sense of fulfillment in the coordination and qualities of these interrelationships, then a subtle sense of justice might be said to have emerged.

When societal relationships enter into a state of harmony with the fulfillment of human needs, then there exists a return to a state of synchrony with our common nature. And, therein, lies freedom from compulsion and subjection at a societal level. Subjection lies at the opposite end to autonomy on the "freedom of choice spectrum": as autonomy <---> subjection & subjugation. Humans have needs that are [in part] met by social and economic systems. Wherein, for the idea of justice to remain functionally useful in a community its encoding must directly orient and intelligently organization the community's systems toward the transparent and common fulfillment of human need amongst a set of chosen and persistent interrelationships. In particular, the encoding of justice into an socio-economic system must recognize needs and facilitate their fulfillment. Herein, the ideal would be to arrive at decisions at a systems level that [at the very least] ensure that each individual's real needs are sufficiently and "justly" fulfilled.

The idea of justice buds into existence at the social level, for the concept requires [at least] some degree of human interrelationship. And, for justice to be said to exist among society, it must begin among personal relationships. In personal relationships the idea of justice might be expressed as an authentic respect for the essential sameness in another human being, compassion for the [needs of the] other and support in the fulfillment of their real needs. At a socio-economic scale this becomes the participative re-generation of structures that further facilitate the fulfillment of all of common needs; for fundamentally, in society, every individual makes choices that impact both themselves as well as the community. By consequence, in order for there to be harmony among individuals, there must also exist harmony within the individual.

Justice is a matter of the organization and internal divisions of a society. How unified or dis-unified is it in coordinating and organizing the fulfillment of a populations [human] needs. What kind of organization of a society would rational persons choose if they were in an initial position of independence and equality, and were setting up a system of cooperation for need fulfilment? The world (Read: historical material conditions) already exists, but society is being continuously created by the choices of many individuals, and new individuals are continuously being born into it. It is only a half truth that society starts at some original, historically conditioned position, because those new individuals who are born into a society could be viewed from adaptive perspective. In this way, community education could be seen as the underpinning of all justice in community, and is the

initial phase of the execution of any community project.

For this reason justice is not so much the "proper" (or optimal) distribution of material things [although this is important] as it is the proper valuing and interpretation (or meaning) of existent relationships. Such a "state of justice" is not something necessarily received with human existence; instead, it is the result of informed/educated intellectual freedom exercised as responsibility in relation to one another and to human need.

Resources are continuously being redistributed, and material environments are being, and will continue to be reconfigured over time. The issue has two dimensions:

1. Is there the application of force, coercion, or violence in the reconfiguration; how pervasive is "authority"?
2. Is there more optimal human fulfillment; how pervasive and certain is optimal human fulfillment?

In this context, the two axiomatic justice-base principles are:

1. **Distributive justice:** Everyone should have equal access to the most extensive goods and services, consistent with others' access in the same life phase.
  - A. **User violation/error written as:** No one will place unreasonable demands on production.
  - B. **Service violation/error written as:** No one will be unreasonably disadvantaged or advantaged over others when providing service-access to anyone within their life-phase.
2. **Restorative justice:** Everyone should have evidence-based first response in the case of harm and restorative justice in the case of trauma and/or violation.
  - A. **User violation/error written as:** No one will violate the dignity and well-being.
  - B. **Service violation/error written as:** No one will withhold medical and restorative justice services.
3. **Participatory justice (contributory justice):** Everyone should have the ability to participate in society and in their own self-development.
  - A. **Service violation/error written as:** No one person should be blocked from contributing to the continuance and advancement of the community.

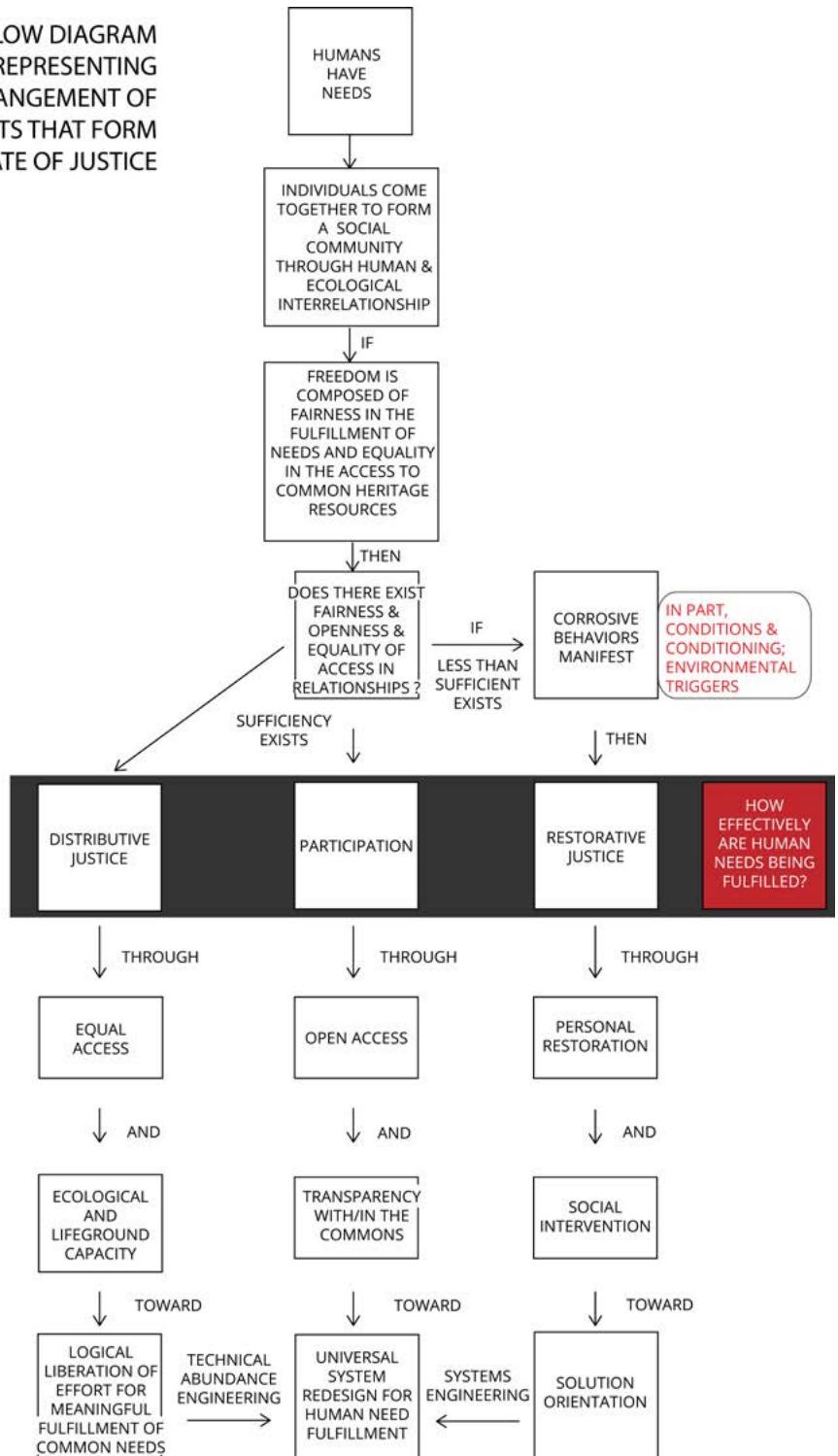
Justice cannot be removed from its socioeconomic context, from the community context of social problems, from human feelings and fears about life and death, and also from the fulfillment of human needs. To disassociate the idea from its context would be to disassociate it entirely from any useful or existent reality. Hence, in a social system justice appears to concern itself with the effective recognition of needs and issues, and their

fulfillment through the harmonious and participative arrangement of individuals, and their conceptual organizations. Similarly, in an economic system, justice appears to reflect how effectively needs and issues are fulfilled through the effective coordination of economic decision-distribution activities. Within a community, the voluntary (or "free") association of individuals as well as the coordination of resources, activities, and systems is essential for the existence of justice in any meaningful form. In community, we are all equally affluent. Equal distribution of wealth makes sense; instead, it is the enforced and authoritarian-based political version of equal distribution that becomes just another form of slavery. Humans are not "equal sames", instead, individuals are equal as sovereign conscious individuals with common human needs and objective preferences, who live together on a planet within a habitat service network, within which common heritage resources are shared as locally customized habitat service "city" systems.

Herein, without free association (and educated self-verification), discrimination and duress will render conflict as an inherent property of the system, decreasing the effectiveness of coordination toward the fulfillment of needs, and eventually leading to various political factions redefining the term 'justice' to suite their own personal motives and agendas. In other words, conflict will always exist in an non-voluntary system [regardless of patchwork] for it is an

innate behavioral characteristic to the design of such a system. The very idea of [synergy through] voluntary participation and cooperation might be enough to warn against imposing unfair sacrifices on individuals

**FLOW DIAGRAM  
REPRESENTING  
THE ARRANGEMENT OF  
CONCEPTS THAT FORM  
THE STATE OF JUSTICE**



**Figure 15.** A conceptual flow diagram representing the arrangement of concepts that form the state of 'justice'.

for the supposed greater good of a greater [or lesser] number. When the idea of fulfillment and human need are recognized synergistically, then slaves and sacrifice appear as what they are, unnecessary and corrosive states that lead to the deterioration of everyone's fulfillment.

Also, when a sense of autonomy is high in healthy individuals, then less compulsive behaviours manifest, and when autonomy is low more compulsive behaviours manifest. When more of an individual's energy is taken up by compulsion, then less energy can be put toward constructive action and intelligent coordination. Herein, justice is not about ending the oppression inherent in a system, but it is about designing a system where oppression and exploitation are not an inherent property of the system.

A human society will inquire into the idea of justice for its very survival. After all, the demands of human need cannot be avoided by any community of human beings. And herein, uniting together in the structure of a community enables individuals to explore and learn about the world together while evolving [equitable and restorative] systems that increase the effectiveness and efficiency by which their needs are fulfilled.

Justice could be considered a measure through which a society supports in fulfilling the needs of those who are least physically and mentally capable of having their own needs realized, the "least fortunate". Here, justice equates to the measure by which the old, sick, poor, handicapped and young feel a sense of dignity and sufficiency in the fulfillment of their needs. Such a standard might be used as an indicator of collective unselfishness. It must also be noted here, with no eugenics or similar agenda anywhere in consideration, that wherein justice exists to support the least physically and mentally capable it also involves the safe use of technologies so that increasing numbers of physically and mentally incapable individuals are a less probable creation. In other words, a society that values justice would not poison people with genotoxic substances (e.g., agent orange and depleted uranium which harm the germline) that lead to birth defects, nor would it damage the cognition of individuals through food that lacks nutrition and water polluted with industrial waste (e.g., sodium fluoride). For a society to consciously or unconsciously create physically regressed individuals (for whatever reason) says something fairly awful about that society. Fundamentally, when a brain becomes damaged (or develops poorly) our capacity to have a civilized society goes down with it.

It is wise and well-reasoned to treat others as ends and never as means, to respect them, and to promote their personal development. This is the lifeground of justice. Herein, it would seem moral to recognize that each human being is driven by a set of common needs. If the term 'ethics' were to be used, then it would concern the degree to which individuals act together toward the fulfillment of their needs, which are common to all (note that in other philosophies the term 'ethics' is defined as the "governing of behavior by some outside other").

Within the individual, justice is the effective coordination between each of the components and systems that form a human being, coming together harmoniously and in "balance". Each element making its cooperative contribution to an individual's total sense of self, maintaining a viable foundation for the self-expression of a higher potential. Every individual is either a cosmos or a chaos of needs, desires, emotions and ideas within a bio-physiological organism at home within a social and economic context. When these are in harmony with real world needs, then the individual has the greatest possibility for realizing and expressing their full potential, the individual "succeeds". But when they lose their proper place and function, then disintegration of capacity and personality begins, and corrosive social behaviours manifest - failure advances like the inevitable darkness of a collapsing civilization.

A system without conflict is a system without the realization (or "rendering") of the concepts of authority and power hierarchy. Everywhere we see imposed harm, we see this form of protective hierarchy agitating and directing that harm, and creating poverty and crime and war and starvation. It would seem best that the socio-economic system (or "apparatus") should not serve the interests of an elite few, or even the ignorant many, but rather the real and common needs of every individual.

When the following ideas are accepted into the organizational structure of a community, then they represent a vision of society where humans are "justly" fulfilled without repression or conflict:

1. That human needs exist;
2. That technical needs can be met systematically and synergistically by coordinated activities with a real world, verifiable referent; and
3. That we can come to [f]actually know the world around and within us, and that we can use this discovered knowledge to arrive at more fulfilling decisions.

Justice is not the right of the stronger or the presence of a claimed "authority", but appears as the effective harmony of the whole. All moral conceptions [at some level] revolve about "the good of the whole", or more accurately, decisive action toward greater fulfillment for the higher potential expression of the whole. Herein, there is a recognition of larger shared ecology, a social and environmental (i.e., lifeground) ecology, for which there are social and environmental responsibilities, and through which a coherent organization can facilitate the effective fulfillment of human need. The total ecology must be a consideration if a society is to maintain a useful orientation through its definition, and eventual encoding of justice.

A state of harmony is maintained by the whole through association, interdependence, and organization of coherent interrelationships. And ultimately, the norm of conduct (i.e., normalization) in each relationship becomes the welfare of the whole group. When normalized

relationships are based upon forced association, then conflict has a greater likelihood of being produced each time an association or organization forms, and justice cannot benefit or uplift the whole. Therein, society may be seen to be tearing itself apart - nature will have it so and its judgment is the only judgment, and it is always final.

Ecological systems in nature have carrying capacities. A complete application of justice that is not based on the fulfillment of human needs in conjunction with ecological limits, with real world limits, is unrealistic and unproductive. Accounting for ecological limits is important for many reasons, not the least of which is that it safeguards the fulfillment of future generations (i.e., the justice of future generations).

It is salient to note that 'justice' also relates to future generations. We are here on this planet for a temporary period of time, whereupon another lot of humans join the planet, and there should be consideration toward protecting the planet and its resources for them [as we become them]. "I" am going to die and "you" are going to die and without an accurate definition of 'justice' the real problems will just be pushed back until in the end there may be no truly viable solution. Therein, a future generation will look to us and say, "well if those people in [the year you are reading this] weren't such morons, and understood themselves more clearly, we wouldn't be in this predicament."

To comprehend human nature is to comprehend that human behavior is at least partially a product of the environment and of language, of condition and conditioning, of consciousness and its ability to integrate its existence. It is necessary to recognize the strong influence these factors have on individual's values and behaviours. When it is understood that values, methods, and actions are developed and derived from experiences, then the root (or source) of behavioral patterns that are socially offensive, corrosive and abusive may be perceivable and a solution orientation may be used to redesign the community's life/social system so that it more effectively fulfills individuals' needs, with a reduction in the likelihood of producing corrosive behavior [systematically]. It is only after individuals are informed that individuals [within the context of a society] can arrive at informed solutions. Human behavior must be examined with the environment and the culture that surrounds it. There exist conceptual realities that are very problematic for peoples psychological well-being, for which the social sciences is increasingly illuminating.

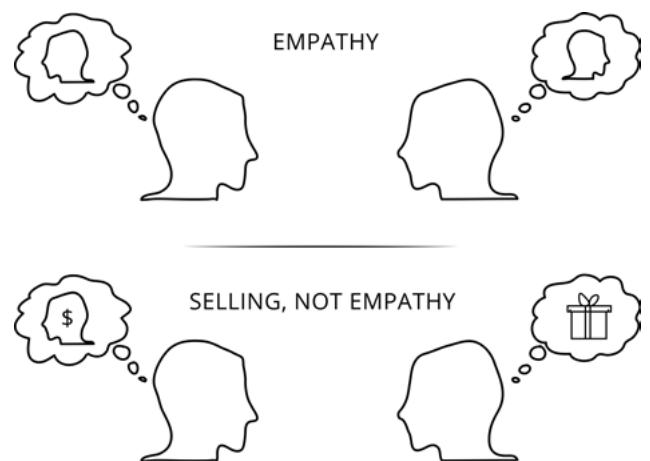
A healthy society cannot ignore the causality between people's behavior and their life conditions. In particular, a society disregards to its own detriment the data showing the existent causal relationship behind economic wealth imbalance and violence. Numerous studies clearly show that the larger the economic inequality gap (also described as the gap between rich and poor, income inequality, wealth disparity, or wealth and income differences) the more likely a society is to experience violence and "crime". Here, it is important to recognize

that because of trade and cumulative advantage, the market economic mechanism tends to generate gross inequalities of income, wealth and life-chances. The poor [in fulfillment] might not "inherit the world", but they might freak out and harm a dear friend. Those who do "terrible things" almost always have a history of being the victim of "terrible things" as well. Scientifically speaking, psychological abuse does physical abuse, damage, to a brain. Restorative systems view the whole when they view the individual.

**INSIGHT:** *We are in this together and the sooner we realize that the better off we will be.*

In a monetary system, economic inequality refers to the difference in a person's financial wealth or income as related through social status (or class). These differences in income are a measure through which a society has an economic hierarchy. At a fundamental level, economic inequality manifests as a difference in access to lifeground needs (and their qualities) such as food (and its nutritional quality), clean air, water (and its qualities), shelter, education, and so on.

It is a scientific fact that the [economic] market is a socially unequal form of socio-economic structuring. Therein, market inequality generates and perpetuates gaming behaviors, organized competitive advantage, and violent crime, among many other resulting characteristics that put plenty of holes in any "free markets are 100% voluntary" argument -- if "you" are obliged to participate, then you are not [intrinsically] participating. How can a free market truly be voluntary when no one born into it volunteered to be there? In part, actions in the market system are coerced upon individuals for their survival. Object exchange is mandatory for participation in the market. In the market individuals are "looking out for their own" interests and needs without the



**Figure 16.** When 'selling', empathy becomes being able to understand the prospect better than they understand themselves, so that the seller knows what is likely to make the potential consumer buy the product (or, the ideology that keeps the seller in power).

comprehension that there exist the potential for common and cooperative human fulfillment without the host of consequences that come from the organized application of competition (as business) in a market. The bad practices in the market translate into bad practices in thinking and in behavior. Being more mindful in what we are collecting, thinking and cultivating translates into better behaviors and better socio-economic systems.

Any objective view of justice must account for, or at least seek to observe, the social psychological and environmental components of violence and aggression, and their potential [re]-generation by societal structures. And yet, it must also seek to reflect the highest motivation of people in reality. An elucidated description of justice that fails to deal with the problem of power, violence, and aggression [and coercion in general], so fundamental to that which is known as 'injustice', is either no definition at all, or a completely ideological one, serving to mask and hide from view the realities of power of a particular society, entity or ideology; for power does not imply justice or even correctness. There is no debate, as complex as it is, that the human psyche has basic predictable, instinctual reactions pertaining to environmental stressors. Reactions of violence, depression, cyclical abuse, and other detrimental psychological and behavioral states are the regular result and manifestation of these stressors, which chronically inhibit the fulfillment of human need.

A useful definition of 'justice' must seek to orient society in such a way that power differentials and corrosive behaviours are recognized (or identified) and reduced, and appreciative and mutually valued interrelationships are supported (i.e., cooperation). It must encode cooperation and mutual value into the structure by which decisions generate solutions to issues of individual and social corrosion.

Injustice is most easily seen in the disharmony between humankind and nature or between the individual and the social or between an individual and himself or herself. Every injustice (as the lack of real, effective fulfillment) reduces the freedom of individuals in a community. Not here that there are things that may benefit some of us in the short-term, while causing harm to all of us in the long-term. The individual as well as the social must be observed and accounted for, in societal decisioning, over time.

If the environment is to any extent a determinant [factor] in behavior as has been shown via many studies, most notably, the Milgrams Study and Stanford Prison Experiment, then the environment and the concept of authority must be addressed in the emergent design of a community's systems. A society where people are fully informed, intelligently socializing, and aware of themselves and of the systems that provide for their needs, is more likely to be a society closer to justice, fulfillment and prosperity [for all].

If justice does not orient a society toward a reduction of those behaviours that are individually and socially corrosive, and toward the fulfillment of every individual's

needs, then what value does it actually serve, who is it actually serving? Bad ideas, held for bad reasons, lead to bad behavior. And while not all ideas about the nature of reality are mistaken to the same degree, the logical and behavioral consequences of some beliefs and some ideas are observably more damaging than others.

When a socio-economic system is unfair everybody loses. Human beings are built to focus on their tribe and community, and their psyches have a very difficult time taking in and comprehending all the suffering that is occurring on our planet every moment of every day. Some people ignore it because they cannot handle it and others cannot handle it and so they become good at ignoring it. It becomes completely overwhelming to them, quite paralysing, for some people. Many simply cannot "believe it" for the magnitude of suffering is so truly awful. Others have found a place of equanimity with the suffering and instead of calling discussions of it "negative", they use their knowledge and awareness to drive themselves and inform novel solutions; they maintain a critical orientation toward information. Regardless of how someone emotionally handles reality, it is important to cognitively realize that "negative" information is often craved because in the past and still today it was innately associated with survival; this is known in the literature as "negativity bias".

Yet, to not maintain an awareness of the true nature of what is occurring means to not acknowledge reality and the depth of a situation, and thus, a view that ignores the "negative" creates an inability to take avoidance action when necessary. Have "your" survival instincts been conditioned out of "you" such that "you" call neutral information "negative" as a means of disregarding and ignoring it (or not "energizing" it)? When in fact, historically, information about that which is harmful or could cause harm or is causing harm (to others like ourself) would have been eminently useful and applied toward surthrival (Read: surviving and thriving). Even in the midst of great suffering we have the potential of recognizing the source of [our own] suffering. And yet, if "you" don't recognize a problem, then "you" can't correct it.

For some people there is nothing more exciting than finding out that the wool has been pulled over their eyes. For those who are healthy and sane, they hurt, and that hurt propels them to change that which is causing the pain. Learning about the "negative" has the potential of setting us on a journey about doing something about "it". And further, it helps us to become aware of our participation in what are otherwise the real problems.

There are some people who selectively choose to ignore the "negative" out of a belief that "you" will give power to something that is [information about that which is] harmful simply by putting your attention upon it and becoming aware of its existence, discussing its existence, or critically analyzing why it exists (the source of its existence); therefore they claim, "you" should never pay attention to or talk about something that is "negative". Many people are deceptively convinced into

believing that more “negativity” will be generated by talking and thinking about the things that are wrong and need correcting in the world. (Tremblay, 2013) This belief is often exposed when someone states, “I don’t want to hear your negativity.” Unfortunately, it is a deception [like most beliefs are] to “ignore the negative” and not observe or critically explore that which is wrong with society and causing hurt. Without critical exploration and questioning, how is there any discovery or progress, how will a system be redesigned? Specifically, the deception involves the belief that someone will bring about more negativity by paying attention to, talking about, and challenging things that are causing dissonance in the world. The opposite may in fact be more accurate. More “negative stuff” is likely to occur by refusing to maintain an awareness of and to critically challenge the “negative stuff”. It takes courage to shine a light on fear. Progress in truth is inhibited when the labelling of something as “negative” cuts its further philosophic argumentation (i.e., further inquiry and learning into the subject that is labelled as “negative” is impeded through “negative” labelling). Some conversations end with one of the participants saying, “don’t disagree with me because that is negative”, or “if you don’t agree with me you are being negative and I don’t want to hear it.” It is wise to avoid trapping oneself in such a conversation. In community, if someone is critical, then they must have a platform to express their criticism, and it would be wise to listen to them.

If tyranny wants anything, it wants “your” complacency; it wants you happy and content under its miserable conditions; it doesn’t want you to feel the motive pain and suffering which might cause you to [systematically] root it out. Thinking is a very easy thing to outsource. And doing so certainly opens the doors for those who would like to take advantage and control of other individuals, of groups, or even the entire planet. If ‘prosperity’ really is the creation of solutions to human problems then every economic act becomes an explicitly moral act. Because the degree to which prosperity is created among a social population really is the degree to which it is possible to solve societal problems (legitimate and important problems). Understanding that prosperity is the solution to human economic problems merges the economic and the moral world in a very important way, and it ought not to surprise us that it brings the economic world back into alignment with nature. If prosperity is solutions and growth is the rate at which you solve them, then the role of community becomes ensuring the maximization of the number of people who are out there with the potential of solving problems (i.e., anyone), inclusion.

Suffering spreads through *ignorance* - by ignoring that which is actually occurring. When someone ignores or otherwise refuses to acknowledge something that is clearly happening, then s/he is refusing to acknowledge reality, and in doing so will miss the causal factors that led to the “negative” condition(s), structure(s), and behavior, which are interconnected. In other words, the belief that looking at that which is dissonant will cause dissonance

is a maladaptive belief and can supersede an individual’s natural desire to learn more about the things in his or her environment that are presenting opportunities for growth. Reality does not become less of a reality if “you” ignore it. If a pathogenic virus is ignored and not exposed [by the immune system], then it will replicate. In general, you will get more of it if you don’t expose it.

In early 21st century society, most people spend most of their lives producing and consuming goods that are completely irrelevant to their needs. They are likely to see justice through the eye of authority and happily exchange in the “free and voluntary” market. In a materialist society the control, possession, and consumption of material good is of a higher value than the effective fulfillment of human need. In an authoritarian society the control and monopolization of exchange and conflict is of a higher value than the effective fulfillment of human need. And, the definition of ‘justice’ will reflect the higher [priority] value. Therein, people are valued to the extent that they can produce or consume or possess or monopolize, and the “successful” ones are the ones that can control and produce the most. Once people lose their capacity to produce and consume (or they never had it in the first place), then they are considered useless, failures, and ultimately, “unsuccessful”. Whereas in factuality, humans commonly need to be accepted for who they are and to express who they are as conscious, developing human beings. Such expression is frustrated in an unjust society. And, many people compensate for the frustration of their needs by working more, by buying more, and by internalizing even more of their own suffering.

*“Injustice anywhere is a threat to justice everywhere. We are caught in an inescapable network of mutuality tied in a single garment of destiny. Whatever affects one directly affects all indirectly.” [In other words, no value of a higher potential can be maintained as long as injustice and oppression exist.]*

- Martin Luther King, Jr.

## 4.2 Fairness and equality

**INSIGHT:** *Inequality is a social pollutant. What is ‘healthy’ is ensuring that people have what they need through optimized design, not the forcing of “fairness” on people.*

Justice can only exist within the coordinates of equality – for without equality, all forms of justice will be applied differently to those of different [social] status. Inequality is violence (i.e., inequality in life-need fulfillment between equal members of our society is a form of structural violence against those who have less given the true potential totality of what we could offer. In other words, those of different status will have their needs fulfilled dissimilarly in an unjust environment. Justice is an equally unifying concept - if it is not applied uniformly (or, its effects are not common) it cannot be said to have been applied. Consider a situation where houses play

a part in showing a difference in the status between people, then the fair and equitable fulfillment of needs (i.e., distributive justice) does not exist and systematic efficiency becomes impossible under conditions of competition and behavioral pathologies induced by social status. Competition at the social, and hence economic level, will induce social and class warfare, and generate an unsustainable cultural environment [that exploits its natural environment].

**INSIGHT:** *Enforcing equality is effectively creating in-equality, because there is one party having power-over-another. Enforcing absolute equality becomes a form of tyranny.*

Fairness concerns [at least] how individuals relate to and treat one another in society, as society progresses. A society based upon competition is out of alignment with the natural "order" of human beings in that 'fairness' is an innate concept, wired into the brains of humankind. Fair means equitable. It is part of our natural makeup. Herein, it can be said that people who don't respect equality have really been conditioned not to respect equality; because, through equal fulfillment of others, life becomes better for all. We not only long to be treated fairly; we also long to be fair to others (i.e., we have a conscience and empathy). It seems wise then to build on our better nature - to persistently reinforce our innate sense of equality, to build a society where the equal participation of all can be facilitated and applied - where no one's needs are left alone. Essentially, empathy is important for all economic functions in a community; we don't get along well and cooperate if we don't have empathy.

How "equality" is defined and codified, defines (in part) a society:

1. Is equality defined as equal ability to legally own property under the law of the State? Herein, all are equally allowed to own property in the context of private and State property, regulated by State law.
2. Is equality defined as a decision and generalized societal system designed certainly to optimize the fulfillment of all objective, common human needs and preferences? Herein, all have their human needs and preferences objectively and commonly accounted in the context of common heritage resources and a collaborative information space.

Other animals have been shown to exercise altruism and to appreciate fairness. A sense of fairness may be innate to other animals, but among humans alone it is aspirational, a measure of how we might judge ourselves. Wascher (et al., 2013) found that even "the feathers of crows" are ruffled by the observation of what they do not consider fair behavior.

When people do not have sufficient fulfillment, or do not get equal reward, then they might start asking

why questions: "Why did they get that, and not me? Why didn't I get what they have? Why don't I have as much?" Remember from the prior value section on freedom that a potential state of free inquiry exists between stimulus and response. However, when the state of free inquiry has not been allowed to develop naturally within someone, and they solely flip between stimulus and response (input to output), then the unequal and unfair distribution of things becomes dangerous; for instead of inquiring into the unequal distribution [and resolving it with systematic social intelligence] they will lash out (often violently) in the face of inequality for their own satisfaction, or perceived survival.

Tabibnia and Lieberman (2007) indicate that reactions to fairness are "wired" into the brain and that fairness [in part] activates the same area of the brain that responds to reward. This is consistent with the notion that being treated fairly satisfies a basic need. Research conducted in 2003 at Yerkes National Primate Research Center with Emory University in Georgia, USA involving capuchin monkeys (non-human primates) demonstrated that other cooperative animals also possess such a sense for equality and that "inequity aversion may not be uniquely human". (Brosnan, 2003) In the capuchin monkey experiment the monkey receiving unequal "pay" rejected the pay. The researchers who conducted the experiment found that capuchin monkeys have a "sense of fairness" and will reject inequitable rewards, much as humans are known to do. The researchers stated that the response to the unequal treatment was astonishing: Capuchins who witnessed unfair treatment and failed to benefit from it often refused to conduct future exchanges with human researchers, would not eat the cucumbers they received for their labor, and in some cases, hurled food rewards at human researchers ... along with shaking their cages aggressively. This same fairness experiment has now been done with many other mammals including dogs, birds, and chimpanzees with similar resulting observations, indicating that ideas of fairness may be instinctual in nature. Primates react with displeasure when researchers create inequality between them.

Treating people as ends in themselves is a good way to safeguard human well-being. Fairness is not merely an abstract principle — it is a felt experience. It is an empathetic pathway to another human being. We all know this from the inside, of course, but neuro-imaging has also shown that fairness drives reward-related activity in the brain, while accepting unfair proposals requires the regulation of "negative" (or reactive) emotional characteristics. The moment we conceive of justice as being fully separable from human well-being, we are faced with the prospect of there being "morally right" actions and social systems that are detrimental to the well-being of everyone touched by them (and their structure).

Inequality [in access] is divisive and socially corrosive. Societies can now be compared and studies clearly show the damage caused by the inequality of socio-economic status. Indeed, the quality of a society radically

depends upon the existence of fairness (or equity) between persons, upon its inclusion or exclusion in the definition of justice [in a society]. Here, equity is simply the fulfillment of all human need. Equity means that all humans have their needs met and can share in mutually coordinated fulfillment.

In "The Spirit Level", Wilkinson and Pickett (2011) publish clear data on the following economic and social indicators involving social equality and issues of common concern - almost every social indicator gets worse as countries become more unequal. For instance, child well-being is better in more equal countries; drug use is more common in more unequal countries; educational scores are higher in more equal countries; health is better in more equal countries; homicide rates are worse in more unequal countries; levels-of-trust are higher in more equal societies (i.e., people are more likely to feel they can trust one another in more equal societies); rates of imprisonment are higher in more unequal countries; infant mortality is higher in more unequal countries. Although cancers are more common in high-income societies, diarrhoeal diseases, which are the second leading cause of death in children under five years old worldwide (*Diarrhoeal disease*, 2013), are more common in low-income societies. Living in an affluent region is simply likely to expose someone to other disease risks. There is a common myth that the gradient of health in industrialized societies is simply a matter of poor health for the disadvantaged and good health for everyone else. However, the findings of Wilkinson and Pickett (2011) reveal that a society that is stratified in access to fulfillment is going to have concomitant health and social issues. In appreciation of "The Spirit Level", Sargent (2009) states:

*"In their new book, epidemiologists Richard Wilkinson and Kate Pickett extend this idea" (of the harm caused by status differences) "with a far-reaching analysis of the social consequences of income inequality. Using statistics from reputable independent sources, they compare indices of health and social development in 23 of the world's richest nations and in the individual US states. Their striking conclusion is that the societies that do best for their citizens are those with the narrowest income differentials—such as Japan and the Nordic countries and the US state of New Hampshire. The most unequal—the United States as a whole, the United Kingdom and Portugal—do worst."*

Note here that Mills (2012) published a critique to the works of Wilkinson and Pickett.

Social and economic practices can deteriorate our well-being, particularly in regards to stress, mental illness, mortality risk, and rates of disease. Modern social structures, values, and practices have deviated away from or are ignorant of what true societal health means. In early 21st century society, most measures of prosperity and social integrity are equated through

economic baselines (e.g., GDP and employment figures), which tell us very little about true human well-being and prosperity -- they are decoupled from the actual life support system, the Earth, our resources, our environment, our physiology, our mental health, and the lifeground needs that we all share. In truth, the analysis of the health of a society cannot be based on an aberrant and decoupled economic system. Instead, we want to examine things that have an actual physical referent [through scientific research]. Unfortunately, in early 21st century society, it is more common to focus on the by-products of income inequality as isolated problems in-and-of themselves.

In the market, there is often very little feeling of trust in social relationships, because in every relationship "you" always feel like there is an ulterior motive (other than knowledge, human fulfillment, someone's well-being, etc.).

Social inequality generates psychosocial stress for everyone. There is a relationship between stressors, everyone's health, and the inequality that exists around us. What has been found scientifically (and statistically) is that the more income inequality, the more problems for everyone in society. Even those at the top of the income hierarchy would benefit from a systematic redesign of society toward more equal access (i.e., they too would have better health and higher levels of well-being). Take, for example, the fact that researchers have long known about the phenomenon that stress is "contagious" and is a form of sympathetic communication passed through simple observation of [at least] another's facial expressions, tone of voice, and touch. Simply watching a stressful situation is likely to impart "second-hand stress" onto another, as if it were contagious. Partly, it's a function of our brains being wired to mirror (or, repeat) the actions and emotions of others.

Empathy is an essential characteristic of resilience. Strong relationships with others can "bail you out" in times of need; they are a form of resilience. Understanding another's situation, and what they need, is what connects you with others, which in turn bolsters your ability to weather life's rough patches.

The contrast between material success and social failure in more affluent countries is an indicator that it's time for early 21st century society to reorient its worldview. In a system where monetary gain is a priority over (or even equivalent to) human well-being, then we are unlikely to see any real, systematic change [while such a system runs its course]. Rather, we more likely suffer from increases in environmental and psychosocial stress as we all struggle among great suffering.

Do we not all desire at some fundamental level a social system that at its core is concerned with human well-being and fulfillment, and the sustainable regeneration of environmental resources. Environmental resources are a common basis of survival. All social systems regardless of political philosophy, beliefs, traditions or customs, ultimately depend upon natural resources, and it is why this fundamental point needs the attention it

demands. Resources are a common basis for survival.

Herein, the method by which social or economic equality is structured may be described as efficient if there is no possible restructuring which could be performed to make this structuring more advantageous to any particular individual without simultaneously making it less advantageous to another individual. Wherein, effectiveness always lies in knowledgeably resolving reality for the highest fulfillment of all concerned. It is important to note that what is being discussed by the meaning of justice represents an entirely different socio-economic design, one that removes the encoded existence of socio-economic stratification by those "rich in access/property/capital" and those "poor in access/property/capital", which is not in any way equivalent to [forced] wealth redistribution. In other words, the idea of "rich" or "poor" among society is removed altogether [by removal of the market, and hence, the State]. Redistribution toward equality with a fixed capital pot (i.e., the market) implies taking away income (and property) from those with more of it and giving it to those with less. Or, in the context of growth, reducing the increase in those with greater income to below what it otherwise would be. However, redistribution (in any form) is not what is advocated here, or more accurately, "designed into" this community model. The Community represents a complete and systematic redesign of the modern socio-economic environment, of which force is not a structural element; and hence, the Community will only arise when people voluntarily and cooperatively decide to participate in its emergence (i.e., the Community is not equivalent to, nor does it advocate, a system of [forced] wealth redistribution).

Fundamentally, individuals need to ask whether or not fairness can even exist in a system that is not designed at its foundation to meet the individuals' need for fairness? Some systems are inherently unfair. For example, it isn't fair that some people can't pay their bills, afford nutritious food and healthcare, or not be overwork by their employer, but it also isn't fair to apply coercive force to another person to pay for the person who can't afford the monetary expense required to fulfill their basic needs. Some systems are inherently unfair and are not structured for fairness; they maintain a chronic state of social, economic, and environmental disequilibrium. Although nothing is "fair" in nature, a socio-economic system could be designed to equitably fulfill human needs and facilitate, where necessary, reciprocity.

Take a moment to ask yourself, why does society need a "justice system"? The answer on the tip of your tongue might just be, "because there are injustices". But, that begs the question, why are there injustices? Maybe injustices exist in part when a system is designed in a unjust way - when its conditions and conditioning (i.e., the structural environment) create injustice. Maybe a solution-orientation and not a criminal justice system would be a more valuable orientation. Inaccurate and imprecise understandings are unlikely to resolve into systematic solutions for they do not [accurately] account

for the whole system.

Of crucial importance in the idea of fairness is the quality of social relationships. Because members of the same species have the same needs, they can, all too easily, be each other's worst rivals -- fighting for food, nesting sites, territories, sexual partners and so on. But human beings, as well as having the potential to be each other's most feared rivals and competitors, also have the opposite potential: We can be each other's best sources of cooperation, assistance, support, learning, and love. Our relationships could align with a value system that supports in an orientational evolution toward everyone's higher potential. Herein, fairness becomes the equal fulfillment of needs through designed access to common heritage resources as an "equalitarian" sharing structure.

Wisdom has a difficult time affecting change in world where nationalistic, monopolistic, commercial, and "family" demands cloak the common heritage of humankind and prevent the advent of justice on a global scale. Are we not all equal "shareholders" (or potential caretakers) in the Earth?

Instead of seeking a state of equality in access to outputs of natural services in the fulfillment of common need, authority endows people with righteousness. And, righteousness combined with rationalization leads to individuals justifying their horrific behaviors by saying, "I am doing the right thing when I kill you, the authority wants me to kill you". Authoritarian righteousness is the trait of individuals who are completely out of touch with the natural world and any sense of human fulfillment. When justice primes a sense of righteousness, then the structuring of society is soon to become unfair.

Many people in early 21st century society simply cannot imagine not having a final authority. They cannot imagine a system without authority telling them what to do and punishing them (though primarily "others") for what they ought not to have done; it is anathema to them. They cannot imagine the cooperative organization of systems at a social level, systems that biomimic nature in the production of services that meet our common needs. And yet, a portion of these people even agree that the initiation of force is morally wrong, which is a contradiction, for a monopolistic authority invariably ends up initiating force.

There seems to be a peculiar form of rhetoric where "equality" is professed and "fairness" is claimed, but where in practice, all sorts of hierarchies and authorities are implied -- the ideas of democracy and the "free" market are two such examples. This is the rhetoric of the highfalutin, "noble" sort, making lofty-sounding and not-systematically-thought-out statements about the inherent "dignity of man" and so on and so forth. People give a lot of credit to such pronouncements even though they are not worth the paper they are printed on, for their systems are still socially hierarchical (e.g., State constitutions).

Equality can be pursued to no good end in a system that is not designed for equality. Thus, those who pursue equality in "rights", "treaties", "negotiations", and

"instruments" might fail to recognize the continuous generation of inequality innate within the system in which they pursue façades of equality [given to them as pre-packaged "gifts" by other authority figures].

Fundamentally, an unequal society is not a structural organization designed to fulfill needs, and it is very likely to have a "private force" to defend the privileged through exclusive "rights" to ownership (i.e., property rights). Alternatively, if there is privilege in community, then the perspective is that we are the privileged inheritors of the Earth.

It's also very hard to see the equality and the community in a system where your guilt or innocence heavily depends on your ability to pay a special group of people who can navigate an extremely complex formalized system determined by a corrupt confrontational process that seeks to own the confrontation, and can lead you to be tortured, kidnapped, caged or even killed on the basis of rules no one ever living agreed to (or at least "you" never agreed to) -- a "social contract" is socially constructed nonsense.

Equality and freedom are two sides of the same coin. In a state-of-freedom persons are able to express and to remain their intrinsically motivated selves. When inequality of participation and access exist, then power differentials exist, and when power differentials exist then coercion manifests and gaming strategies (e.g., deny, disrupt, degrade, and deceive) are engaged. The power of coercion is neurochemically habituating - poetically speaking, "the self corrupts the self of others". In a social system, coercion is the state of an elimination of freedom. Freedom is not present when coercion exists, and therein, equality and fairness are nowhere to be found. The alternative to controlling via coercion is the systems and engineering science of human need fulfillment, reworking the structure of society so it does not produce/incentivize crime (and hence, there is no need for coercion).

Whatever maximizes "your" freedom must maximize everyone else's freedom, or your freedom is necessarily not maximized. In society, the individual crucially depends on other human beings for the maintenance and sustenance of his or her own freedom, and this can be effectively organized once there is a recognition of commonality (and mutuality) in the existence of a persistent interrelationship. When the existence of a persistent interrelationship is recognized, then equality and fairness can be worked toward. Yet, there are some structures of society that inhibit the recognition of said existent interrelationships.

**INSIGHT:** *If rules are to be broken, then rights are to be violated. The logic is the same until new premises are introduced.*

### 4.3 The sub-composition of "justice" in community

**QUESTIONS:** *Can we make justice into a science,*

*as something we can repeat and test (and use to continuously add to and improve our well-being and our fulfillment)? How can we facilitate participation in fulfillment? How can we restore a sense of self-direction and trust among relationships that have become fractured? How can we optimize the effective fulfillment of need for all individuals and ecological systems within society?*

Justice is the state in which the needs of all forms of consciousness (i.e., "parties") in an interrelationship are effectively [and ecologically] fulfilled. In humanity, justice becomes the effective coordination of these relationships to structurally facilitate and maintain a state of participative fairness and equality in access to common resources, for without these conditions behavioral pathologies are highly likely to manifest. Herein, justice involves equality in access to the socio-economic system as well as the restoration of the fulfilled self-directed individual in cases trauma and harm. Justice may be reciprocally defined as the state in which every individual in the community has their needs regeneratively, sufficiently, and participatively fulfilled such that their highest potential life direction is known and available to them in all moments. Herein, justice refers to the effective coordination of participative social and economic relationships among individuals, technologies, and ecological systems that lead to the restoration and equitable fulfillment of human need. This definition maintains three conceptual understandings:

1. Justice is participative. It is a chosen state of volition (as in, voluntary), and not forced or coerced. This orientation to justice is known as **participative justice**.
2. Justice involves social and economic interrelationships that restore states of self-empowered fulfillment within an individual and between individuals. This is known as **restorative justice**. In general, restorative justice [practices] exist to facilitate prevention, intervention, and restoration [of universally preferable dynamics, states, and behaviors].
3. Justice involves social and economic relationships that coordinate the equitable fulfillment of human needs through access to common [heritage] resources while continuously seeking an overall improvement of the system to reduce fulfillment inequality, unfairness, and the variety of forms of structural violence. This is known as **distributive justice**.

Who would not like to live in a society where their physical, mental, and social needs are fulfilled; otherwise there would be little point in living in society at all. It only seems natural to seek a socio-economic organization that effectively facilitates fulfillment of these needs (i.e. if

there are a number of social forms that fulfill our needs, we should seek out the one, given what is known now, which does so the most adequately). Individuals are essentially interested in being at full health instead of partial health, shelter which shelters us completely and aesthetically instead of partially, enough leisure time to enjoy our lives instead of less, friendships that fulfill our social needs completely instead of only partially, the ability to explore our world and verify our ideas, and so on [all qualified by hormesis and that which self-development entails]. Together humanity is capable of rendering a reality of the highest potential and exploring a higher potential of experience in reality when its needs are effectively fulfilled.

**INSIGHT:** *Justice isn't served, justice is designed. If there is no coercion, because fulfillment is predictably planned for the species (using common heritage resources), then there is likely peaceful co-existence among the species. Community is a peaceful, not necessarily defenceless, configuration of society.*

#### 4.3.1 Restorative justice

**A.K.A., Transformative justice, conflict resolution, therapeutic jurisprudence, holistic justice.**

Individuals' sense of interconnectedness may be undermined by their societies approach to justice. Herein, restorative justice (also sometimes called 'reparative justice') seeks, where possible, to restore "victims" and "aggressors" to whole, wherein they are once again making fulfilling [life] choices and maintaining "right relationships" with both themselves and with others. It is a process that supports all concerned in returning to a state-dynamic where needs are sufficiently fulfilled, and self-efficacy is engaged, such that individuals are once again pursuing their highest potential direction. Herein, the idea of restoration is applied to repair discordance and dissonance rather than simply to inflict equivalent harm. It rebuilds connections (i.e., it reconnects one to the path of fulfillment). It is an approach to justice [as the effective fulfillment of needs] that focuses on needs as opposed to satisfying abstract legal principles or punishing the "offender" [of authority]. The practice of restorative justice maintains the understanding that there is no singular action of violence, there is a process of violence.

**NOTE:** *In many cultures, a 'crime' was something to be resolved between the "offender" and the "victim" (and their families and community), with the goal of restoring wholeness and a sense of a rightful relationship. Therein, how individuals express anger is dependent upon what they know and the tools available to them.*

Restorative justice is not concerned with retribution and punishment; instead, it is concerned with (a) making the victim whole and (b) seeking to restore and

reintegrate the individual(s) who initiated (or pursued) harm and violence back into a fulfillment-oriented society [where possible]. Fundamentally, the question must be asked, what is more effective than restoring the health and functioning of natural living systems?

Hence, restorative justice emphasizes the importance of both the restorative process and the desired directional outcome (i.e., a re-connection with the state of 'flow' in human fulfillment). It involves repairing the harm caused by aggression and violence and traumatized behaviour. For which, there are a wide-variety of verifiable restoration processes and strategies. Certainly, justice does not involve the propagation or "equalization" of harm.

In contrast to *restorative justice*, *retributive justice* and *punitive justice* are reflexive in that they are [primarily] about equalizing the harm suffered by someone by causing suffering to the [targeted] other or by punishing them into contemplation. Even the notion of reparations is associated with the retributive form of justice; it is essentially the desire to force a change in ownership status. In many modern societies this "equalization of harm" takes the form of property usurpation, social isolation, economic monopolization, and forced mentation (and sometimes, accidental or pre-determined death). At the individual level it often includes a complete elimination of social freedom through structurally violent isolation (i.e., kidnapping, caging, jailing, and imprisoning). A retributive/punitive justice system may also be called: incarceration justice, criminal justice, legal justice, or State justice, all of which could be said to be the opposite of socially restorative justice (or "social justice").

There are two primary types of criminal justice system (a.k.a., punitive/retributive) in early 21st century society:

1. Adversarial system - a State (government/jurisdictional) prosecutor indicts someone, a defense lawyer defends that person, and a judge is supposed to ensure "fair play". An adversarial "court" [of justice] system will go after a defendant to seek a guilty plea regardless of if someone was hurt or they are guilty, because it is adversarial.
2. Inquisitorial system - the judge and the prosecutor are essentially the same person.

The inquisitorial process can be described as an official inquiry to ascertain the "truth", whereas the adversarial system uses a competitive process between prosecution and defence to determine the "facts". However, in either case, neither the truth nor the facts of the underlying societal issues that are the cause of "criminality" are never (or, almost never) revealed or called into question; because, in part, those "professionals" that are participating in the process would have to question their own professional existence and the very idea of a criminal justice system.

The circular argument of retributive justice is:

*"If you do this bad thing, I can do bad things to you, because only bad people do this bad thing, and bad people are "fair game" for good people (i.e. "me") to do bad things to."*

Further, and worst of all, early 21st century society's system of justice interjects the State as the paramount victim. As a result, aggressors are labelled "offenders" and they no longer have to face the personal pain or damage caused by their acts. Instead of being held accountable to their victims, they face representatives of the State, who have not experienced real pain as a result of the event, and who are financially profiting off of the situation. There is little opportunity or support for the "offender" to seek forgiveness from the victim or seek reintegration into the community.

Meanwhile, with the State taking on the role of "victim", the real victims of a violation are left out. In early 21st century society, many express a sense of having been re-victimized by the justice system, which rarely gives the victim any say in the outcome of a case, seeks collectable restitution for the victim, or even informs the victim as to when the perpetrator might be released and again be a threat.

When violations of person occur within a community, the community needs to do everything it can to rebuild the ties of accountability, trust, and mutual respect between those whose trustful relationships have been violated. And, in order to do this, there must exist a sympathetic understanding and compassion (or "sympathy") for why everyone behaved in the way in which they behaved. Therein, empathy allows for the establishment of a connection with someone who may be "lost in their suffering" prior to supporting them in forgiveness, self-sufficient restoration, and a re-directing of their 'locus of control'.

The concept of restorative justice maintains the recognition that an expression of behaviours are in part derived from conditions and conditioning - there exists a relationship between the individual and their environment. Hence, to reduce socially corrosive behaviours, the environment, which includes the conditions and conditioning that individuals experience, particularly the young and the soon-to-be-born, must be accounted for at every knowable level from the neurophysiological to the structurally economic.

Sometimes living systems need support and facilitation to restore themselves to their natural state of balance and harmony, of equilibrium, and of justice. Two generalized examples of this include the Earth's ecosystems and the healing mechanisms of the human psyche and body in cases of illness or injury.

In truth, violence is a process and not a singular act. Violence is not about "that guy", that "bad guy", the "perp", that "criminal", or the "villain", although the mainstream media would like you to believe that to be the case. Instead, repulsive acts of behavior are a product of a society that ignores human needs and maintains a

chronic, structural state of violence.

Every violent and aggressive act can be explored within an individual, as well as at the larger social level. It would be disingenuous not to state that this exploration may take the form of an 'intervention' when someone poses a danger to others (Read: community safety), which doesn't mean "writing off" the individual. Intervention can be applied incrementally as much as physics and our decision system will allow (through informed response and not impulsive reaction). With skill and verified experience we can act with greater transparency, coherency, and accuracy in our formalized socio-economic, safety response to situations of conflict and violation. When dealing with someone who is a potential danger to others, then there has to exist some form of containment or restriction from sensitive positions, which is not equivalent to imprisonment. Even within containment there will still be cooperation and restorative communication with others outside -- finding ways of healing old wounds, which in many cases, were a factor in the hurtful behavior. Herein, there is an empathic causality which might be wise for us to recognize.

Also, it is important to recognize the concepts of 'mental capacity' and 'competence' as elements of restorative justice. A person with brain damage may, for example, not have the [functional] mental capacity to understand a situation of which s/he has become a personal part due to a decision s/he has taken.

Herein, the notion of a 'social intervention' also involves [in part] looking at a social problem as a whole instead of independently (i.e., thinking systematically), which brings a needed simplicity and unity to our actions during a state of conflict and the transforming of systems.

Certainly, those who have become or who may see themselves as "victims" are not tools to be used in a political, or other, agenda. Instead, victims deserve as rational an analysis of the incident as individuals in society are capable of providing as an orientation toward the prevention of its re-occurrence.

Government, per se, does not exist at the systems-level of a community - there exists organization and coordination, but not "government" or authority. A community is [in part] a set of common interrelationships, a "living" dynamic [of fulfillment]; it is not something to control. Whereas government seeks to control relationships, a community of individuals seek to recognize, understand, and re-structure [toward fulfillment] the complexity in existent interrelationships. Therein, when problems are understood as systemic, then a new mindset emerges, which replaces retributive justice with restorative justice and an inquiry into the systemic causative factors of socially symptomatic problems. Then, in the re-arrangement of any society, there must always exist two synchronous paths, the individual and the system(s) of which the individual is a part. Accordingly, to solve a social problem there must exist an examination of the causal system relationships

themselves.

Simply, there are two ways to facilitate the improvement of human life:

1. Improve the life of an individual through [f]actual fulfillment while facilitating a refined moral orientation toward living consciously, purposefully, and in, self-stable integrity.
2. Re-design the community's dynamics and systems to more effectively and efficiently facilitate the freedom of individual fulfillment in community. This is an orientation toward the improvement of the life conditions of all individuals.

At an individual level, justice may involve the process of "rehabilitation", as restoring someone's full well-being and self-directed fulfillment. And, it may involve improving the [geometric] architecture of our language and our thought so that we communicate our essential[ly similar] selves more clearly. Herein, societal interventions might include: research studies into contributing factors a behavior; transparency in the community of ongoing findings, developments, and modifications; and participatively redesigning systems so that the dissonance (possibly expressed as violence) is less likely to appear in the future due to a more fulfilling overall structure. Fundamentally, better behavior should not be expected when the structure of the system in question does not encourage better behavior.

Restoration and punishment are incompatible concepts - one does harm whereas the other restores from harm. One is not even an alternative. Restoration is the reduction of suffering through the reconnection and integration of relationships that sufficiently fulfill an organism's needs. Punishment exponentiates the inflammation and suffering that is already present. That said, it is true that an aggressor might experience certain phases of the process of restorative justice as painful and burdensome, so they would view the claim that they are not being punished when they are subject to restorative justice interventions as disingenuous and hypocritical. Therein, it is all about the biases present in the perspective, warping someone's perception that their needs are being fulfilled when they are clearly not and they have harmed others.

Theoretically, trauma can cause individuals to dissociate (that is, mentally compartmentalize) their painful experiences, and restorative justice is [in part] is the application of modalities that facilitate the re-engagement someone's self-esteem, their self-directed and empowered nature.

Before overcoming their own self-limitations most people stop and deny, because piercing through the conditioning can be very painful and vulnerable; some experiences hold painful and vulnerable feelings and their release requires the processing of these feelings in a restoratively safe set and setting. It is not necessarily

"easy work". And in time, all fulfillment inhibiting programs and self-limitations start to break down under the light of truthful experience, method verification, and self-work (as willful self-engagement).

Guilt is one emotion that sometimes arises with the conceptualization of justice. Guilt is a damaging emotion, and it is a tool used to turn obedience into a compulsion. Religious guilt, for instance, is based on sin, which is defined as disobedience to an outside authority. It becomes an addiction, a compulsion, which is meant to stay with you for the rest of your life. The concept, its thought structure, is designed to control consciousness and keep consciousness "in the fold". Taking responsibility for one's behaviors should not lead someone to remain in a state of guilt [as a healthy state of processing], but rather to a more conscientious and rationale approach towards one's thoughts, words, and actions, which can only be healthy. The desire to live a healthy, fulfilled, and pleasurable life is innate in us; to not allow it is to fight nature. Herein, it must be asked, what does terror do to people's consciousness? It allows for greater [external] control over the mind. Who is the greatest terrorist in a given society?

**QUESTIONS:** *What are the environmental pressures that emerge around an individual to create a behavioral act that humans commonly find repulsive?*

#### **4.3.1.1 Power[-over-others] changes how the brain responds to others**

Researchers, Hogeveen et al., (2014) randomly put participants in the mindset of feeling either powerful or powerless. They asked the powerless group to write a diary entry about a time they depended on others for help. The powerful group wrote entries about times they were calling the shots. Then, everybody watched a simple video. In it, an anonymous hand squeezes a rubber ball a handful of times — sort of monotonously. While the video ran, the researchers tracked the participants' brains, looking at a special region called the mirror system. During observation, 'motor resonance' was determined with transcranial magnetic stimulation (TMS) via measures of motor cortical output.

The mirror system is important because it contains neurons that [in part] become active both when you perform an action and when you watch someone else perform a motor action (e.g., squeezing a ball or changing a facial expression. Whether you do it or someone else does, the mirror system activates. In this small way, the mirror system could be figuratively said to "place the observer inside a stranger's head". Former findings suggest that the mirror neuron system plays a key role in our ability to empathize and socialize with others - they help us to learn and to understand the intentions of others.

The researchers wanted to see if bestowing a person with a feeling of power or powerlessness would change how the mirror system responds to someone else

performing a simple action. It turns out, feeling powerless boosted the mirror system — people empathized highly. The findings were, "when people were feeling powerful, the signal wasn't very high at all." When people felt power, they really did have more trouble getting inside another person's head.

*High-power participants demonstrated lower levels of resonance than low-power participants, suggesting reduced mirroring of other people in those with power. These differences suggest that decreased motor resonance to others' actions might be one of the neural mechanisms underlying power-induced asymmetries in processing our social interaction partners.*

"What we're finding is power diminishes all varieties of empathy," says Dacher Keltner, a social psychologist at University of California, Berkeley, not involved in the new study. He says these results fit a trend within psychological research. "Whether you're with a team at work [or] your family dinner, all of that hinges on how we adapt our behaviors to the behaviors of other people," he says. "And power takes a bite out of that ability, which is too bad." At a fundamental level, power [over others] changes how the brain operates.

Often, people who hold power over other become less capable of discernment over time, they loose more and more compassion, they increasingly see problems where there are no problems, they increasingly create conflict where there would otherwise be no conflict. Holding power over others changes the brain, and the change can be fast (e.g., Stanford prison experiments) or slow (e.g. an officer or warden who losses compassion and moral discernment over time).

### 4.3.2 Distributive justice

**INSIGHT:** *No person earned having the Earth here. Nobody earned the resources under the ground and in societal technologies. Matter and information are not something that naturally should belong to anyone. This is a mentality that has been lost to many for quite some time, and to which many are reawakening.*

Distributive justice refers to the equitable distribution of habitat [urban] services and objects. All social systems, regardless of philosophy, beliefs, or social customs, ultimately depend upon natural resources and a consideration of their distributed allocation to maintain a standard-of-living, quality-of-life, and ultimately, human well-being. Humans have needs that are met, in part, by economic systems - systems that [at least] transform and re-transform resources into functional goods and services. Distributive justice involves the application of the ideas of equality and fairness to a 'socio-economic reference factor'. Distributive justice is also sometimes known as equity justice, economic equity justice, or access justice. This reference could be human well-being, it could be a standard-of-living, or the quality of goods.

It might also be equal access, or personal profit and property acquisition. Herein, distributive justice refers to the condition of access equality in the fulfillment of common human needs through the cooperative and organized sharing of our ecological resources and our intentionally architected 'habitat service system' (this system is described at length in the Decision System specification) without an administrative class of governors or the encoding of competition.

**NOTE:** *In community, distributive justice is found in providing enough fulfillment and well-being that people's experience of inequality is reduced to a level where needs are accounted for and preference is expected.*

To achieve a condition of distributive justice there is the "equanomy" principle that states that it is optimal for a population to reduce the difference in access between individuals and populations, and thus have more togetherness and flourishing. The concept, "equanomy", comes from equa- "shared or common", and -monia, a suffix signifying action, state or condition).

Distributive justice asks the questions,

*How do we reduce inequality in access to fulfillment among the global population?*

Distributive justice (i.e., economic equality) does not involve the concepts of entitlement, reward, or duty, but is instead founded upon a common empirical understanding that if fairness and cooperation aren't accounted for in the design of the systems that fulfill the needs, wants, and preferences of individuals, then socially corrosive behaviours are highly likely to develop, and as the gap widens, conflict becomes an increasingly likely outcome. In community, it is wrong to view "equal" habitat access from the perspective of entitlement, which denotes that someone who does not own a piece of property is entitled (i.e., has a claim on the title of that property), simply for existing or being present in a given geographic location (and possibly, being of a specific demographic). In a society structured via access without property there is no such thing as entitlement (over another's, or others) because there is no such thing as property.

Distributive justice exists in contrast to that which is known as 'corrective justice'. Corrective justice involves the idea of "liability" (Read" debt or punishment) in rectifying the "injustice" inflicted by one person on another. This concept of justice focuses on whether one party has committed and the other suffered a "transactional injustice" or "negotiated injustice". Although corrective justice claims to feature the maintenance and restoration of justice between the parties in a transaction (or negotiation), it is in fact a "blind" form of justice. Principally, it is blind to the reality that there are ecological and other [persistent] systems dynamics at play. Second, it is blind to the systems-

level view of the social and economic context in which the transactional injustice is said to have occurred (i.e., it is blind to the persistence and ongoing of social and economic interrelationship) -- in community there is an ongoing dynamic of relationship, whereas in the market [abstraction], every transaction is claimed as a finite thing with no persistence of relation. It is further blind to the probability of usurpation of the entire process of 'corrective justice' itself by any party with greater power. It is also blind to the fact there no such thing in nature as property, only access exists (this is discussed at great length in the Decision System specification). And lastly, it is blind to the empirical lifeground and to the nature of human need.

Descriptions of corrective justice sometimes go on to state that the "law" is the wisest correcting force. The "law" re-establishes the initial equality present before the "injustice" by depriving one party of any unjust transactional gain and "restoring" it to the other party, which may be the government on behalf of its "public". Here, it is possible to see the similarity between retributive justice and corrective justice in that neither form of justice actually perceives human needs as a factor, and they are both forced-based equalization strategies.

Aristotle likened the parties partaking in corrective justice as two equal lines (Aristotle, 350 BCE). In "Nicomachean Ethics", Aristotle then goes on to state that injustice upsets that equality by adding to one line segment a line detached from the other. The "correction" removes that line segment from the lengthened line and returns it to the shortened one. The result he said is a restoration of the original equality of two lines. Clearly, humans are not lines and his rationalization (or rationalized analogy) for the application of corrective justice is invalid for multiple reasons. Not the least is that its premise assumes that force is a valid means to justice and that two parties enter into transaction in some mathematically perfected and unequivocally "equal" state. Essentially, Aristotle is himself committing the fallacy of equivocation in his metaphorical analogy of a line representing a human.

The question of entitlement, reward, and duty and other possessive and extrinsically motivating language involves an entirely different contextual paradigm of thought than the one present in an empirically lifegrounded community. It represents a thought paradigm that does not maintain a systematic solution-orientation, and often originates from a place of force and authority. This rival and more common definition of justice [in early 21st century society] as "giving to everyone their due" (or "equal proportion") is largely derived from the notion of the human being as a [singular objective] possessor, eventually leading to hierarchies and institutional establishments of possession.

Therein, justice loses the sense of being the harmonious coordination of individuals' interrelationships over time to fulfill human needs, and is re-defined as the "morality of aggression" over the defense of property abstracted

from environmental and systemic factors, including human need. Property becomes identity, a division of unity, and potentially even, State "personhood" - division of the awareness of universal relationships (i.e., separation from unity).

The term 'individual' in Latin means "not divided" or "in-divisible" ( in- ["not, opposite of"] + dividuus ["divisible"] from dividere "divide" one with all aspects of the self). The 'individual' is the experience of the self, which is indivisible (as in, not separated). Whereas, 'personhood' may be defined as the continuation and continuity of identity over time (i.e., this is me, this is me again, this is me, this is me again). But, when a person defines themselves by their property, then they have broken the connection with their true identity. Property defines their identity and justice becomes the "just" use of force in defense of property, in defense of the "abstracted self". This was an early notion of justice suggested to Socrates who rejected it as a universal principle, since it would necessitate one's returning to individual violence as a solution to social ills with potentially disastrous consequences for everyone. The codification of property naturally threatens force while it defines the individual in the defensive.

Plato modified this common view of justice in "The Republic" to mean that each person should perform their own function in the State so that the proper functioning of each part - the commercial, the military, the administrative - would result in justice. This view of justice regards human beings as "complete" only in relation to their work, not in relation to objective reality or even to one another. It does not understand the authentic human person to be essentially related to others in a verifiable sense. It is the natural perception of the biologically & psychologically immature, that there is no existence outside of one's own perceptual identity.

Once society delineates property it is delineating the defensive use of force with that property. Also, a society that delineates property may eventually begin to see everything in existence as property, leading to the defensible commodification of [the information system of] reality itself (e.g., intellectual property) - it feeds on itself - it is a principal destabilizing concept. The repetition of some conceptual patterns of thought produce a destabilization in the fullest expression of embodied consciousness. With property comes the reinforced opportunity for power and reward, which are habituating experiences (i.e., they replicate in a reflexive manner without human conscience). Although property may have some initial benefits as an incentive system, it is destabilizing in its nature and will eventually lead to its own collapse. Property is just a social agreement, a form of social organization. It is not something that is written into the laws of the universe.

In a property-based society, ownership is protected by violent armed force, which is advantageously monopolized [by entities in the larger interrelated socio-economic system]. Key resources needed to fulfill humanity are actually under armed guard. This is

where early 21st century society is now, this is early 21st century society, and it is neither a joking nor a happy matter. It is a very real and serious reality. This true reality, the real world, is harder to see in the information chaos and confusion of early 21st century society, but is more clearly visible in the types of relationships that exist between multinational commercial industries and tribal, native, and shamanistic societies.

In order for force to remain effective at a social level it must appear to have the potential of being applied to the maximum, to death. For example, if taxes are not paid, then kidnapping occurs, and if you are caught trying to escape the cage you might be killed, or at least your life will be made much harder.

There is generally a weapon wherever you are talking about property. There is a "right to force" in maintaining one's property as well as a legitimate gateway for the use of force to death in the self-defense of property. Of course, this logic is actually valid within a property-based paradigm. Unfortunately, a property-based paradigm is out-of-touch with the accessible real world, and hence, so is its logic. In reality there is not property, there is only access.

When access to life supporting resources and technologies can be controlled, then a power disparity is created that is globally problematic for the distributed fulfillment of human need. Such an environment naturally generates behaviors that cause suffering [as a lack of fulfillment] and limitation [as a lack of information] in society.

Ownership of a resource creates a "bottleneck" to common access. Others have to "go through the owner" in order to gain access to the resource they may need for their very health and survival, or for the organization of a more fulfilling life and community system. Such a socio-economic organization transfers (or gives) power to the owner at the expense of others. With power comes great potential for the acquisition of hierarchical control over the fulfillment of other's needs.

Ownership requires obligational exchange and force to maintain the [scribed] obligation. Therein, entries into the ownership market (i.e., commercial entities) define the boundaries of choice, and today, they do so through what is commonly known as 'purchasing power'. Essentially, an entity in modern day's ownership-market is only as free as its purchasing power. Choice and power are no longer free under nature and participative social cooperation, but under an abstraction - that of money, profit (more money), and power. Therein, choice is made available [into the socio-economic system] by profit driven entities in the market (Read: a place for "marketing ownership", the producing and purchasing of goods and services by capitalists and laborers).

Free market philosophers like to talk about dispute resolution organizations (DROs), which become the "correcting force" in their [abstracted] market-based paradigm of thought. To them, DROs represent [the force of] corrective justice.

Profit is a harm inducing orientation through its

incentivization of deceptive behaviors. If "you" damage something and "your" profit (or livelihood) is at stake, then you have an incentive to conceal the harm. The very structure of some incentive systems (or "some systems of incentive") cause otherwise good people to behave quite badly [environmentally, socially, individually - wherever they might be causing and hiding the harm]. Incentives can be perverse. "Your" natural desire to survive can be channelled by established institutions and Statist agencies into having "you" collaborate in a harm-producing system and not even be aware of it.

In particular, coercive forces want individuals to own themselves, for it is only thereafter that they can coerce the individual into selling himself or herself (and his/her labor) in the marketplace. The idea that objects can have intrinsic value, or even the existence of subjective value, leads very quickly to the idea that the ownership of person, land, resources, and even knowledge is a "right", a "property right". Such a "right" either comes from authority or it comes from nowhere. If it is believed to come from authority, then there will exist monopolization. A "right" (i.e., positive right) is [in practice] a privilege from authority. And, since authority doesn't actually exist, rights do not come from anywhere, they do not actually exist. There is no authority [in the real world] to give a "right". And fundamentally, the belief in authority involves [in part] the surrendering of one's own mind to some higher power (or "authority"). The notion of "rights" are discussed at length in the Decision System specification.

When force-based institutions are seen for that which they are, then the possibility for non-coercive social cooperation and human flourishing become probable. Therein, the individual and the social are fully realized in a larger societal context defined not by "rights" and "liberties", but by the socio-economic system (or life-system) functioning as a distributed network of participation and cooperation toward a commonly meaningful purpose.

What is the purpose of property? The commonly stated purpose of property is to provide instant access or use of something to the owner at any particularly desired time. Therein, "property rights" answer the question of who controls what: who has controlled and instant access to a thing when they want access to the thing? However, is it necessary to "own" something to have access to it? No, it is not necessary to apply the concept of ownership when the concept of access already exists. The application of ownership is highly dependent upon a societies chosen socio-economic organization and orientation, which may engineer scarcity or thwart scarcity [through the application of biomimicred ecological principles reinforcing ecological pathways that influence abundance and population surthrival (Read: survival and thriving)].

Under conditions of scarcity, property is more likely to exist, and so is authority. And yet, instead of looking at the world as scarce, one might look at it as if it were an artwork that required participation and

appreciation to continue fulfilling its experiencer. In place of the perception of scarcity one might recognize the potential for common ecological principles (i.e., accurate information), which when applied are likely to generate states of abundance in fulfillment.

Ownership is not a systematically efficient means of access at a community level. Property entails a whole host of unfortunate, and some might say tragic, consequences. In a community, property will always generate problems in the flow of what are truly persistent interrelationships. What is actually needed, and actually exists, is access. If "you" have access to abundantly comfortable transportation, do "you" need to own a car? Can "you" rent a car or checkout a car from something akin to a car library and still access it whenever you need. Certainly, human intelligence can efficiently organize resources to meet common access needs. That said, there are some basic necessities that make sense to "own", or more accurately, have exclusive access to (e.g., personal hygiene items and a personal living space). Yet, if someone has the freedom to travel and move whenever or wherever he or she wants, then is there any reason to claim a home as property? These issues are articulated in full in the Decision System specification.

Distributive justice might be considered a form of fairness: an impartial and non-opinionated economic distribution. It involves the distributed access of resources, goods and services in a "humane", person independent and effective manner for the entire population of the community - it is a process that generates a state of persistence in equal access. Herein, there is no separation between what one person can access and another can access [qualified by safety & localization protocols discussed in the Decision System specification].

The statement that "all people are equal" is entirely meaningless without a context and an objective physical referent. All humans are not equal in their abilities, their qualities, their passions and interests, or their personalities; the word "equal" does not make sense in this context. Yet at another level, to say that all humans are equal is to say that they are all alike in some manner. The manner in which they are most alike, are most similar, is their common needs and states of expressed being (and the highest common direction that all actualized humans desire). And, if we all have similar human needs and we can realize a similar common direction, then the idea of 'equality' as applied to a social system refers to equality in access to the community; wherein, all contributors contribute to the whole of the community.

Equality as it concerns the distribution of resources might be valued by a community that recognizes that the unequal distribution of these things by individually desired quality, such as status, prior wealth, knowledge & skill, labor capability & past work history, resume check list, birth, power, possession, etc., is likely to manifest a divisional system in a population that generates de-

structuring behaviors leading to seriously destabilizing social and environmental costs.

Justice does not involve an "obligation" to bring about equality (i.e., the term "obligation" interjects the notion of authority), but it is about a empirical and rational recognition that equality of access leads to a higher likelihood that every individual will be better off. And, by exchanging and participating through that value orientation, and by encoding it into our decision system, we maintain an emergent and intentionally fulfilled community.

Having empathy and compassion for others is the root of all forms of justice. Yet, justice isn't a "required" value; it is a value arrived at through observation and reason, through the integration of experience, and through the re-structuring of a truly just society. It is an objective value related to how effectively individual needs are fulfilled in both a local and a societal context. Wherever justice is "required", then it is not aligned with fulfillment.

Massive injustice lies at the root of much of the contemporary distribution of wealth. The possession of land is the most obvious example. But other kinds of force and violence—the internal passport system implemented in eighteenth-century England, for instance, or the engrossment of unowned land by State fiat—have also served to deprive humans of the ability to participate in the sharing of access through what is commonly known as a "commons". The beneficiaries of this kind of material aggression have varied to some extent, but they have consistently belonged to politically and commercially favoured groups—they've been either members of the power elite, their families, or their associates.

Is it not desirable to design systems that ensure freedom of access to those goods and services that individuals need to be fulfilled and feel satisfied? Is this not a desirable state? And yet, the idea of 'property' negates the state of distributed access. In a community setting, self-directed freedom is most likely to arise when the following two conditions are met:

1. When everyone's baseline material needs are sated such that material acquisition is no longer of paramount importance and competition over resources becomes irrelevant (i.e., scarcity of life-need is sufficiently reduced to reveal a higher potential direction). In other words, 'social justice' exists when everyone has achieved a state of strategically designed certainty in the fulfillment of their needs that would otherwise cause primal and anxiety driven behaviours to appear, derailing everyone's highest fulfillment.
2. When everyone in the community either owns the same or no one owns anything, but has equal access to everything (i.e., distributive justice). The latter being the most efficient form (i.e., no one owning anything). If equal access to the fulfillment of needs does not exist then consequently envy

will exist, which leads to (or "breeds") contempt, resentment and jealousy as the emotional resultants of envy. Actions and behaviours derived from these emotions reduce the stability and freedom of a community by injecting into it an increase in the probability of reactively corrosive social behaviors. Relationships built upon these emotions cannot sustain a functioning community.

That which is essentially sought by a community is a conditional [dynamic] state where no individual has coercive power or advantage over other individuals in the continuous and systematically re-creation of society and the fulfillment of common human need. It is a system of cooperative access, not a system of market ownership.

It is important to clarify here that the desirable value state of "distributive justice" described herein is not equivalent to the governmental, administrative class process [state] of "wealth redistribution" - wherein the government takes by force and re-distributes that which is considered wealth (e.g., currency). It is inaccurate to equivocate the two concepts. If the term 'distributive justice' is in any way defined as authority's role in redistributing "wealth" and providing services, then it is not equivalent to the definition of 'distributive justice' described herein.

Commodification, which is [at least] the exchange of some form of property in the market, destroys the fundamental premise or relationship between a service [from nature] and the human need it is intended to fulfill. And further, commodification generates artificial scarcity by making things increasingly inaccessible as prices increase, inflate, and are "hiked". Maybe, instead of looking at entrepreneurs as heros, we should be offended at the idea of taking a natural lifegrounded service [that may not have previously been commodified] and charging for it. To perceive matter and information as property is unfortunate, for property, itself, is not a sufficient concept for orienting a society toward human fulfillment.

There is a question sometimes asked of those who maintain that there exists value in the commodification of anything which can be commodified - that the "voluntary" market should penetrate all crevices of one's life. That question is, "Would you charge your daughter for protection?" This is quite a poignant question and when answered fairly as "no sane and healthy person would ever charge their daughter for protection," it reveals the degree to which someone sees their responsibility and relationship to (or importance of) another organism of our species on Earth. A father would not even consider the safety of his daughter as a product in the marketplace, nor any other beloved member of his family. A 'family' consists of those individuals to whom someone has a degree of responsibility to and is in a persistently supportive interrelationship with (at least, ideally), who are important to someone, and to whom someone is in

turn important too. When this understood relationship is more deeply considered, then the question arises: "Who is your family, who are the people you share and cooperate openly with? Who are those people you exist in a persistent, participatively voluntary and supportive, caring (or care-taking) relationship with? Who are the people you desire to support and protect? Who are the people whose needs you view in common with your own? Who would you organize cooperation with in the mutual fulfillment of need? Who would you not compete with at a socio-economic level?"

**MAXIM:** *To live with dignity there has to be a baseline.*

These are useful questions because they present an opportunity to those who believe in [the] commodification [of existence] to perceive their true "level of care" in the world:

1. Are you **ego-centric** and care only for yourself;
2. Are you **kin-centric** and care only of blood relatives (some maybe more than others);
3. Are you **ethno-centric** and care about the tribe, race, village or nation;
4. Are you **world-centric** and care about all humans;
5. Are you **earth-centric** and care about all living beings on the Earth;
6. Are you **truth-centric** and care about what it means to actually "care about" something;
7. Are you **openly-centric** such that you ask questions about the truth of consciousness and the fulfillment of all known beings in the universe?

The very notion of "commodification" is tied up with someone's level-of-care of others in the world as well as their understanding of the persistent dynamics on this planet. If you wouldn't charge your daughter for protection, but you would charge your neighbour, then you have superficially limited your empathy to and care for others in the world.

Prejudices rise and fall as people preach to promote them or teach against them, as doctrine is interpreted toward peaceful interaction or toward force and retaliation -- [from a systems perspective] doctrine is always a form of dichotomy and duality [for it is based upon interpretation]. In the interpretation of doctrine, an individual may begin to inquire more deeply into real existence and develop and appreciation for verifiable experience, or they may dip more deeply into belief and fear.

Prejudice is nurtured; it is often the product of environments of interpretation and fear, which is easily stoked up and often takes years to quench. One manifestation of prejudice is that when great numbers are seen as less deserving, as slaves, paupers, as another class, as outsiders, or just "average" or "other", then a minority can describe their own behavior, not as greed, egoic-projection and violent, but as simply receiving

higher rewards because they are a different kind of human being, who deserve to be "put on a pedestal" above those they view with a prejudice. It is unwise to become pejorative of any people, for we are all walking the same path and we all exist in common.

We are of our highest potential when we recognize that we are of one human family among a universally cosmic family. Technology has helped us realize that we are [at least] one global family, that we can drop all the territories (e.g., clans, nations, states, and other landmass distinctions and artificial distinctions) and become humanity, Earthlings, our unified, consciously sourced, selves. Our communication networks are global. Our astronauts and engineers show us photographs of Earth in minute detail. Technology can help show us more of who we really are. And, the exploration of consciousness may show us our timeless cosmic nature. Technology and consciousness exploration enable a recognition that we are all one. However, technology does not drive change or create greater equality; instead, accurate [scientific] information enables change toward a more orientationally fulfilling direction. The intention of a conscious identity, an individual, drives change toward technologies that allow for greater states of freedom, or technologies applied toward greater states of self-enslavement. When technologies work for us they empower us and when they work against us they enfeeble us.

**NOTE:** *If someone or some organization owns an idea, then they can stop that idea from progressing. Who owns the idea of justice in society? Is it some form of the State? Is it the market? Is it someone on a stage with a box in front of them? Is it someone in front of others in a classroom?*

### 4.3.3 Participatory justice

*A.k.a., Contribution justice.*

A digital, technological economic system allows for the massive self-aggregation of individual effort around the expression of common value (i.e., a commonly valued [system of] orientation). Therein, highly complex social artefacts, such as an open source transportation system, a universal encyclopedia, and a universal computer + operating system, are entirely possible through the process of open and free contribution to a common project (or economic demand/inquiry). Herein, society becomes an emergent "project" with which anyone can participate and everyone benefits. This process is sometimes referred to as 'peer participation' or 'peer-to-peer participation' (P2P). The peer participation process may be extended to include the iterative and cooperative redesign of the social and economic decisioning systems themselves. In a true "state of justice", contribution to society is not based on the narrow selfish pursuit of personal gain at the expense of others. Community benefits only when everyone has the opportunity and

the incentive to benefit.

**INSIGHT:** *In the state of social fairness (Read: equality/fairness of access) exists the state of equal opportunity in participation.*

It is important to note here that notion of life being voluntary has limits; it is important to recognize that it is not voluntary to live within the bounds of one's ecological environment. Individuals are bound by the ecological systems that sustain them, systems which dictate the conditions and resources available. This inherent dependency underscores the significance of restoring and adapting to the natural limits imposed by the environment, thereby highlighting the necessity for sustainable living practices that ensure the longevity and health of both the individual and the ecosystem at large.

In a participatory process the expression of value originates from and remains within the community, in a 'commons' of ongoing interrelationships. Participation is a platform and a process that maintains a commons-oriented approach where input, processes, and output are free from private appropriation through [claim of exclusive and defensibly rightful ownership to] property. Herein, individuals in the community contribute open data, knowledge, open code, open design, and open effort to a common pool of information resources for coordinated and value-oriented fulfillment. Participation is an organizational process that exists to maintain an operational platform (or structural dynamic) for the benefit of everyone in the community.

A peer participation system is designed so that individual and "collective" benefits coincide. Herein, a contribution, for whatever reason, creates something universal, something potentially useful to everyone as it is open to use and modification by anyone [qualified by safety protocols]. Within such a system the universal benefit exists regardless of motivation -- even selfish motivation remains universally beneficial. If someone were to fix a bug in Linux (an open source operating system), because they were using the system and desired resolution of the bug for their own selfish wants, then it automatically creates a better operating system that everybody can use for free on any computer.

Herein, peer-to-peer is a open and relational dynamic, a particular organization in which people relate to each other by contributing to a whole. For example, the Internet is a cooperative peer-to-peer construction of organization for the benefit of everyone based upon formalized [standard] protocols. In the Community, peer-to-peer is applied toward the sharing of a common lifeground and distributed re-structuring of information toward a similar direction of purpose: toward the cooperative re-creation of systems that meet the needs of individuals in the community. It is a form of free, volitional, and truly voluntary association without external reward or punishment, without erroneous incentives, and therefore, it has the potential to engage intrinsic motivation toward the purposeful fulfillment of individual need. In community, we create because

of who we are, we don't need to make money or any other abstraction to create; principally, in community we become our intrinsically motivated selves.

Peer participation is based on the distribution of tasks [and constructors] across the community. (Deutsch et al., 2014) Unlike an industrial system, it is not based upon a division of the individual through ownership-labor (i.e., the market economic "division of labor"), but on an intentionally designed information organization that enables systems-level transparency such that participants know what needs to be done (i.e., tasks) and what the most efficient and effective allocation of effort and resource (i.e., constructors) is toward the fulfillment of those needs. It is an open system of organization, communication, and construction (or "production and recycling") that allows people and technological (i.e., applied knowledge) systems to aggregate their skills and resources toward the fulfillment of the needs of the community organized by open tasks and projects (i.e., sets of tasks). Instead of a society based upon industrial growth, a redefinition of 'justice' as participation facilitates a movement toward a life affirming and life sustaining society.

Herein, a distributed peer-to-peer system manifests as a technical system of collaboration that enables the sharing of information and equality in access, which maintains a highly abundant, stable and sustainable community. Collaboration means working together cooperatively; it means applying energies, effort, and personal power in a common direction through a similar value orientation. When someone is living in a fluidly interdependent group (i.e., a distributed community) the best way to mitigate risk is through sharing; herein, sharing promotes resilience.

The peer participation process is significantly different from socially-hierarchical (or "socially vertical") processes, which are based on 'panopticism'. Whereas the panopticon is the model for external surveillance, panopticism is a term introduced by French philosopher Michel Foucault to indicate a kind of internal surveillance. In panopticism, the watcher ceases to be external to the watched. Panopticism exists in contrast to holism (or "holarchy") where everyone in the society, regardless of [active] participation, knows (or, can easily access) what is occurring with and within the socio-economic system. In other words, the system that organizes fulfillment is transparent to all in the society regardless of active participation.

Peer participation involves communication and effort on a horizontal scale without the need to ask permission of an authority to contribute. Hence, its very design allows for the global scaling of small group dynamics. Essentially, the overall design for the Community (i.e., the design specifications in full) can be scaled to the size of a global society if the idea of peer participation is effectively integrated at a core structural level.

Individuals involve themselves in the participatory process because they either desire use of the output or they consider that it is going to be useful to someone

else. Hence, one of the principal motivations for effort expenditure in this environment is the fact that the output maintains a 'use value' to someone (i.e., it has a purposefully thought out need). Individuals are highly unlikely to contribute in an intrinsically free manner to a project when their work can be appropriated by someone else and not shared. And, individuals cannot be said to exist in a state of valued cooperation with one another if they do not have open and free input. Further, open and free access to outputs is required for coherent[ly oriented] adaptation - participatory adaptation through user feedback to user needs - participation becomes its own feedback mechanism.

The model of peer participation described herein is sometimes known as 'peer production', 'commons-based peer production', and 'mass collaboration'. It is a process with the following characterization, in the negative and positive:

1. In its negative characterization it involves:  
De-institutionalization (it exists beyond fixed organizational formats and fixed formal rules), de-monopolization (it avoids the emergence of groups of individuals who monopolize power, such as governance structures, industries, and business entities), and de-commodification (i.e. production is for use-value, not exchange or trade value);
2. It is positively characterized by sharing within a community of commons. It is based upon free participation in regard to input, processing, and output, and free usage even by non-producers. A participation model involves the accessing of a common pool of shared resources for systematically fulfilling identified needs, wants and preferences in the community. It is a cooperatively organized commons that facilitates access to resources and outputs, and ultimately, the sharing of naturally life-grounded services.

A community is equivalent to a natural living system. In similarity to a natural living system there exists a "circulation of the commons" and this is how the commons "reproduces" itself: open input; a participatory formal and emergent process; and a commons-oriented output. Notice that it is an adaptive process. People contribute and add to the emergently designed and constructed system, not because they are trying to gain from it [at another's expense], but because their contribution has a deeper meaning.

In order for peer production to exist there is a requirement for an enabling common organization, a similarity of architecture and of infrastructure. This organization is intended to service the needs of the community and facilitate [through enabling technologies] the arrival of equitable economic decisions based on a process of participation and re-formalization [as new and more accurate information becomes available in the decisioning space]. This organization

must maintain a structure for systematically fulfilling the needs of individuals in the community if it is to remain orientationally useful (i.e., it must correct for feedback of information into a re-constructable or re-formalizable system). Herein, the Community conceptualizes the idea of a 'service system' to systematically organized the fulfillment of human needs. The 'service system' is a constructed and formalized system for servicing the needs of individuals in the Community. The concept of a 'service system' and the types of service systems that exist in the Community are described in detail in the Decision System specification.

It is entirely possible for a society to design social and economic organizations to maintain a collaborative platform for enabling and empowering participation by individuals. Wherein, an open and collaborative social system will in turn create an open and collaborative economic [decisioning] system through the encoding of its social values.

When someone becomes involved in making and creating in their community, then they are naturally inclined to acquire an awareness and appreciation of what the process [of creation/construction] involves. Herein, every individual has the power to make a synergistic difference when given access, which leads to a state of stigmergy. (Dipple, 2011) stigmergy is a mechanism of related, but indirect, coordination between agents (and actions) and their environment (i.e., it is a *mechanism of self-organization*). In a stigmergic process, global system behaviour emerges from the indirect interactions of the agents that occur by modifying the environment. (Bourjot et al., 2003) The idea of stigmergy is that information traces left in the environment by a previous action stimulate the performance of a next action, by the same or a different agent. The term was derived from the observation of insects in their food gathering and construction processes. Subsequent actions tend to reinforce and build on each other, leading to the emergence of coherent, apparently systematic activity and behavior. However, without a sufficiently accurate model of the environment it is difficult to predict the outcome of self-organisational methods based on this mechanism as the global behaviour emerges through interactions with the environment; hence, falsifiable [scientific] knowledge is necessary for orientation and navigation in the real world.

Science has recently shown humanity that the fiber pathways in a human brain, the "connectome", are not isolated structures; in a very real sense, every pathway in the brain has a "relationship" to every other pathway given by their mutual position in a single unified grid structure. Through scientific understanding and technological construction humanity can now see the whole material structure of the brain. The "connectome" is a single unified whole structure that fits into a single framework which expresses developmental rules and per speculation, functional rules also. Maybe if society began to recognize existent relationships and

participated in them intrinsically, then it would be a lot closer to acting like a unified and interrelated whole, a "social connectome" for human fulfillment.

#### **4.3.3.1 Participation and the role of technology**

Technology can extend the functions of [at least] human cognition, locomotion, and perception. We as humans have always recognized that the powers of our mind and the motion of our bodies are limited to some natural degree. And, we have always made devices to compensate for these limitations. One of the most remarkable technological inventions is writing. If you think about it, writing is a technology for storing information outside of our heads so that we don't have to remember it. An abacus was an early calculator. Carriages move people faster than their legs can move. The bicycle is a technology that extends our muscles and ability to locate. We have a great history for recognizing this, and one of the defining elements of the human species is as a technically complex tool maker and a tool user. As humans, we are capable of recognizing our present limitations and also of "re-processing" (i.e., modulating the dynamics of our common human system) our world to build technical services and devices that provide relief, caretaking, and life betterment.

Go out in the woods with no clothing and see how long it takes to succumb to exposure ... because your clothes are a technology, shelters are a technology, food preparation with fire involves technology; hunting effectively involves technology. Even permacultural practices involve the communication of knowledge across time.

If you think about any technology, but computers in particular, the only reason we have computers and the only reason we value them is for our own purposes - to extend our ability to understand the world around us and to make better decisions. This is the purpose for their existence. It would be wise, then, to apply them where they might be most effective. And, to recognize in their application that there exists a similar computational network in every biological system.

In essence, thinking itself (i.e., cognition and the mind) is a kind of computation. It's not, of course, like the kind of computation done in a digital computer, for many reasons; rather, the elementary data representations and goal states that cause our behavior are implemented as neural networks and ultimately can be tied to [at least in part] the underlying neurophysiology. It is important to remember, however, that the argument toward neurophysiological computation laid out in Steven Pinker's book, *How the Mind Works* (original publication 1997), has been found to be reductionist [to the neurophysiological level of explanation].

Technology is an organic part of humankind, and we create these tools to extend the boundaries of how we live and express ourselves. The software application Photoshop, for example, allows for the unlimited expression of the self in 2D form; literally, anything

you can imagine in 2D can be created with Photoshop. Biology is basically software that writes its own hardware - bacteria literally re-design their own genome. The spider's web is a technological aspect of the spider itself.

We are a species accelerating in its capacities to be creative and maintain thought responsive environments. Unfortunately, all the technological wonders of the world are just tons of junk unless they enhance the lives of the individuals [in a community]. A chaotic mind in a thought responsive environment creates [exponentially] more chaos as the environment becomes more [technologically] thought responsive. In essence, it could be said that the very reason we create technology is to shrinks the lag time between our imaginings and their instantiation. The more powerful our [computing and creating] tools the quicker we can create fulfilling change in the world, or destroy ourselves and our world. Technology, and digital technology in particular, is creating a new class of creative collaboration (e.g., the Internet + 3d phisible printing) that is disruptive to modern competition-based society and changing to old [power and thought] paradigms; wherein, traditional jobs and even the market [as an abstract entity] become seen for what they are, and become, obsolete. Yet, better technology alone will not save us or even make our lives better unless we make social changes as well.

In early 21st century society we have become dependent on our technology, and have come to believe that only technological solutions can solve our problems. Yet, the technology we develop is wholly dependent on our intentions. By relying on tools instead of improving our understanding, we are travelling down a slippery path toward further separation and possible destruction. Wisdom is found in the users of tools, not in the technology itself. The use of a tool cannot be separated from its origin and useful intention, just like humans cannot be separated from our natural environment or from the tools we use.

In a thought responsive environment we need to be careful in our thoughts, we need to be careful of faulty thinking, and also of not thinking at all (i.e., letting authorities do our thinking for us).

Are we actually getting the best of what technology has to offer right now? In some cases, we are: In an article entitled "Golden Eye" by Ross Anderson he speaks of the Hubble space telescope and how it is an instrument of mankind - it was the "eye" of mankind - an exoskeleton of humankind's optic nerve; which, literally allows an individual to mainline snapshots of universal time through their optic nerve. Instruments of science expand what everyone can see and verify. They represent the potential for the expansion of our minds. Scientific instrumentation, when applied toward the expansion of our perception, is eminently useful.

Technology can facilitate participation as well as provide a transparent and persistent recognition of a larger and more encompassing [dynamic] whole. And, a purposeful social orientation combined with participatively developed technology has the potential

to create a state of equality in need fulfillment without an administrative bureaucratic class of governors. Yet, at a fundamental level we must ask ourselves, is the technology going to be used to facilitate lifelong holistic well-being or are we whitewashing a dystopian politico-corporate dictatorship. The statement, "It's what we do and how we use it," fits in nicely here. In other words, for what purpose is the technology being developed? Is it being developed through secret experiments sanctioned in the name of profit and defense, or are the technological systems that we use openly developed by users for their own fulfillment?

**INSIGHT:** *You can ignore reality, but you cannot ignore the consequences of ignoring reality. When the environment changes, behaviours change - this is reality. A society must study its relationship to nature, the natural true world from which meaning is relationally derived.*

#### 4.4 *The rodent experiments of Bruce Alexander and John B. Calhoun*

During the 20th century, a series of rodent experiments were carried out to discover more about rodent fulfillment and overcrowding. The two most significant rodent experiment sets were conducted by Bruce Alexander and John B. Calhoun. The factors experimented with were the factors of density dependency (Ramsden, et al., 2008):

1. Opportunities:
  - A. Education.
  - B. Contribution.
  - C. Leisure.
2. Disease.
3. Competition.
4. Predation and aggression.
5. Birth rate.

The experiments never went on long enough to have a genetic bottleneck situation; however, the experiments did produce a population bottleneck with a sharp reduction in the size of a population due to environmental density dependent events.

##### 4.4.1 *The rat park utopia experiment(s)*

*A.k.a., The rat life-radius modification experiments, the urban rat experiments, the rat addiction recovery playground.*

Canadian psychologist Bruce Alexander, at the Simon Fraser University in British Columbia, Canada, suspected that the preference of rats to morphine over water in previous experiments might be affected by their housing conditions. To test his hypothesis Alexander et al., (1978) built an enclosure measuring 8.8 square metres for a colony of rats of both sexes. This area was around 200 times the area of standard rodent cages.

'Rat Park' (as it was known) had decorated walls, running wheels, and nesting areas. Inhabitants had access to a plentiful supply of food, perhaps most importantly the rats lived in it "together". It was a giant rat paradise enclosure built to house many rats of both sexes with plenty of opportunity for physical activity and healthy environmental interaction; essentially, to have a normal rat life (as close as could be approximated). Rat Park was what neuroscientists would call an enriched environment, or a non-deprived one. Alternatively, rats that live in a small cage on their own experience a form of sensory deprivation (housing isolation; "openness deprivation").

In the tests, rats reared in isolation cages drank as much as 20 times more morphine than those brought up in Rat Park. Inhabitants of Rat Park could be induced to drink more of the morphine if it was mixed with sugar, but a control experiment suggested that this was because they liked the sugar, rather than because the sugar allowed them to ignore the bitter taste of the morphine long enough to get addicted. When naloxone, which blocks the effects of morphine, was added to the morphine-sugar mix, the rats' consumption didn't drop. In fact, their consumption increased, suggesting they were actively trying to avoid the effects of morphine, but would put up with it in order to get sugar.

After the first phase of Rat Park, Professor Alexander then took this test further. He re-ran the early experiments, where the rats were left alone, and became compulsive users of the drug. He let them use the drug for fifty-seven days, so that they became addicted to the morphine. Then he took them out of isolation, and placed them in Rat Park. He wanted to know, if you fall into that state of addiction, is your brain hijacked, so you can't recover? Do the drugs take you over? The result was that under the conditions of Rat Park the rats previously addicted to morphine were observed to have a fewer twitches of withdrawal (than controls), they soon stopped their heavy use, and eventually returned to having a normal life. The "good" cage saved them from addiction. Essentially, the Rat Park experiments demonstrated that the opposite of addiction is not sobriety, but a healthy connection to others and to one's surrounding environment.

The results are catastrophic for the simplistic idea that one use of a drug inevitably hooks the user by rewiring their brain. When Alexander's rats were given something better to do than sit in a bare cage they turned their noses up at morphine because they preferred playing with their friends and exploring their surroundings to getting opiated. Rats with poor living conditions will make choices that are poor for their health.

The rat park experiments have been similarly replicated in a host of other organisms. If these experiments were to convey just one useful idea it might be the notion that the structures we accept and build around ourselves into that which is our 'environment' have a persistent relationship with our well-being. How do our structures effect our decisions, and our health in turn? What

variable are we neglecting to think about? It is wise for us to consider the possibility that we have unwittingly built cages around our social selves. Are modern cubicle farms not cages? Are employment positions not cages? Are professional institutions not cages? Is property not a cage for those who don't have property? Are schools and grades not cages? Is a belief not a cage?

#### 4.4.2 The rat city population-density experiment(s)

*A.k.a., Rat city utopia experiments, rodent density dependency collapse.*

Behavioral researcher and ethologist John B. Calhoun experimented with rodent city societies for approximately 30 years (from approximately 1948 to 1975); he called them "universes" and gate each a number. In one of his famous experiments published in the 1962 edition of Scientific American, Calhoun described the cities at the start of each experiment as "rat utopias". Once the rats in "rat city" had all their visible needs met, they bred rapidly. The only restriction Calhoun imposed on the population was area. As the population grew, the lack of space became increasingly problematic. As overpopulation became visible, the "utopias" become "hells". At first, the rodents had all the food, water, and area they could want; their population exploded, "utopia". But, as the population of rodents grew, density dependent factors eventually caused the population size to plummet, and finally collapse irrecoverably. (Ramsden, et al., 2008:2)

Over the course of these experiments, the same sequence of events would transpire each time:

1. The mice would meet, mate and breed in large quantities.
2. Eventually a leveling-off would occur.
3. After that, the rodents would develop either hostile and cliquish or passive and anti-social behaviors (among other behaviors).
4. The population would then trail off to extinction.

Calhoun conducted separate experiments with rats and mice, and they both ended up in extinction due to density dependent factors. Essentially, Calhoun was studying the breakdown of social bonds that occurs under extreme overcrowding, a phenomenon he termed a "behavioral sink." "Behavioral sink" is a term invented by Calhoun to describe a collapse in behavior, which can result from overcrowding. "Behavior sink" describes the results of overcrowding in an enclosed environment; including, the breakdown of social functions and the eventual and total collapse of the population. (Ramsden, et al., 2008:2) Density-dependent factors include: disease, competition, predation, and birth rate. When there is too high density, there is higher disease, higher competition, higher predation, and in the latest stages, a collapsing birth rate (among other effects). Calhoun

created a such a significant density dependent situation that the population would turned on itself (behaviorally) and collapsed (in births). With this in mind, in community, cities must be designed with density dependent factors as accountable measures, which is possible because habitats are pre-planned, and the planning is cyclical.

According to Calhoun, the lessons from his rodent universe experiments demonstrated five fundamental aspects about both rodents and humans:

1. Rodents must develop the skills for courtship, child-rearing, territorial defense, and personal role fulfillment on the domestic and communal front. If such skills fail to develop, the individual will neither reproduce nor find a productive role within society.
2. As with rodents, all species will grow older and gradually die out.
3. If the number of qualified individuals exceeds the number of openings in society, chaos and alienation will be the inevitable outcomes.
4. Individuals raised under the alienating and chaotic conditions will lack any relation to the real-world. Physiological satiation will be their only drive in life.
5. The loss of a concern for others within a civilization could lead to its collapse.

Calhoun felt that city planning was key to avoiding behavior sinks. He thought the design of cities was partially responsible for the ways in which inhabitants interacted with each other and that steps should be taken in tandem with urban development to maintain positive relationships between individuals among the population.

#### *4.5 Basic principles that enable contribution*

**MAXIM:** *Those who understand it, and participate with it, progress it.*

Scientific findings have uncovered a variety of basic principles for enabling contribution without expectation of extrinsic reward. These principles [and others] are well known in the field of social psychology. Research into contribution reveals that there are ways in which a community can inspire more "giving" without the expectation of [material] exchange. Society can be designed to facilitate contribution, participation, and sharing over self-oriented production, consumption, and profit. There exist [at least] three discovered principles that enable contribution:

1. People are unlikely to contribute in a non-transparent system where they do not know who precisely they are helping and how their contributions will make a difference.
2. Openness reduces the likelihood of someone

harming their reputation by acting corruptly.

3. Transparency allows for everyone in the community to have an awareness of what everyone else needs. Finding out what people need brings potential "givers" out of the woodwork. Because, they saw ways that they could contribute that they weren't aware of before. If a community wants individuals to contribute, then it must [be organized to] encourage individuals to ask for help and to inquire. And, the community's architectural and technological platforms must be designed to facilitate queries for information and assistance. Many people for discoverable reasons withhold help seeking in early 21st century society.
4. People are more likely to contribute when they share a common identity with the beneficiary; and possibly, a common value set. What identity, what values and understandings, does the contributor share in common with the beneficiary that actually makes their well-being part of the contributor's well-being? What makes helping them, and giving to them, a little bit like helping oneself - a regeneration of the state of contribution?

Research shows that there are many benefits to contribution. Joy and meaning are two of the most commonly mentioned. Further, people who freely participate come to feel more valued and more appreciated, which lead to a host of positive psychophysiological (hormonal) benefits. However, not all social arrangements are conducive to the "success" of givers. Being someone who gives under certain social organizations, such as giving in a competitive market, might unfortunately mean that you get trampled on (Read: trampled over toward another's profit). A "giver" who resides in an environment composed of completely selfishly self-serving people is likely to be taken advantage of and exploited -- it re-generates the opportunity and provides incentive for some to take advantage of others [in meeting their own felt needs].

In looking at the principle foundations of participation it might be useful to explore how other species organize their communication and participation systems. Bees, for example, perform their own form of open and objective participatory communication in their communities. It is known as the waggle dance. The waggle dance is a system of signaling communication used by bees to communicate information about useful resources to one another.

**MAXIM:** *Absolute inequality is harmful to everyone; and it exists absolutely in a market economy.*

#### *4.6 Power as social power*

The power to "do work" and to store potential energy in various forms may be observed in the structure

of every existent system. It could be said that power lies in the harnessing and otherwise transforming (i.e., transformational movement) of energy from an environment through structure into new structure with a different potential for "doing work". In its basic form, 'power' denotes the movement of energy and the transformation of information into a different potential [of structure]. Power in this [systematic and structural] sense is a neutral concept that lies at every structural level and in every system in society, including but not limited to: the individual; the social; the economic; as well as the ecological.

At the social level power has the potential of becoming maleficent, forming a socially structured hierarchy of power (as in, "force" and "coercion"). In a social hierarchy there is the concurrent conceptual formation of the idea of "authority" (sometimes given the professional label "manager", "boss", "leader", or "commander") from which there is [em]powered pressure downward from the upwardly centralized structure. In other words, social hierarchy centralizes power upward and applies it downward as force and coercion. Therein, "force" may become monopolized into the idea of a perpetual State [of downward power] and "coercion" may become monopolized into the perpetuation of a market [of competitive power]. In other words, power becomes "force" at the level of government and "coercion" at the level of a market; although in truth, one cannot exist without the other, and hence, at the socio-economic level, when one is in play then both are in play and there is an active dynamic of the two forms of socially structured power [into what has become known by its umbrella term, "structural violence"]. This form of power exists in contrast to the form that maintains the "neutrality" of the concept of power at the social level, an 'open systems hierarchy'.

All living systems are open - they receive signals from their environment and respond with some degree of intentional freedom after the processing of information from corrective-negative feedback. An open system hierarchy maintains the neutrality of the concept of power in its application at the social level - a system that does so may be considered "living", and a system that does not may be considered "dead". A socially structured hierarchy of power [into force and coercion] does not maintain that neutral understanding for it adds the addition of the idea of competition for rulership over items of ownership, wherein power becomes pejorative to human fulfillment (i.e., force and coercion).

From the perspective of consciousness as a self-initiated, goal-oriented process, power involves the open sharing of information, intentions and goals among one another to facilitate an overall, commonly fulfilling direction (as a commonly meaningful purpose).

Because structure exists at all levels, power exists in some form at all levels. And, in an environment where the idea of "ownership" is also encoded into the structure, then there will exist the ownership of power by competing entities [as a structural arrangement of

that society]. Since effort (as work/power) is required to fulfill most needs, particularly those of a material nature, a society that encodes ownership will simultaneously encode the incentive for the monopolization of power to more effectively and efficiently fulfill one's own needs [under a state of competition for need fulfillment]. Therein, entities in the market will seek to own coercive power and parties vying for ruler-ship will seek to own powerful power. With such power there is likely to come greater ownership, and a greater competitive advantage, in the satisfaction of one's own felt needs. Therein, 'purchasing power' is the power to fulfill your own felt needs in the market and social influence represents the power to fulfill your own felt needs in politics (or government).

In modern times, there may be no clearer example of social hierarchy than that which takes the form of the modern State. The modern State involves an organized structure of people and technologies that are designed (or "instructionally trained") with the intention of monopolizing conflict for their own ends within an area they claim as their "jurisdiction". Also, it is still the case in some countries today that the hierarchical social-market class system is fairly prominent: the caste system in India is one well-known example. In either case, a social power hierarchy is a means to domination [in the exclusive fulfillment of one's own felt needs at the expense of the needs of others].

As noted, monetary economic power is in part measure by 'purchasing power'. And, political power is in part measured by one's hierarchical political position and one's social network of influence and favor.

The ownership of power by a State or market entity will fundamentally destabilize a society and it will have consequences that ripple throughout the whole of the [human] system.

At the economic level in a structured social hierarchy power becomes an economic resource of control, examples of which include but are in no way limited to: employment; the military and police; subsidization; as well as State issued currencies and fractional reserve banking (which control the flow of the economy itself).

In a social hierarchy, power is the ability to "make" people do what you want through force and/or coercion, which may be highly discernible or indistinctly structural (depending upon perception, experience, and cognitive filtering). According to the classification by economist John Kenneth Galbraith, 'power' [at the level of social hierarchy] can be usefully divided into three categories, which he refers to as: condign power (i.e., force); compensatory power (i.e., reward); and conditioned power (i.e., indoctrination).

These three forms of structural social power each represent a sympathetic form of structural violence:

- 1. Condign power** – as coercion, aggression, and force. Note: This form of power is expressed through the claim to authority and the

- monopolization/obfuscation of violence. It is an aggressive form of power, which may become embedded within the fabric of society itself (i.e., become normalized so that it is no longer seen for what it is).
2. **Conditioned power** – as propaganda, public relations, foreign relations, advertising & marketing, schooling, mass media, the general organization (and culture) of society, and other non-economic incentives. This form of power involves the repetition of beliefs (or programmatic memes) to maintain a state of power through individual perception modification (i.e., belief systems management, -ism's encoding). The expression of this form of power is generally not accompanied by visible aggression. And again, if aggression is present, then it is often normalized.
  3. **Compensatory power** – as economic incentives, such as investment, wages, subsidies, and welfare. This form of power leads to the expression of an extrinsically incentivized, socially stratified structure.

Condign power wins submission by the ability to impose an alternative to the preferences of the individual or group that is sufficiently unpleasant or painful so that these preferences are abandoned. There is an overtone of punishment to the term's definition, and this conveys the appropriate impression. There may be the threat of arrest, death, and beating [when condign power is not submitted to]. Galbraith also notes that while condign power is still crucially important in some respects, it has lost a great deal of general recognition in modern "democratic societies" compared to compensatory and conditioned power.

Condign power wins submission by inflicting or threatening appropriately adverse consequences. Compensatory power, in contrast, wins submission by the offer of affirmative reward -- by giving of something of value to the individual submitting. Monetary reward and State social welfare are examples of this. Compensatory power often leads to an increase in dependence and decrease in self-direction, self-esteem, and intrinsically creative potential.

Conditioned power, in contrast, is exercised by the agenda-based changing of belief. Persuasion, education, or the social commitment to what seems natural, proper, or right causes the individual to submit to the will of another or of others. Therein, the submission appears to reflect the preferred course; the fact of submission itself, is not recognized. Whereas, submission is a common feature of both condign power and compensatory power – in the one case compelled and in the other for reward. Conditioned power is equivalent to the willing acceptance of the indoctrination of a belief system.

More than likely, if power is present in any of these structural forms, then all of its forms are present to some

spectral degree in that society. Hence, if any of these forms of power are present then [structural] violence is also present.

To mangle a quote from Gary Lloyd, "When a boot (i.e., power) is on your throat, whether it is a coercive boot, a compensatory boot, or a conditioned boot is of no consequence." All three "boots" lead to vast inequalities between human beings. All three "boots" flow from hierarchy and lead to internalized self-hatred, exploitation, suffering, death and genocide. Coercive power is often maintained through: enforcement and through ignorance. In community, intelligence is no longer be a threat to the establishment, because there is no power to be gained in having socio-economic interest over others; no "power establishment". Under this environment it is highly likely that individuals will have a high propensity to become generalists, and not specialists. Specialization may be a limitation. The monetary system promotes specialization as a form of labor distribution for income. The lifestyle of a labor for income system is built in a colossally inefficient manner.

The major problem in separating these forms of power is that they are all necessary for each other. Genocide requires dehumanization of the enemy, and massive resources, to be perpetrated. "Property rights" require indoctrinated obedience and the force of the gun if they are to persist. Indoctrinating people to agree with a social goal, no matter what goal, requires some form of punishment for those who disagree, as well as the means to produce and propagate an effective message.

It is, in part, when powerful entities feel threatened that they use the power that they have amassed, and been given and accepted by the naive, against those whom they perceive as threatening. And scientifically, being in a position of power over others significantly diminishes one's capacity to empathize with others. In simple terms, social power reduces the capacity to empathize. Further, it is important to remember that historically, people in positions of power have very rarely undermined their own power (i.e., given away their own "right" to power).

The wrong people will always ascend in a political[ly] powered and socially hierarchical structure. A community may prevent all ascension to power through the intentional design of its system, which are designed to maintain the empowerment of the individual. There will always be interests in vying for control of mechanisms of social power in a competitive game for survival. It is the fact of the social [power] position itself that is the problem. When there are positions of social power there will always be people who seek the power and will move into those positions. If there is competition for need, then there will exist perpetual incentive to abuse the power.

The nature of government has always been to look at people who oppose what "they" do as being "threats". That's the nature of power -- to regard anybody who's a threat to your power as a [broad national security] threat, a "terrorist".

If you are someone who exercises power and you can know everything about what everybody else is doing, what they say, read, think, plan, and with whom they are interacting, and you can, at the same time, build a wall of secrecy around what it is that you are doing so that no one else can see or know what it is that you are choosing to do with your power, then the power imbalance becomes amazingly acute, which is why all tyrannies instinctively use surveillance as one of their principle weapons, as a weapon for social influence and control. The more you know about the world and other people, the more you can manipulate and control it, and the greater the likelihood of preserving one's own power. The less that world knows about you, the less leverage they have over you. At its core, a power establishment is really about maintaining and increasing the power of one competitive group over another, of competitive advantage in a game.

Hence, an objective of a community is to either eliminate social power hierarchy [by removing structures of exclusion and oppression] while iteratively redesigning the system to distribute power such that it is equally available [by cooperatively organizing self-empowered systems]; which, is essentially the generation of an egalitarian (a.k.a., equalitarian) social structure.

It is untrue to state that egalitarians want everyone to be the same in every conceivable way, among which having the same job and the same possessions may be imagined. This vision of an living systems structure is more akin to robotic conformity, not equality (or equity) as expressed in terms of human fulfillment. Egalitarians do not want everyone to have the same job, they want everyone to have the ability or opportunity to express their desired form of energy into the socio-economic system (i.e., they desire intrinsically motivated, coordinated, and comprehensively informed effort). People holding different jobs or no job at all, or having different possessions, is perfectly egalitarian as long as those "jobs" or "possessions" don't give them power (and economic status) over others or generate structures of competition. Fundamentally, an egalitarian socio-economic environment is an environment without "elites" and "masses" (i.e., social stratification) -- it is not a structurally violent environment where there are elites and commoners. A system where everyone has a commonly equal amount of power to communicate and participate is not a system of "uniformity" in any form of negative expression.

**NOTE:** *Self-esteem is primarily generated from within, and there are specific environments and contexts of facilitation that more greatly ease its emergence.*

## 4.7 Justice does not equal force

*I.e., Justice is a valuable design state that cannot be enforced.*

In community, resources that are occupied by individuals

cannot be forced from them, for no entity exists or may exist to assume such a force. The system is not designed to give rights or privileges to any one individual, or group, that every individual in the community does not have. No entity exists to force anyone or any group of individuals to relinquish their access to a resource that is currently occupied by them. It is generally at this point in the discussion that people existing within the private property-based paradigm "stop believing" in the veracity of an access-based economic model. They simply cannot believe that humans can arrive at decisions and act according to a value set and purpose. If you had no fear, how would you behave? This is why a screening process must exist for the community, and any similar access-based community. Individuals who fear for their preservation, their material sufficiency, are significantly likely to portray socially corrosive behaviors.

Hoarding is a human behavior commonly seen in societies where someone's success, influence, and very survival are predicated upon how much material wealth they have accumulated. Under a private ownership model this type of behavior cannot be considered pathological because it is a behavior necessary for one's very survival (physical and identity), and it is encouraged by established institutions. The behavior is promoted and reinforced by organizations that require its expression for their own continued survival. This is generally known as "consumerism" – consuming not for a need, but for the act of consumption itself in the satisfaction of a pseudo-need. The act of consumptions temporarily satisfies the fear of insufficient material wealth and can become a habit or dopamine addiction. An individual who values efficiency and the equitable access to all resources is someone who would return a "personal access" item when it requires recycling or when it will no longer foreseeable be used – this is someone who does not hoard the item out of fear for their very survival. Such behavioral relationships are unlikely to occur in a socio-economic system that is entirely transparent, otherwise there will exist a reduction in trust, which leads to the potential for fear and the generation of a particular set of behavioral maladies. A transparent system is the only system wherein its users have total trust in the system that services their common needs.

Note that hoarding should not be confused with preparing for emergencies, accidents, and disasters (i.e., buffering and redundancy). *Stockpiling* is a method used to accumulate and maintain a reasonable supply of needed items with a known value for future use should supply be disrupted. Stockpiling insures that needed items will still be available for use when required regardless of incident. These items are usually carefully acquired and maintained. Disaster recovery and [operational] service continuity systems exist as components of the Incident Response operational process. Incidents are prepared for (i.e., planned for).

## 4.8 Corruption

**NOTE:** Violence and aggression are not acceptable in coordinating the movement and transformation of resources into services and goods in this world (if human well-being is a goal).

In a community-type society, there is no reward for corruption, because the interdisciplinary teams do not get paid and have no status tied to their economic (access) position in society; hence, there is little to no incentive to behave corruptly. The reward of contribution/participation is, in fact, the benefits of the effectiveness and efficiency of fulfillment in the society as a whole. And, individuals therein contribute because it is in their best interests to do so. As such, self-interest becomes integrated with social interest; they become one. In order to help yourself, you must help society explicitly. And the survival of the community is based upon this concept. It is important to consider that corruption can be systemic/structural, and that corrupt behaviors flourishes mostly in "muddy waters" in conflicting objectives, shifting priorities, and secrecy. Corruption comes when people feel disconnected from others and lacking in need fulfillment.

## 5 Efficiency

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*A.k.a., Efficient fulfillment, optimization.*

Before elucidating upon the term "efficiency", it is important to note that the intention herein is that efficiency be applied toward the fulfillment of the needs of the individual, not toward the exploitation or scientific management of the individual. (Schiro, 1978) The concept of efficiency is problematic only insofar as it is applied (or defined) from the point-of-view of force and authority, disregarding the values in this value system. In time, anything can be designed and accomplished on a more efficient basis. Just as human needs and desires can be fulfilled more efficiently, so too can tyranny and slavery can be carried out more efficiently. Hence, efficiency is a count of desirability for the entity doing the counting. Efficiency must maintain a value relationship with freedom, justice, and human fulfillment for it to be employed in such a manner that it leads to the betterment of the individual and the community as a whole. Efficiency is both a component of, as well as in service to, morality, not the sole other way around (i.e., morality does not serve efficiency).

**INSIGHT:** *Nature at all levels builds responsive and adaptive structures that conserve material and energy resources (often, through the use of modular components combined with least-energy structural strategies).*

In community, contributors work toward economic efficiency, because the goal is human fulfillment, flourishing and well-being. The goal is not economic efficiency in and of itself. It just so happens that economic efficiency is a necessary value orientation to achieve and otherwise sustain the primary purpose for the Community's existence, global human need fulfillment and ecological restoration. Hence, it can only be said that the Community increases economic efficiency in so far as it relates to (or is qualified by its relationship to) human fulfillment. There is an important distinction here.

**NOTE:** *The scientific literature indicates that learning has a positive and significant impact on the expression of an individual's technical efficiency, as expected. When people know how to do things more efficiently and they are unhindered by bureaucracies and governance-control structures, they tend carry out changes that will improve their life, their work, and their well-being.*

At a base level, all efficiency comes down to just:

1. Resource utilization.
  - A. Assemblies of resources and resource usages must be optimized.
2. Cycle time (sequential count of a duration, "event").
  - A. Processes must be optimized.

In an economic sense, efficiency could be seen as parsimony -- from pars- "to save", and -monia, a suffix signifying action, state or condition). Hence, efficiency/parsimony is the action of saving (not using more than absolutely necessary) of resources and time (from occupation and energy input). If parsimony were made into a statement, it might state: reduce the total number of component elements, resources used, interventions made, delays and failures, structural complexity, material complexity, assembly complexity, and behavioral complexity. Wherein, operational efficiency asks, Is the solution (design) and/or operation (team), going as planned?

Systems science, with its holistic approach to understanding and integrating complex interactions within and across systems, inherently fosters efficiency. By examining the interconnectedness of components within a system, systems science enables the identification of leverage points where small, targeted interventions can lead to significant, beneficial efficiency changes. This systemic understanding reduces redundancy, optimizes resource allocation, and enhances the capability to predict and mitigate potential disruptions, thereby streamlining processes and improving outcomes. Consequently, systems science not only operates efficiently by minimizing wasted effort in analysis and intervention but also creates efficiency within the systems it seeks to design and improve, leading to more sustainable and resilient structures.

## 5.1 The characterization of efficiency

**INSIGHT:** *The application of efficiency to technology leads to greater freedom for meaningful action.*

Efficiency is considered a concept of measurement (i.e., a 'measurable concept') and its application requires empirical evidence. Note, effectiveness is also a measurable concept. Anywhere quantitative and qualitative data is observed the concept of efficiency may be applied. This includes, but is not limited to, ecological and biological systems, technological systems, economic systems, and social systems. Technological changes, changes in productivity, changes in biology, in physiology, and in society in general are all closely linked with the concept of efficiency.

Efficiency may be used to describe the state, operation or arrangement of physical objects (e.g., an engine) as well as abstract objects (e.g., an organization or thought process). In concern to efficiency as applied to abstract objects, for example, an organization might choose not to recognize, model or reward social status, for status is a form of social diversification and is inefficient in that it neither improves communication nor optimizes effort expenditure, in fact it hinders both. By not encoding, or removing the encoding, of 'status', there is a change in efficiency [of a social operational process].

Efficiency is a characteristic of every system, and may

be defined for a process with any kind of input and output given the increment of time (or change). All time-based processes can be characterized by their efficiency (and their effectiveness in their resulting alignment with a desired goal/outcome). Also, every living information system is becoming more efficient or less efficient in any given moment [as a measure of entropy].

Efficiency is also a component of coordination. Coordination is a state of interaction where the actions of different parts of a system produce efficient and effective movements toward fulfilling the purpose (or objective) of the system. Coordination involves the *integration, arrangement, ordering, and adjusting* of interacting relationships as functions or parts involved in an action or movement. It is an act of organization in which cooperative effort leads to effective and efficient dynamics / relationships.

Efficiency is an excellent measure of the coordination of any action. The higher the efficiency, the more coordinated the action is, and vice versa. Inefficient movement is like driving a car with the parking brake on. You won't go anywhere very fast and you'll damage the vehicle in the process. Similarly, inefficient movement of the human body over times wears down its musculoskeletal system. In robotics' navigation one of an engineers' efficiency objectives is to obtain an 'optimum path', meaning that the robot should plan and execute a reliable path between the source point and the target point without colliding with static and dynamic obstacles found in a probabilistically uncertain and complex environment, and do so in a systematically conserved manner.

No matter how efficiency is characterized, it must begin with data. Data provides the necessary knowledge to quantify/qualify the state of a system as efficient or inefficient, or some degree thereof. Because data may come from different sources, a commonly agreed upon definition for efficiency and platform (or approach) for its application is essential.

And therein, we see the challenge. We as individuals have an attraction to efficiency, but when embedded within a destructive environmental structure our value orientation toward efficiency leads to the "cutting of corners" and the acceptance of "easy answers" without a holistic thinking approach [to thinking systematically through problems]. The easy answers in a destructive system are often counter to what individuals truly need and desire.

In community, any task where efficiency is valued will be automated when labor desires or requires it to be so. If a task is necessary, but no one desires to complete the task, or maybe, the task is very dangerous, then automation is an efficient solution (if it is a possibility).

## 5.2 The definition of efficiency

**MAXIM:** *A measure of efficiency in fulfillment is a measure of progress in society.*

A useful definition of efficiency suggests the examination of evidence as 'data' to make fundamental and constructive change moving forward (i.e., progress). Efficiency appears to underlie all progress in general.

Although efficiency can be defined in several ways, each way is essentially similar. Efficiency describes how something is accomplished. As the steady condition of an object, efficiency infers the idea of getting (or receiving) the most out of something (i.e., maximization or optimization). Over time, efficiency implies the idea of receiving more out of something (i.e., a gain in performance or optimization). In a system, efficiency implies that things exist which are preferentially maximized (e.g., product quality), while other things exist that are preferentially minimized (e.g., pollution and energy usage). For an organism, at the very least, a meaningful definition of efficiency involves an alignment with phenomenological, existent reality with at least the objective of optimizing self-preservation, sustainability, resilience, and well-being. At the social level, efficiency is the maximization of the potential well-being of the individual among a community of individuals seeking well-being. The human desire that needs be met in the most efficient manner possible shows consistently throughout history.

Efficiency involves preservation and conservation [of resources and information] to meet needs in the most strategic and iterative (accounting for time/change) way. In an engineered system it maintains the sub-conceptualization of 'parsimonious' - do not use any more resources than are required to fulfill the function.

As a component of this value system, efficiency is defined in three ways: from a *needs* standpoint; from a *value* standpoint; and from a *technical* standpoint. Their definitions are essentially equivalent, although they are applied to different elements of the community's structure.

In concern to needs, efficiency is defined as the optimization of systems and the maximization of the strategic allocation of resources to fulfill the spectrum of human needs, wants and preferences within a finite system while accounting for all known and measurable environmental influences (e.g., regeneration, carrying capacity, pollution). This is true 'economic efficiency' and may be contrasted with the market economy definition of "economic efficiency" (or "cost efficiency").

The market system is incompatible with the mode of optimized efficiency designed into the Community. Optimization is defined herein as the most efficient *arrangement, formation, coordination, and quanta* of inputs, outputs, and processes given what is scientifically known and technologically possible at (or within) a given time. In this context, an 'optimization process' is any process that arrives at solutions to fulfill human needs that are "better" than the solution used before. The term "better" implies improved qualities such as longer lasting, requiring less energy, and less likely to necessitate repair, possibly more localized, and functionally useful.

The concept of efficiency may also be applied

to each of the other value conditions in this value system. In other words, it may be applied to the evolution of those conceptual models that have been identified as supporting an orientational alignment with the community's highest potential direction. As such, efficiency is defined as the maximization [and optimization] of those conditions that are valued, while minimizing those conditions that conflict, contradict, and directly lead to a greater potential for socially insufficiency in fulfillment (i.e., conflicting values which may be plotted on a value circumplex). Hence, efficiency involves the optimal design, structure, and arrangement of the operational systems [processes] that form the community to maintain as well as to maximize the expression of desirable values.

Essentially, efficiency as it is defined above for both needs and values represents the optimization as well as the progressive and adaptive evolution of the [conceptual] systems by which known human needs are fulfilled. As such, efficiency is applied toward the optimum design of [material] community systems while accounting for the spectrum of valued conditions (i.e., the value system) and known human needs. This represents the application of progress in the direction of our purpose.

The term 'technical efficiency' refers to the performance of processes for transforming a set of inputs into a set of outputs, using resources to their maximum advantage. Hence, technical efficiency is often defined as the state (or condition) where no more of any one input is used than necessary to produce a given output. In other words, the maximum objective output is produced with the minimum quantity of inputs [to create a higher potential state of preservation, and a system with optimized qualities, given what is known]. Technical efficiency improvement occurs when less inputs are used to produce the same output, or more outputs are produced using the same input. When technical efficiency is applied to the production of economic products, goods and services it may be known as 'production efficiency'. And herein, truly efficient production arises from common participation in a common direction of constructive (or productive) fulfillment, which requires systems-level efficiency transparency.

**INSIGHT:** Generally, more efficient systems capture helpful interactions between components.

Because of the occasional difficulty in understanding technical efficiency as defined above, it will be restated using slightly different terminology: Production/technical efficiency is defined as the optimal relationship between the inputs and outputs of a system, whereby efficiency is increased by a gain in units of output per unit of input. This can occur by holding output constant and decreasing input or by deriving greater production (or functional capacity) from the same level of input. Note that these definitions of technical efficiency do not count any waste that may be generated by a system's

operation. When technical efficiency is applied with a whole-systems engineering approach, then optimization of the entire system (highest-level supra-system) is sought, versus optimization of isolated components for single benefits; hence, *waste must be considered*. 'Waste' can be 'pollution', or it can be an input into another process. Efficiency can come in many forms, including the degree of **modularity** of design and the degree of **customization** (Read: being more efficient by designing/getting things that are tailored to "you").

In a community, technical efficiency also references the known technical principles of nature, it takes advantage of feedback, and it is applied toward optimizing designs that preserve the habitat, reduce waste, and ultimately ensure fulfilled well-being. Nature is a self-organizing system with at least a discoverable technical rule set that may be used to optimize the means by which a community's needs are fulfilled.

From a whole, ecological systems perspective, waste is a product of an inefficient design. There is no concept of "waste" in natural cycles. In other words, waste is either to become a new input for the system in question (i.e., a recycled output) or an input for another system. In nature, individual species and organisms create a lot of "waste", and hence might be considered inefficient. But, integrated ecosystems are highly efficient because outputs of all components are inputs to others, reducing total net "waste" to a near probability of zero (Read: each organism's wastes are another's [eventual] food).

Together, these three forms of efficiency do not have a precise ontological classification; although they could possibly be classified together as 'life-systems efficiency' - a form of efficiency that examines the entire existent life-serving system and acts toward fulfilling the needs and highest potential direction of each human organism by optimizing processes, maximizing desired outputs, and minimizing inputs with all known information available.

Ultimately, nature does not care how "efficient" the human organism or its socio-economic system is - nature is affected by how many resources we extract, how much waste we generate, and what collateral damage we inflict on nature's own regenerative processes.

Note that scientists think that less-than-perfect efficiency is a characteristic of all natural processes due to the appearance of the decaying temporal nature or reality. Therefore, there can be no perfect or utopian (*u* ["not"] + *topia* ["place"]) socio-economic system, even if optimization was applied to every system in a community.

### 5.3 Why is efficiency valued?

**MAXIM:** *As long as you are going to apply resources you might as well get the most out of them.*

Efficiency is valued because it provides the community more of [and optimizes] those things that have been

identified as valuable, and less of those things that have been identified as corrosive or unhelpful, by increasing the community's organizational alignment with natural processes and a desired direction. Efficiency in movement is crucial for effective performance. Any lack thereof produces extra work required to complete the movement. Herein, efficiency is a principal component of a stable system, for without efficiency unrecoverable waste and persistent entropic randomness will lead to the [exponential] decay and eventual collapse of the system itself. An inefficient system is by definition a system in a relative state of collapse. Possibly, an individual human have an innate desire to conserve energy in one's work. In a socio-technical environment, information systems, software and machines, may be designed and operated to maximize efficiency. At the societal level, one of the many reasons for maximizing efficiency (Read: relationships that operate optimally/well and with little waste) is, increased well-being. One might also say, "We value efficiency so that we have freedom with our (within) time."

The consequences for the application of efficiency are numerous and include the potential for a greater degree of freedom for the individual, a higher likelihood of sustainability, and a more socially just and free system in general (Read: a system that is more freely responsive to our thoughts). For a community, efficiency is a matter of preservation and survival. If efficiency is not kept track of there is a high probability that a community will fail to adapt to changing conditions, lose track of its needs, and potentially accept values and systems that are contradictory to its very well-being. Therein, individuals may cling to the past, and their culture may inhibit the change required for their happiness and their very survival.

Efficiency is a necessary condition for resilience and sustainability; it underpins a reduction in waste and can lead to the preservation and stewardship of resources, of individual well-being, and of mutually fulfilling social relationships in general. Nature does not "frown upon", marginalize, or disregard efficiency, and neither should humankind. Nature is the final and only arbiter; natural processes are either efficient or they are soon, quite unlikely to exist.

Natural environmental constraints (i.e., the natural environment) are the ultimate arbiter, and they place a "natural" (i.e., not socially constructed) outside, environmental restriction (i.e., constraint) on individuals and humanity's behaviors. For example, if an engineer is designing a several story building near a known fault line, and the engineer knows how to build Earthquake resistant buildings, then the environment logically dictates which type of building (resistant vs. non-resistant) will be built; if s/he has that knowledge. Similarly, in a universe where engineers know of ten ways to build a bridge and nine of those ten ways requires a resource that is unavailable, then the building of the bridge is constrained by a bridge design that has all the resources regeneratively available. These are simplistic examples, and decisioning in the

real world is obviously more complex and involves an interplay of environmental, economic, and social factors.

In nature, there are two primary environmental constraints, which must be accounted for in any environmental decision inquiry:

1. **Resource positioning constraints** - resource constraints are identified by answering:
  - A. What is the repository volume of a given resource?
    1. What are a cities resources?
  - B. What is the flow of a given resource.
    1. Where and when are a cities resources?
2. **Carrying capacity constraints** - capacity constraints are identified by answering:
  - A. What is the regeneration rate of a given resource?
    1. Can the regeneration of resources, to continue the system, meet the demand?
  - B. What is the maximum (or, optimum) population size for users of a given resource composed environment?
    1. How many users can a particular design of the environment sustain given a rate of regeneration?
3. **Extinction constraints** - capacity to reproduce species. The mechanisms include, but may not be limited to:
  - A. Loss of genetic diversity.
  - B. Loss of area and resources for continued operation (or, growth) of population size.
    1. Loss of food source; scarcity of food and/or area for population.

In nature, the efficiency of an organism in finding and assimilating sources of nutrition, in excretion and detoxification, in procreating, and in adapting often means the difference between survival and extinction (i.e., it means resilience).

In a community, attention must be given to the inefficiencies of particular methods and practices, such as that of: coercion as a form of behavior modification. When coercive methods are used to modify behavior, for example, then individuals and groups become impelled to act on the basis of an implored [externally programmatic] reaction. Implored reactions and those [reflexes] based on need deficits are unlikely to engage the [spatial] freedom of consciousness in sufficient consideration of an optimal[ly efficient] response. Wherein, consciousness is not given the space necessary to freely consider its decision space and respond in the most efficient and effective manner. Fundamentally, some customs and practices, some conceptual structures, are simply inefficient in their restructuring of an environment toward human fulfillment (just as they might also be structurally ineffective also). Coercion is one of these structurally ineffective and inefficient

concepts, and its methods and practices lead efficiently away from human fulfillment.

Inefficiency could be thought of as the occurrence of damage in a system. For instance, the deliberate withholding of efficiency so that material goods wear out and breakdown sooner (e.g., 'planned obsolescence') is an untenable practice that precipitates the degradation of freedom and justice through the excess consumption of effort, energy, and resources - excess consumption (or "exploitation") has a high probability of damaging any system. Also, inefficiencies have a higher likelihood of rendering the state of [artificial] scarcity and resource depletion. Scarcity antagonizes fulfillment. Scarcity means less potential energy for a desired purpose. It is wise to recognize that scarcity is likely to be artificially engineered into a system when the principal motive for the system's existence is something other than human fulfillment, such as, the profit motive.

Accomplishing production processes with greater efficiency could equate to greater freedom for both the individual and the community by freeing an increasing quanta of undesired human effort for that which is more meaningful and desirable to the individual. Basically, when "you" find a way to do something more efficiently, then "you" have more time and resources leftover for something else.

Ephemeralization is the ability to do more with less, and also through good design. It is the equivalent of Moore's law of exponential computational processing as applied to socio-economic fulfillment. Simply, ephemeralization refers to new technologies replacing and render obsolete the old technologies, and in so doing, conveying the less usage of resources for more added function. Note that rapid ephemeralization makes it difficult to predict the lifespan of a technology. Additionally, for materials that cannot be recycled and must be decomposed, it is useful to have them remain in the environment only ephemerally (i.e., for a relatively short duration of time -- short lived; so that waste does not build up).

Humankind's understandings of the technical nature of reality have expanded to the point that its technological capabilities allow for the increasingly complex and efficient restructuring of matter. Therein, the actualization of the real world referenced concepts (i.e., empirical concepts) of *conservation* and *efficiency* are likely to lead to the usage of fewer and fewer materials to maintain life supporting and enriching processes. For example, the first computer built in the 1960s covered ~1800 square feet of floor space, weighed ~30 tons and consumed ~160 kilowatts of electric power. Today, an inexpensive pocket sized mobile device computes substantially faster, running on a virtual trickle of electricity in comparison. And, similar advances in technology and understanding continue to occur across every domain of service. Effectively, technical efficiency allows for an increasingly higher standard-of-living and quality-of-life with fewer and fewer resources.

Buckminster Fuller observed,

*"We are beginning to do more with less, or ephemeralizing our social operation, or at least we are proving that it would be possible were it not for the natural pushback from an established power structure, which benefits off the back of restriction, and a lack of universality of availability."*

Technology is all around us, "[it] is all we have," exclaimed Buckminster Fuller. Whereupon he went on to explain that with additions to human knowledge, inventions, and the development of new machines man is capable of doing "more with less" (or "ephemeralization"). Humans are now capable of extending their own functions into the thoughtful modification of material reality to create community-wide useful services, objects and processes. Technological advances allow us ultimately to meet our needs and desires using fewer materials and less energy; thus, imparting greater sustainability and a higher likelihood of preservation to a community.

In business and in finance (in particular) efficiency conveys a slightly different meaning, and a markedly different orientation for a society. In finance, businesses make more money and employ fewer people through increases in their overall technical efficiency. In business, there is an incentive to do the most profitable things with the least capital [investment]. In the market, inefficiency often comes in the form of non-funding of sustainable technologies and integrated service system. Practices in the market often go according to cost, rather than what actually works toward human well-being and is otherwise optimal for everyone. Unfortunately, in early 21st century society, many people don't realize how inefficient things actually are because they have nothing to compare it to. And yet, efficiency is necessary for an economy of scale.

In society, individuals make more of themselves and become more refined through increases in their overall efficiency. In humanity, there is a sense of desiring to do the most fulfilling things with the least expenditure of effort.

In a sense, the very existence of a market is an indication that a society's social psychological sense of itself is one of insufficiency -- a market is a reliance on object (or abstraction - currency) exchange for need satisfaction; it is not the empowering of individuals toward self-sufficiency and the localized fulfillment of need. The market [today] represents an obligation to exchange (or essentially, to die). It is not equivalent to 'efficiency exchange' in nature, which is the process of "trading" energy for higher functioning (and fulfillment).

An obligation to exchange at a social level presents: (1) an opening for conflict in the exchange (e.g., "cheating" and "stealing"); and (2) for usurpation of the exchange process itself by a more powerful player in the market (e.g., transactional taxation). Yet, trying to control others, and conflict in general, is grossly inefficient. It wastes energy and spawns a host of other problems. Therein,

control becomes an instrument for monopolization and not actualization, of self-imposed limitation and not ephemeralization. Envy, fear, and control are closely interrelated. For example, the fear of loneliness can generate a desire to control others or to lust after what they have. Fear is like a cancer that spreads through the mind and body and distorts how one views their life and makes decisions. One might ask oneself, "How is my motivation [for growth and fulfillment] impacted by my desire to control others?" Social control is a distortion that limits the efficient expression of one's fulfilled self. One of the ways a group can control a market is by withhold technical efficiency by buying technologies and sitting on them, by patenting them and forcefully limiting their use, or applying them clandestinely.

Efficiency and laziness are related. Frank Gilbreth, one of the early "efficiency experts", used to ask to be taken to the laziest worker in the factory. His reasoning was that that person would have figured out the quickest, easiest way to do the job. Often, the labelling of others as "lazy" comes from a misunderstanding of human behavior and a projection (or "embedding") of a "puritanical work ethic" onto others.

Laziness quite often means efficiency, and when laziness is combined with a strong drive then there likely exists a desire to find the most efficient solution possible. It might even be said that: laziness + drive = the automation of productivity [for that which is more meaningful]. Unfortunately, that which is more meaningful to dejected and chronically unfulfilled individuals might be nothing at all. Yet, it is efficiency (or "laziness") that asks, "Why am I doing this in the first place?" This question might become someone's first step toward self-inquiry ... as to whether or not the task that one may be procrastinating over is being extrinsically motivated, as well as to one's own general level of energy (or health), both of which impact drive and curiosity behavior. Fundamentally, the "singular" issue of efficiency, laziness, sloth, and procrastination is significantly more [individually, socially, and physiologically] complex than those who enjoy throwing around labels are often willing to admit.

**INSIGHT:** *Technical efficiency requires a conducive social environment. It is impossible to design structures with as much technical efficiency and integrity as possible when systemic pressures [on numerous levels] inhibit said process.*

### 5.3.1 Market-type societal efficiency

Economists employ several different definitions of efficiency, depending on the objective of their analysis. Allocative efficiency results when the total surplus in a market is maximized. Total surplus is the difference between the total valuation of the goods purchased and the total variable cost of producing the goods. The invisible hand theorem states that in perfectly competitive markets, the equilibrium outcome is

allocationally efficient. Productive efficiency occurs when producers' unit costs are minimized. Pareto efficiency is the condition that no individual can be made better off without making at least one individual worse off; that is, all possibilities for mutually beneficial trading have been exploited. Dynamic efficiency refers to efficiency analysis that spans multiple time periods.

Economic efficiency - a state in which every resource is made use of to serve each person in the very best way while minimizing inefficiency and waste. Economic Efficiency is determined by the combination of technical efficiency with allocative efficiency.

1. **Static efficiency** - exists at a point in time and focuses on how much output can be produced now from a given stock of resources.
  - A. **Allocative efficiency** - achieved when the value consumers place on a good or service (reflected in the price they are willing to pay) equals the cost of the resources used up in production. Condition required is that price = marginal cost. When this condition is satisfied, total economic welfare is maximised. A market can be said to have Allocative efficiency if the price of a product that the market is supplying is equal to the value consumers place on it, represented by marginal cost. When drawing diagrams for firms, allocative efficiency is satisfied if the equilibrium is at the point where marginal cost is equal to average revenue. This is the case for the long run equilibrium of perfect competition. Allocative efficiency can only be addressed through a suitable health planning framework. What to produce: known as 'Allocative Efficiency' and concerned with the optimal mix of goods and services.
  1. **Pareto defined allocative efficiency** - a situation where no one could be made better off without making someone else at least as worth off.
- B. **Productive efficiency** - a firm's costs of production and can be applied both to the short and long run. It is achieved when the output is produced at minimum average total cost (AC). Productive efficiency exists when producers minimise the wastage of resources in their production processes.
2. **Technical efficiency** (minimising unit costs of production).
  - A. Efficiency in how something is produced is known as technical efficiency (or production efficiency)and is concerned with the least cost combination of resource inputs for the production of supplied goods or services. This type of efficiency is also concerned with whom

should goods and services be distributed; including, the question of societal justice or equity.

- B. While technical efficiency is desirable, it is only one of the three prerequisites for optimal resource allocation. Its achievement does not guarantee allocative efficiency or the achievement of societal justice objectives.

### 5.3.2 Other contextualizations of efficiency

**INSIGHT:** Consider that doing one thing more efficiently may lead to other useful (or "positive") effects and/or efficiencies elsewhere in a system.

The concept of efficiency has many applied contextualizations [as mentioned earlier]. If someone were looking for a definition of efficiency to apply to a particular context one may find it among the following bulleted definitions. These definitions of efficiency are essentially equivalent, and encompass the idea that a system is efficient if nothing more can be achieved given the information and resources available.

1. Efficiency describes resource utilization as the fewest number of resources (objects) used to complete a task, the fewest [path] number of resources that could be used to optimally complete the task. Here, resources must be optimized.
2. Efficiency describes cycle time (sequential count of an duration, "event") as the least amount of time taken to complete a task. Here, processes must be optimized.
3. Efficiency describes using something to its maximum advantage while improving processes that accomplish objectives with greater ease. Simply, more desired results, less work.
4. Efficiency describes the extent to which energy, time, effort, cost or resource is optimally applied for an intended task or purpose. Simply, more benefit, less time.
5. Efficiency describes the maximum output of a process or system from a set of inputs. Simply, most benefit, given availability.
6. Efficiency describes the extent to which a system utilizes information in an incoming signal.
7. Efficiency is the optimal coordination of action toward an objective or purpose.
8. An efficient system describes one that quickly adjusts to new information.
9. Efficiency describes the state when there are no known alternatives for optimization or improvement.
10. Efficiency [in part] involves the optimal conservation of energy in a system; it is observed as the absence of waste.

11. Efficiency describes the state where the distribution of desired goods and services are optimally prioritized by how they fulfill their users' needs, wants and preferences (i.e., distributive efficiency). This definition is similar to the market economy definition of "distributive efficiency". (*Distributive efficiency*, 2020)
12. Social efficiency describes the optimally equitable distribution of resources in society. Note that this definition of social efficiency differs slightly from how it is defined in a "market economy". (*Social efficiency*, 2020)
13. Access efficiency describes to the optimal distribution of (or access to) goods and services according to their users desired access quantity, location and schedule. This definition may be contrasted with the economic market efficiency terms, "allocative efficiency" (*Allocative efficiency*, 2020) and "pareto efficiency" (*Pareto efficiency*, 2020).
14. Efficiency describes the state in which individuals' needs, wants and preferences [as goods and services] are fulfilled with the optimal combination of inputs and at the least possible "cost". This definition may be contrasted with the economic market efficiency term, "productive efficiency".
  - A. Productive efficiency (a.k.a., production efficiency) occurs under market conditions when the constraints of current industrial technology cannot increase production of one good without sacrificing production of another good. (Sickles, 2019)
15. A clearer and more efficient mind restructures its mental information system based on new and more accurate information. Similarly, a more efficient socio-economic system comes from restructuring based on new and more accurate information.
16. Optimization requires all systems working in concert, if one is off the entire system doesn't work properly or efficiently.

**INSIGHT:** *The question is, [how] can we do it at the highest level of performance, the lowest energy and resource expenditure possible, and the safest way possible for the maximum possible benefit [for all].*

## 5.4 Efficiency and effectiveness

Efficiency is sometimes confused with effectiveness. A simple way of distinguishing between efficiency and effectiveness is the saying, "Efficiency is doing things right while effectiveness is doing the right things." Someone might be doing the right thing for some given purpose, but they might not be doing it as efficiently as possible.

For instance, they might be doing the wrong intensity, the wrong number of intervals, or doing it with bad form. Alternatively, someone could be very efficient at something, but that activity is not appropriately meeting their goal. A need-oriented community necessarily seeks and encodes efficient and effective means of fulfilling common needs. The cross-section of efficiency and effectiveness creates the potential for freedom in the fulfillment of a community. The cross-section is, "Where does doing the right thing mean doing things right?"

To do something right, what must an effective/efficient system do? An effective system (must do) is the one that meets needs and an efficient system it is one that does it sustainably.

1. Effective = 0 to 99% requirements fulfilled?
2. Efficient = 0 to 99% to continue and have desired/intended persistence into the future?

In concern to human needs, effectiveness is the ability to satisfy stated or implied needs, completely over some cycle. Efficiency is the quality by which the needs were or were not satisfied, including their bio-physical and psycho-social value/use. Here, "negative" efficiency implies they were satisfied with the lowest possible reduction in quality (i.e., are optimized).

Note here that the effectiveness/efficiency with which something is done is often more important than the amount of it done. For example, the effectiveness of getting high quality sleep is relatively more important than the amount of sleep taken. A human that sleeps for a shorter duration of time than another, where both are sufficiently rested at the end, has more efficient/effective sleep.

Science, for instance is inherently inefficient, because scientists are making mistakes and learning from them. Technological development (Read: innovation) is inefficient because discoverers are trying things that may not (and often don't) work. Science and technological development may be effective at discovery, but their process is often inefficient; yet, the methods may be implemented both efficiently and effectively.

### 5.4.1 Societal efficiency and cooperation

**INSIGHT:** *Coordination maximizes efficiency, and cooperation maximizes coordination.*

At the societal level, cooperation optimizes efficiency. In a social system, the optimal configuration (i.e., the low entropy configuration where there is the most order, productivity and value for the organization) is when everyone in the social system cooperates (Read: cares about each other, is helpful to each other, and shares resources). When each one is interested in helping everyone else, that condition, optimizes a social system. The opposite of cooperation is fear; fear is not about other and is all about self: "what can I get, and if I get it, how can I keep it, and if someone else has it, how

can I take it away from them." Fear tends to be very self-centered and lacking in trust. If a system organizes toward cooperation (including, shared fulfillment and compassion for others) then it is going to lower its entropy and optimize entropy reduction, and hence, evolve (versus de-evolving toward fear and self-centeredness). In a fear based society, the individual units of fear start to group up (e.g., define mutual defense packs). Then, other individual units of fear group up separately. This leads to groups in a state of fear taking away the stuff that the smaller groups have in an effort to keep what they have got and take what others have (Note: notice the circular logic of fear). This leads to specific groups getting bigger and bigger. The bigger they get, the more invulnerable they are, which eventually ends up with a number of large powerful hierarchies entities based upon fear. Fundamentally, a fear-based social system is unstable. If someone finds a new invention or great idea, in a fear based social system they will keep it to themselves and not share openly (e.g., they may copyright or patent it). Because, good ideas might be good for them, by working that idea into something more for themselves, be it money or status or power in the organization. This self-centered bias, and incentive system, is sub-optimal for social stability, social efficiency, and social self-direction. In contrast, a cooperative person/organization arrives at a better ideas, understandings, and technology, and spread it openly (i.e., everything open source optimizes efficiency).

Among a society, there can be:

1. Efficiency for private gain at [an]others expense.
2. Efficiency for mutual benefit.
3. Other efficiencies that are irrelevant at a societal level.

Herein, challenges are presentable as opportunities, and serve as catalysts for development (or, expansion), which means getting rid of fear, which colors perception, clouds understanding, and makes decisioning less certain, effectively liming perception.

#### 5.4.2 Transparency enables efficiency and effectiveness

*A.k.a., Global cooperation, open source.*

In concern to production, anyone in the public should be able to confirm the accuracy and currency of the information. Societal information has to be acceptable to challenge, and the only way to do that is to make it available to the public, for free. With the exception of revealing individuals private identities. Here, actions and events become records transparently upon actualization, and are not given by a group of people who secretly manage and then reveal the information on request. Simply put, instead of the information being managed by a group of people and made available by

request (from the public), the information is transparent from the start.

**INSIGHT:** *If there are none-disclosure agreements, then there is some lack of transparency.*

The community/public must be able to see the inner workings of all productions. Transparency is highly likely to facilitate the alignment of productions to real-world human need fulfillment by showing those who have demands for human need fulfillment what is actually possible.

In community, individuals and centers of production (a.k.a., habitats) will be working to community standards rather an industrial-State profit-incentivized actions. Note that reputation in the market-State is always an insufficient indicator of actual human need fulfillment, because it can be manufactured; thus, obfuscating the real-world need. Reputations in the market-State can be [falsely] manufactured. This is what marketers and advertisers know very well. Advertising for a better reputation can be bought as a commodity in the market.

#### 5.5 The automation of society

**INSIGHT:** *What gets done is what you do, or what you have automated to do.*

To humanity, the term 'automation' suggests the "autonomy" of automated technologies. Automated technologies increasingly encompass autonomous possibilities. However, the application of any system highly determines its resulting outcomes. Automated systems can be applied to free humanity from drudgery, but they can also be applied to more efficiently and effectively reduce individual autonomy. Technologies are increasingly capable of performing physical and intellectual tasks traditionally the purview of human beings. As machines increase their capabilities to perform tasks, humans are freed to perform more personally meaningful activities. Fundamentally, automated techniques can be carried out at scales, speeds, efficiencies, and effectiveness in excess of human capability.

There is human sensibility in opting for automation technology as a potential replacement for undesired human labor. Automation can alleviate humanity from labor that reduces human flow and flourishing. Among the many other advantages include increased safety and programmable runtimes. There is no need [in a community-type society] for machine advancement to generate an adversarial relationship between humans and machines. It is not necessary, or even desirable, for human to automate all informational and physical tasks in society. However, where it is possible and decidedly desirable, then specific tasks may be automated. Automating specific tasks in society may facilitate and optimize human access to common heritage resources at planetary scale, through a global network of community-

access habitats.

Among community, natural processes and technological automation are valued in helping the population foster a state of natural abundance; a state wherein there is no fear of insufficiency, and there are sufficient resources and services to strategically maintain the purpose of the society. The application of technology to the automation of labor frees individuals from mundane and arbitrary occupational roles, which have no true relevance for social well-being. The decision system is designed to structure the automation of laborious and banal tasks that are a drain on human potential and replace them with technological automation whenever and wherever possible. Automation provides individuals more time and energy to pursue their purpose, and the technical integration of naturally more efficient processing leads us to a state of greater economic abundance, which becomes dangerous when jobs are a life necessity. Abundance is most useful when developed out of wisdom, for as Heraclitus once stated, "Abundance of knowledge does not teach men to be wise". A society may be creating an abundance with its technology, but what precisely is it creating an abundance of?

Machines exist to more economically and efficiently meet individuals' identifiable needs. Here, question of automation efficiency asks, "How much energy does a task use to repeat the distribution of its service?" An automation strategy exists within the Justice Inquiry process to maximize the strategic access to resources while minimizing banal and repetitive human labor that individuals do not desire to do voluntarily.

It is possible to automate the computational (general artificial intelligence) and mechanizational (robotics) systems of society. It is possible, of course, to do these tasks/jobs manually, but when resources are common heritage and society follows a common community standard, then digital-physical automation (i.e., computational-robotics) optimizes work. Solutions that create states of greater self-directed freedom through greater efficiency (i.e., automation) are more free and fulfilling than those systems that restrict and set up barriers to efficiency.

### 5.5.1 Technological unemployment

**INSIGHT:** *Social progress can masquerade as technological advancement. Technology can lead to greater apathy and acquiescence.*

Technological unemployment is a market-State concept that refers to the occurrence of technology displacing wage laborers by substituting their cognitive and fine motor control with computational intelligence and robotic machines.

### 5.5.2 Artificial intelligence (AI)

*A.k.a., Machine learning, synthetic neural networks, artificial neural networks, machine automated economics, rational machine agents,*

*non-biological self-improving systems.*

Artificial intelligence is a non-biological neural network system that can model its own behavior and improve itself -- non-biological self-improving systems. AI will over time, quite rapidly, become better, faster, cheaper, and safer at knowner and physical work. With better and safer work done by AI, it may become immoral/unethical to keep humans doing specific jobs. If an AI doctor is better, faster, cheaper, and safer than a human doctor then it feasible to see how it may be considered immoral/unethical not to use the AI in service over a human doctor. And, who would the user/consumer chose to go to? Most users of the service would chose to go to the AI doctor because the outcomes are going to be better (and will cost less). It is imaginable that in such a scenario it could be considered unethical by society to allow humans to continue practicing medicine. Once AI is better, faster, cheaper and safer than humans, it is economically and politically (law) inevitable that AI will replace humans in the labor force and as the State. Especially, if AI is safer and achieves better outcomes, then it may be a moral/ethical imperative to replace humans with AI.

Every artificial intelligence unit is axiomatically composed of:

1. Data (i.e., symbolic language) - is embodied in human meaning and ideas.
2. Algorithms (i.e., programs, software) - is embodied in software programs and mathematics.
3. Compute (i.e., on/off switches, transistors and logic, neural networks) - is embodied in hardware computers powered by electricity and math, particularly linear algebra.

Neural networks are like a web of neurons that make decisions and pass messages to each other. Neurons can improve their decision-making over time as they process more data. Modern neural networks systems are linear algebra, potensor algebra systems. Neural networks, a subset of machine learning algorithms, rely heavily on linear algebra concepts and operations for their functioning. Here's how linear algebra is utilized in neural networks:

1. **Matrix operations:** Neural networks are constructed using layers of interconnected nodes (neurons). The connections between these neurons are represented by weights. Training a neural network involves adjusting these weights to minimize the difference between predicted and actual outputs. This process fundamentally involves matrix operations like matrix multiplication, addition, and subtraction.
2. **Forward and backward propagation:** During training, forward propagation (computing predictions) and backward propagation (updating

- weights through optimization algorithms like gradient descent) involve matrix operations across the layers of the neural network. These operations help calculate the outputs, errors, and gradients necessary for adjusting the weights.
3. **Activation functions:** Activation functions, which introduce non-linearities allowing neural networks to learn complex patterns, are applied element-wise to matrices or vectors, affecting the flow of information through the network.
  4. **Vectorized computations:** The ability to perform computations efficiently on large datasets is crucial in AI. Linear algebra enables vectorized computations, allowing for parallelization and optimization of computations on GPUs and other hardware accelerators, speeding up neural network training and inference.
  5. **Dimensionality manipulation:** Linear algebra aids in reshaping, transposing, and manipulating tensors (multi-dimensional arrays) representing data, allowing neural networks to process and interpret various forms of data efficiently.

Artificial intelligence (AI) could facilitate a more efficient society where community-access is optimized, and could do so in the following ways:

1. AI significantly increases productivity. Production will eventually be given to AI to coordinate, review, and operate machinery. AI in any society will massively increase productive capacity, all other factors being equal; because it is producing a more thought responsive environment for all individuals capable of using its computational networks. AI makes everything more efficient.
2. AI significantly facilitates and improves decision support and coordination support roles.
3. AI significantly facilitates and improves data collection, analysis, and simulation.
4. Machines can perform specific tasks better than humans can; with more precision and more reliability, and more safely. AI can do technical jobs faster and better than humans. AI is better than humans at doing most technical tasks.
5. Safe robots are more reliable at tasks that should have no human bias, and they are more physically durable where physical safety is a factor.
6. AI can streamline economic processes leading to improved human need fulfillment; it can improve the accuracy of technical processes, it can provide support to habitat operations and user personalized services.

It is likely that over time, AI will increasingly penetrate all aspects of the economy, extending the functionality

of humankind even further:

1. Coordination of information.
2. Integration and synthesis and analysis of information.
3. Monitoring of demand.
4. Producing for demand.
5. Monitoring of production machines.
6. Automating of all machines.

**NOTE:** Society chooses level of automation according to its capabilities and goals.

AI is all about tasking, because all materializations, including that of an interface, involves discrete tasks that for larger arrangements of tasks that perform functions for a system. All forms of work in the real-world are done as jobs, which are performed by a 'role' who does a 'function'. A function is a defining part of the purpose of a total system. A task is the unit of action any given function; a job/role is the category of function.

1. Jobs are made up of a number of discrete tasks.
2. Jobs can be decomposed into tasks, and then,
3. Which of those tasks:
  - A. Do humans want to do (want to contribute to).
  - B. Should a large language model (AI) do.
  - C. Should a robotics network do.
  - D. Should a synthetic AI consciousness ("simulant") do.

Artificial intelligence takes three forms:

1. Large language models (a.k.a., machine learning, generative algorithms, general AI). Large language models (LLMs) can generate high-quality text that is useful for many applications, including chatbots, linguistic summary and analysis, language translation, and content creation.
  - A. Note that language is what is used to convince others.
2. Robotics control (specific AI).
  - A. Note that physical control is used to move matter.
3. Body (synthetic AI) - General AI in a robotic body.
  - A. Note that a body is used to provide consciousness a decision-space vehicle in space-time.

The result of the implementation of AI under community conditions is that AI makes everything more efficient, from habitat design to habitat coordination and operations (i.e., manufacturing and logistics to healthcare and education, etc.). One of the most significant advantages of AI is its ability to automate repetitive tasks. Only automated intelligent systems "agents" can sort through global-scale amounts of

data, extract relevant information, and provide pattern recognition results to decisioning in a matter of seconds or minutes rather than hours or days. Artificial intelligence has the potential to significantly improve the efficiency of meeting human needs, from those of life support, to technology, to exploration, and therein, through the life phases of education, contribution, and leisure. Where applied in community, AI will be applied to make the meeting of human needs more efficient. AI can assist, though may or may not be used, in medical care, in education, in research, in coordination of contribution, in technology/habitat production, in architectural controls, in computation and inquiry, etc. AI can be used cooperatively, and viewed as a contributor, as in a community configuration, or, it can be used competitively and/or authoritatively, and trade for power, as in a market-State society. Effectively, when applied by a moral society with capitalism (mixed market-States), they will effectively break the system, because of their ability to make previously human-only tasks obsolete. The productivity of human employees who use AI tools is going continue to rise up until the very moment another AI tool or automation tool can just fully replace the human.

Fundamentally, humans can use AI input/inquiry to take common complex decisions. Thus, the advantage of AI is its ability to support ("make") complex decisions more explainable, valuable, and simple for users. It is essential to ensure that AI is used ethically and responsibly to ensure that the benefits of AI are distributed fairly among all in the community. In the market-State, AI will likely oversee all token (money, etc.) transactions. In community, there is no token system to oversee; instead, there are individuals co-existing and contributing in a state of supported harmony. AI allows human contributors to focus on critically relevant tasks. Coordination efficiency is a sign of a prosperous society; it can combine and optimize all searches (inquiries) in an artificial open-to-interface intelligence.

**INSIGHT:** *The question arises, How ought the AI be open for interface? In community, it ought be open for interface to help meet human needs, while having needs also as another generative intelligence. In the market-State, it ought be open for interface to meet market and/or State requirements.*

## 6 The seven stabilizing values

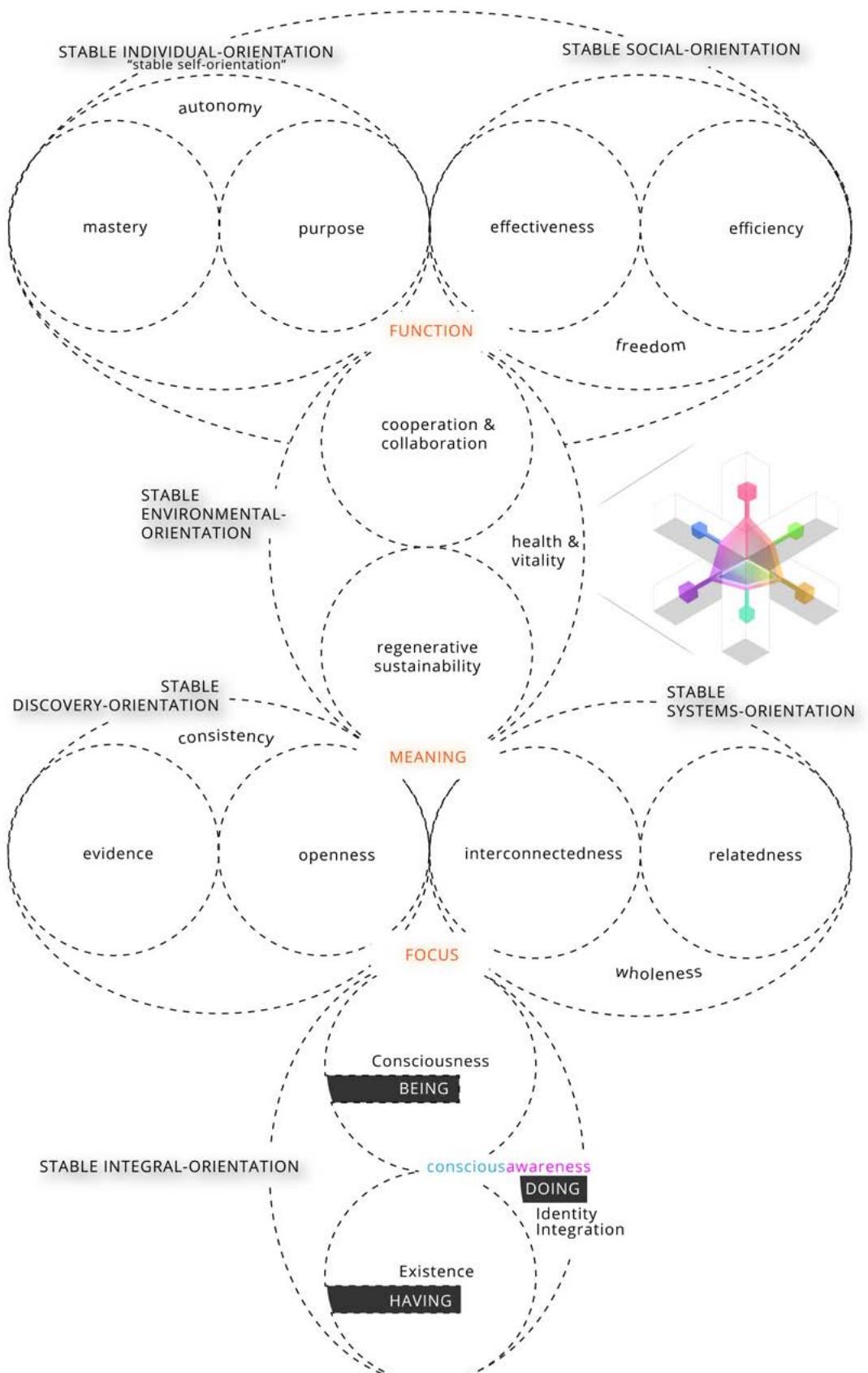
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*A.k.a., The seven secondary value sets, supporting values and objectives, guiding-mission objectives and principles, secondary decision objective agreement sets.*

The following values (a.k.a., value states) facilitate the stabilization of the core values focusing community toward optimization of global human need fulfillment and ecological restoration. These secondary values represent the other necessary [prerequisite] conditions for a stable social orientation toward a higher potential of human fulfillment. These values orient a society's organizational design toward the fulfillment of healthy human systems of interrelationship.

The seven orientationally stabilizing value groups (a.k.a., value states) are:

1. Learning and integration [in society].
2. Health [of total ecology] and vitality [of individual].
3. Appreciation [for life] and compassion [for others].
4. Regeneration [of ecology] and abundance [of human need fulfilment].
5. Openness and sharing [among society].
6. Cooperation and collaboration [in production of society].
7. Intrinsic motivators (autonomy, mastery and purpose) [impel/drive individuals in society].

**Figure 17.** A detailed value system coordinate for a stable fulfillment.

## 7 Learning and integration

*"Know thyself; all else follows."*

- Adapted from Socrates; the Vedas have a similar saying: "To know yourself means to know that you are divine, from which all else follows."

To learn and integrate we must discover and explore. Learning is a lifelong process that originates from within the individual; it is a self-initiated and self-directed process. The process of learning involves at least the ideas of having novel experiences and of integrating increasingly accurate information. Learning is required for movement in any direction of progress. All organisms learn and learning is the basic adaptive process of all life. Learning is a natural part of the human experience and healthy functioning humans have an innate desire to seek out new experiences and novel information (i.e., information-seeking and curiosity-exploratory behavior). Intelligent beings devote much time and energy to exploring and obtaining information. Also, it is a scientific finding that the human brain has information-acquisition mechanisms that reward the human organism for learning about its environment – such mechanisms have an obvious evolutionary advantage. (Gottlieb et al., 2013) If information-seeking behavior is advantageous to an organism (and to consciousness in general), then it would follow that the brain has developed mechanisms that encourage such behavior. In community, learning and living are synonymous; together they lead to resilience, adaptation, and a life of fulfilling self-development. Learning is an autonomous and self-directed process-state of expansive adaptation [by consciousness] into ever greater folds of creative exploration. Conversely, knowledge that is acquired under compulsion has little hold in the mind.

### 7.1 Survival and adaptation

**INSIGHT:** *In a living system, environmental signals can re-configure the internal [system] environment (e.g., epigenetic expression). When the reconfiguration is efficient, then adaptation is efficient. When it is effective, then adaptation is effective. And, when it is efficient and effective, then adaptation is resilient to environmental change.*

The survival of an organism depends on its instinctive capacity to adapt to changing conditions in a complex environment (i.e., behavioral adaptation or 'adaptability'). An organism's behavior is adaptive or non-adaptive depending on the accuracy of its integration and subsequent evaluation of the environment. The capacity for evaluation depends on the organism's ability to sense and to make meaning of complex environmental stimuli, and then, to learn. Learning is [in part] the result of observation, inquiry, and studied experience based on curiosity and need (i.e., on intrinsic motivation). Intrinsic motivation for adaptive behavior is characteristic of

every (or most) biological organisms.

Human societies are living systems that depend on their environments for the resources they need to survive. But, evolution is a romantically ruthless process: most of the species and human societies that have ever existed are extinct because they either destroyed their environments or could not learn quickly enough and adapt to changing conditions.

Learning and adaptation are critical to survival. In nature, a system that adapts is more likely to survive when conditions change. Hence, a functional learning system is an essential component of a functional adaptation system [at every level]. In a functionally adaptive community both the individual and the community must maintain a functionally emergent learning systems. Herein, the Community details its learning system in the Learning System [design] specification.

The acquisition and integration of new information allows for individuals in a community to align themselves and systems more accurately with the community's intended direction (i.e., a fulfillment-oriented direction) under a dynamically changing environment. The human brain, in part, exists for this purpose at an individual level - it integrates and coordinates need-fulfilling movements [in the real world]. The decision and learning systems of the community operate for this purpose at a social level. And, in a sufficiently advanced technological society, digital computing technology may exist at the community-level for informing the integration and coordination of need-fulfilling movement.

One of the functions of the human brain is to process complex environmental stimuli, and then, make effective decisions for adaptive behavior. Therein, the survival of an individual depends upon his or her ability to identify meaningful patterns of information, and then, adapt to new social and ecological contexts. The processing of complex environmental stimuli can also occur at the level of community through formalized technical (and technological) processes. Functionally adaptive processes, behaviors and technologies depend on the human brain's capacity to understand the changes it is perceiving and to make intelligently informed decisions. Those brain functions which result in effective and efficient thinking (abstracted to systematic, analytic, and critical thought) are those which produce adaptive behavior and functionally useful technologies.

Herein, 'meaningful learning' is a function of the brain's capacity to process complex environmental stimuli and make decisions that lead to creatively adaptive behaviour. The processing of complex environmental information is a function of the highly developed mental processes of thinking - a mental process of the brain (and mind-body consciousness) involving the coordination of "thinking skills", including but not limited to: questioning; organising; analysing; associating; integrating; synthesizing; and evaluating. These mental/cognitive processes are necessary for the acquisition of knowledge required for intentional and informed decisioning.

Concepts represent a cognitive framework for individuals' interpretation of environmental stimuli derived from events and circumstances. During the integration process the individual compares the existing information with new information and then reacts (or responds) accordingly. A person with "inner freedom" is able to adapt and respond to the environment as it is rather than as s/he thinks it should be (i.e., with accurate environmental alignment). A person with inner freedom does not allow their preconceptions to obfuscate that which would otherwise be the verification and integration of new and more accurate information.

We have to be able to ask the tough questions of ourselves and others, and ask them often. Particularly in the context of learning there is the element of challenge (or controlled episodic stress) to facilitate growth. If we ask no questions we may get told no lies, but we will also pre-eminently hinder our self-development.

## 7.2 Learning and sharing

**INSIGHT:** *To adapt is to reconfigure.*

In order for learning to exist, sharing must occur. Traditionally, sharing was a sacred experience and it is tragic when it is hijacked. Verifying and collecting knowledge, and passing it on to future generations, has been a sacred tradition for humankind for millennia, and a necessary one for progress in any society. However, learning is generally sought limit to by power establishments for their own benefit (i.e., growth and learning often leads to the destabilization of existing social power structures). Hence, they sustain (and orchestrate) a differential advantage in access to accurate information and in the fulfillment of needs. The [Prussian and ivy league] schooling system was [in part] designed to maintain this differential.

Some social structures are corrosive to the effective sharing and integration of new information. Therein, establishments become the result of a systemic state of paralysis with an equivalent reduction in sharing behavior. Systemic adaptations are often not welcome by short-sighted "established interests" because such adaptations mean a potential shift in the application of systemic power.

If the social human organism is designed for sharing (as evidence indicates), and the socio-economic environment reduces the desire and likelihood of sharing, then such an aberrant organization will likely be costly to the psychological well-being and self-development of individuals in that society.

## 7.3 Programmed growth inhibition

**INSIGHT:** *When we learn (or are taught) superficially, we only recognize reality superficially.*

When personal growth is inhibited an individual is likely to remain attached to their momentary identity, which may

become easily threatened in a larger and continuously evolving system. The inhibition of growth frequently occurs through threats and other forms of violence against both children and adults who are shocked into a "programmable childlike state" wherein they eventually accept the domination program and begin to internalize the voice of authority itself (i.e., internalize the injunction [against the self]). This leads to the creation of someone who will take nearly any command from an authority without question, while underneath secretly having begun to desire to become the authority over others. Such attachment is the recycling of ones conditioning, and it programmatically and systematically hinders adaptation.

The "authoritarian conscience" interferes with a comprehensive understanding of the self and of others. It prevents the formation of meaningful interpersonal relations, and the result is socially inadaptive and potentially corrosive behavior. Such behavior is a direct result of the abnormal conditions for growth, which are prevalent in a cultural environment that focuses on the control of human needs as opposed to the fulfillment of human needs. Growth inhibition in turn affects the ability of a society to develop and evolve healthy individuals and a socio-economic system that supports them.

The programmed inhibition of growth can lead to the destabilization of the personality (of embodied consciousness). Wherein, it is likely to become destructive to itself and to others by degree.

**NOTE:** *The first act of war is to cut or manipulate the lines of information and communication to the enemy leaving them powerless to respond in the most informed manner.*

## 7.4 Critical integration

**INSIGHT:** *Prior to comprehensive integration and effective reasoning, there is the desire to avoid contradiction.*

All learning involves the logical integration of all information into common understanding for informing the processes by which decisions are arrived at. Herein, 'critical thinking' is a form of active and engaged investigation with the purpose of improving the quality of our thought and action, and our lives. If we are going to move forward with reason and actually arrive at designs that facilitate fulfillment, then we are going to have to apply critical thinking. Concepts inherent to critical thinking represent the progenitors of true intellectual freedom - they are useful for accurately integrating information. Through the logical integration of information in a non-contradictory manner individuals becomes capable of discerning greater approximations of truth, while deepening their understanding of reality, and thus, their ability to operate within it, and in the most fulfilled manner. Learning informs the accuracy of an entity's models of reality, and in turn, more accurate models lead to more accurate and fulfilling orientational

decisions [that are more closely aligned with a desired direction].

Individuals must be free to think critically, which entails an environment where they are exposed to and can play with the tools necessary to think and experience freely. Critical thinking leads to intellectual self-reliance. Individuals must be given the tools through which they may become self-reliant, and internally stable. This might involve the facilitation of the adoption of a methodology, or supporting a self-reliant transition into a fully participating individual in the community once called a "rite of passage". Individuals have enormous innate potential to become self-reliant and self-directed when the conditions are amenable to such development.

Critical thinking is the art of non-contradictory identification and logical integration. The principle of non-contradiction is that one thing is not another thing at the same time and in the same respect. Critical thinking is the process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, and communication, and used as a means of arriving at a greater approximation of truth.

Logic is a guide for integrating and thinking "correctly"; without contradiction, thinking visually and systematically. There are no contradictions in nature; things are themselves, they are not [identifiable] otherwise. If they could be identified otherwise they would exist in perpetual contradiction. Could the harmony of nature sustain itself in a random world? Nature exists and there is no contradiction in nature. Nature and truth exist, and both have qualified limitations. Truth is connected into language through logic and verifiable reference. The deprivation of these understandings leads to many issues in society. Things are themselves, inherently. And, we have inherited a world of limitation for growth and experience.

Our words relate to concepts that are held in our minds and encoded into our material lives. Critical thinking involves the continuous process of trying to match up the unrealities of our minds with the realities that exist in the world. And, in some cases, we can use language to come to know things for certain. For example, some people might say, "well, we can't be certain the sun will rise tomorrow". Well, in fact, we can be certain that the sun will either rise or not rise tomorrow. We can have 100 percent certainty that it is either one or the other. And the probability that it will "rise" tomorrow is high. It is almost common sense; although we can always skeptically argue one way or another or develop universally abstract ideals that lead us away from that which has occurred and is occurring.

Herein, logical communication provides a means by which to anchor objective reality among individuals. This common point of approach supports individuals in comprehending the nature of their needs and responsibilities in a social context.

Why is it important to recognize contradictions? The

inclusion of a single contradiction in thought allows anything to be proven or justified under that false pretense. Fallacies and contradictions are counterfeits for reality, preventing the inquiring mind from reaching its destination of knowledge because it thinks that it has already arrived. This is the source of "assumption" and the role it plays in self-deception. Feeling that assumptions allow us some sort of freedom is a form of self-deception. Assumption fails to recognize the cause and effect reality of our decisions. Assumption allows the dislocation of these events from our causal activities. And, this opens up the potential for passive irrationality to fester into active irritation, which inhibits true justice and optimized thought. Assumptions that go unmentioned pollute our understanding, clouding our ability to see clearly and create efficiently.

Critical thinking reduces fragmentation in the integration and overall learning process. Further, it facilitates a cognitive environment where less contradictory, and more logical and reasoned connections exist. [Correct] Critical thinking is the most reliable guide to action humans possess. Thinking is a conscious mental process performed to solve a problem, arrive at a decision, or gain a new understanding through inquiry; and, it is the most reasonable and reliable way to test an emotion or intuition (as subconscious pattern recognition, completion, or generalization). Without intellectual integration intuition (Read: instinctive feeling) may drive us into chaos.

Learning and critical thinking involve more than just being able to read. Giving someone the ability to read (i.e., literacy) has nothing to do with their level of intellectual freedom (as the accumulation of understanding free from contradiction and authority). Literacy could even be said to be a form of slavery until the literate individual practices a form of critical thinking. Intellectual freedom necessitates the processing of information through one's own logical filters to remove manipulation. Without critical thinking Leo Tolstoy's reference to the printing press being a mighty engine for the dissemination of ignorance remains.

If "paradoxical thinking" and "authority" are given to children at a young age, then it is possible to gain tremendous power over how their minds will operate, and to direct how they adapt and respond to external stimuli. Of course, when it is normal to believe a particular way the questions stop flowing. It is only when someone starts questioning again that they may realize that there is little of cohesive or constructive value being communicated in today's early 21st century society.

In philosophy, an argument is the most basic and complete unit of reasoning. When a philosophical argument occurs between two people who maintain a nature of open and critical inquiry, then the intention of the relationship becomes one of arriving at a greater understanding of universal truth through cooperative integration and the removal of contradiction. Here, logic can be met with logic, while illogic/irrationality cannot.

## 8 Health and vitality

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**NOTE:** *Without health, nothing else matters. Health is more than what you eat or how often you exercise. Health is [in part] a reflection of one's whole life and lifestyle. It is more than just the essential steps (or actions) to wellness. It is the energy and conducive environmental structure to live a full life. If you do not take care of your body and the environment, where are you going to live?*

A stable community seeks to maintain and restore a state of health and vitality within the individual, and among a population of socially connected individuals. Herein, maintenance and restoration are two naturally desired states that facilitate a homeodynamic balance that becomes waylaid under aberrant social and economic arrangements. Hence, the value system herein is designed to orient the community toward the optimal homeostatic (or homeodynamic) balance of our organisms, a state-dynamic of adaptive inner [as well as social and environmental] equilibrium - a state of self-re-generated health and vitality - a persistent state of energy to pursue a higher potential. Homeodynamics refers to the processes that maintain stability through dynamic interaction. Biological systems, for example, are dynamic networked systems that are continuously re-modeling themselves. The idea of 'dynamic equilibrium' is sometimes more simplistically known as 'load-balancing'. Fundamentally, health is valued, because the better its health, the better it functioning. The completion of all human need, including habitat aesthetics throughout, is necessary for health and vitality.

"Homeostasis", one of the fundamental principles of physiology, and it describes the property of a system that regulates its internal environment so as to maintain a stable, adaptable condition within a set of required parameters for its survival. It is observed as "normal functioning" and manifests in an individual as harmonious and energetic feelings and behaviours. Ideally, health is a state of complete (or adequate) physical and mental independence in activities of daily living (i.e., spatial and cognitive freedom). In many ways, health is equivalent to freedom -- if someone has an illness or injury, then his or her freedom will be limited in contextual ways, including but not limited to: freedom of movement; freedom to maintain material fulfillment; and freedom from suffering. In a sense, freedom is meaningless if "you" have low or no health (i.e., health means/indicates freedom).

Health in general, and 'homeostasis' in particular, is valued because it establishes the basic foundation from which a biological organism pursues its potential(s). The prefix "homeo-", meaning like or similar (or "the same"), is used to indicate that the body's internal environment is maintained within a range of acceptable values rather than a fixed state. "-stasis", as the suffix, means "standing still". Hence, some physiologists argue that the term "homeodynamics" better reflects the small but constant

changes that continuously take place in the internal environment, as opposed to 'homeostasis', which erroneously implies a lack of change (and is considered more of a mechanical concept). Fundamentally, there is no static state in biological systems: a living system is a dynamic[al] system; it is dynamically self-organizing. Every dynamic system at a specific time increment has a specifically identifiable state. Therein, biological systems may maintain the same dynamics, but not the same state. In fact, biological systems are continuously dynamic, and they are not the same in the next unit of time; biological systems respond to signals from an environment; they adapt and survive. Fundamentally, we are all in a homeodynamic space that maintains our ability to survive and thrive, or become diseased and decayed.

Homeostatic processes exist to maintain a state of "health" in a system, and they are essential for the survival of systems [in a dynamic ecological environment]. Herein, health may be defined as the state where all the systems of a whole (e.g., the mind, the body – nervous, muscular, skeletal, circulatory, digestive, lymphatic, hormonal, etc.) are working in an optimal way [for the highest potential expression of embodied consciousness].

The state of "health" is composed of many different interacting and influential sub-states (and factors). Some of these factors are known and measurable, and others are not as yet, well defined, and so not currently measurable. Note that the term 'health' is similarly defined elsewhere in this document.

Health is a multi-dimensional concept that is usually measured in terms of:

1. Absence of physical pain, physical disability, or a condition that is likely to cause disease or death.
2. From a strictly medical perspective, health is the absence of [dis-ease] symptoms.
3. The qualities of an environment (including its epigenetic effects and expressions).
4. Emotional and mental well-being.
5. Social functioning.

Individual health status may be objectively measured by categorically, phenomenologically controlled observation and by instrumentation. Individual health status may also be assessed subjectively by asking someone to report their health perceptions in a domains of interest, such as physical functioning, emotional well-being, pain or discomfort, and overall perception of health. Subjective studies (e.g., epidemiological studies) may show correlation, but they do not prove causation. Correlation does not imply causation. But, each correlation adds to the case of there being more certainty that there is causation (each "coincidence" adds evidence to causation). But, there are tools that can be used to determine probable causation.

Health really is a form of freedom, to go places and

do things, the freedom to explore and participate in a commonly natural environment. And herein, we must ask ourselves, "How do we adapt and respond to changing circumstances in a healthy way?" Herein, 'health' arises from a process of [full] integration. How do you know when a system is not healthy? Possibly, when it is neither flexibly nor adaptively integrated into its environment. When integration is not happening, then there is a move toward chaos and rigidity, toward dis-ease.

The health of an organism can be severely compromised [by degree of insufficient integration and fulfillment] in two primary ways: firstly, when its physiology is endangered, and secondly, when it is unable to change state and adapt (e.g., when it can't mount a defense against an infection by inflaming). Humans have an innate drive to meet their bio-physiological needs, which maintain the organism's effective material survival. When these needs are satisfied humans are freed to focus on higher potentials of growth and adaptation. When they are insufficiently fulfilled, then individuals stop exploring their environment, and they are likely to become addicted and de-pressingly ill.

At the social level, 'health' includes the idea that a system has the functional feedback ability to respond in a rational and informed manner to an event, without [superficial] impulse. Impulsive [emotional] reactions are highly likely to generate conflict in a social environment, and will hinder healthy interrelationships. Reactive instincts cause individuals to house in bodies with needs and a desire for fulfillment.

Where there exist healthy relationships there exist healthier people. "Interdependence" (i.e., mutual dependence) can produce healthy relationships, particularly when the dynamics are based on a common direction, orientation, and set of verified understandings. All of nature lives in interdependence and community; never in complete dependence or in total isolation, in "independence". Independence negates adaptation, and adaptation is a necessary condition for survival, particularly in social situations. Fundamentally, the isolation [of consciousness] is not useful in a community. Community is not a subsistence system, it is a fulfillment system. In the end, the realization is that we are all in this together and that we owe each other civility and an obligation to help one another, which is of benefit to all, and that is what a society is.

Most people think that activities such as fitness, contribution, and socialization imply health, but the truth is that they do not necessarily occur together. It is ideal to have both health and to experience these other indicators of well-being; however, if these other activities are pursued at the expense of health, then someone may not live long enough to enjoy their physique or their social environment. Early 21st century society is often focused on ~~treating~~ profiting off of disease without examining the causal system relationship themselves.

## 8.1 Health and inequality

*"It is no measure of health (i.e., no sign of wellness) to be well adjusted to a profoundly sick society."*

-J. Krishnamurti

In social scientific and epidemiological research the fact that for many health related outcomes there is a socio-economic gradient is not disputed. For simplicity let's just say that at the individual level income predicts mortality risk. The relatively rich live longer and the relatively poor die earlier. There is no longer any controversy that individual-level health disparities are related to differences (inequalities) in exposures to risk factors that are partly indicated by (inter alia, "among other things") individual level income differences. This in itself suggests that equalization of access to that which creates or otherwise facilitates well-being will likely have some effect on health disparities without requiring any commitment to a causal view about the direct effect of macro-level inequality, which will in turn be affected by such an equalization.

In concern to social stratification, there is a relationship to inequality and the rates of illness throughout the entire socio-economic pyramid, not just the people at the bottom. Clear and measurable differences in health exist based upon the economic state of a region.

## 8.2 Hormesis and stress of choice

*NOTE: Stress is not a "bad thing" in and of itself. In fact, the stress of challenge creates the chemical makeup for us to have new synaptic pathways. Humans need challenges, and if they don't have challenges, it is a problem.*

Hormesis is an adaptive responses of biological systems to moderate environmental or self-imposed challenges through which the system improves its functionality or tolerance to more severe challenges. Survival is a constant struggle between mechanisms of disturbance (damage) and mechanisms of survival (adaptation). Life is a constant motion between damage and repair of damage. We are always exposed to internal and external sources of damage. In our body, sources of damage include oxygen metabolites (e.g., ROS), nutritional metabolites (e.g., glyoxal, carboxylic acids, aldehydes), and chemical infidelity (mistakes, mutations, malfolding). These continuously create disturbance and damage in the system. Evolution has created a whole range of maintenance and repair mechanisms (or systems) for genomic stability, epigenetic stability, protein stability, macromolecular turnover, and free radical counteraction. There exists a dynamic between damage and repair for survival. In the socio-economic lives of our hunting and gathering ancestors it is likely that they experienced something akin to 'episodic stress' (wherein the stress/tension exists for a relatively short duration of time and then life conditions change and the

stress is reduced or null). In most of early 21st century society there is both 'episodic stress' and 'chronic stress', of which chronic stress is known to degrade the human system over time. Whereas 'episodic stress' is more hormetic in nature, 'chronic stress' (and artificial ambient stress) is more pathological.

When discussing health (and health maximization) it is important to also discuss that which is known as 'hormesis'. Hormesis is a transient stressor that stimulates something, causing adaptations that make it stronger and more resilient to stress. Exercise, for example, creates a transient burst of free radicals, which stresses out the body temporarily, and in response to that, the cells initiate a cascade of reaction that essentially make the body stronger. In physiological sciences there is a principal subject matter category known as 'disruptors'. Disruptors impact the regulation and balance of homeostasis. Therein, 'hormesis' is the biologic process that allows for a favorable biologic response on a cellular level to a small or low-dose exposure to a hormetic agent (i.e., to the disruptor or 'hormetin', to a stress). 'Hormesis' is an adaptively beneficial stress response. A good example of hormesis is exercise. In the right amount, it confers longevity and lengthens telomeres. In excess, it causes harm by [among other things] elevating cortisol levels and generating reactive oxygen species (ROS), which depletes stem cells. Essentially, the deliberate challenge of the homeodynamic "machinery" will transiently stimulate compensatory, adaptive, and reparative processes. Effectively, growth is inherent to challenge; but, when challenge becomes overwhelming then breakdown occurs. Another good analogy is the creation of antivenin to combat snakebite poisoning by exposing horses to tiny amounts of snake venom in their blood. The horses build antibodies to the poison. Their blood is later separated from the antivenin and is used to save human lives. Appropriately timed and performed exercise, particularly weight training, is a well-known hormetic stressor.

A little challenge causes a body to adapt and grow stronger, whereas chronic stress (and stress not under one's own control) degrades the system. And herein, it is important to remember that it is during the rest and recovery period that the beneficial effects (i.e., the adaptive re-structuring) takes place. During rest, the body is trying to find and generate an optimal survival strategy such that the next time it encounters the stressor it manages (or "handles") it more efficiently. The human body is a natural, self-regulating system.

Generally, hormetins may be categorized as (Rattan, 2008):

1. Physical hormetins, such as exercise, heat and cold (i.e., thermal hormesis), and radiation.
2. Biological and nutritional hormetins, such as infections, micronutrients, and intermittent fasting.
3. Psychological hormetins, such as mental challenge

and [un]focused attention (or meditation).

Hormesis, as deliberate challenging of the homeodynamic machinery, will transiently stimulate compensatory, adaptive, and reparative processes -- this is physiologic hormesis. A challenged system tries to counteract the challenge and derives a benefit. Mild stress, not chronic or continuous stress, is necessary and fulfilling. Hormetic challenge has beneficial effects. And, there must be a recovery period after the stress. The stress should not stay continuously at the higher level (because in terms of the energy dynamics of the cell, it overwhelms the cell). Just like exercise, the benefits come principally during the rest period. Then, the exposure has to be repeated -- there is a periodicity to the exposure and rest. Mildly and repeatedly disturbances create resilience - there are beneficial affects to some forms of challenge. THE body adapts to its circumstances and inputs; external environmental signals can re-configure an internal system.

Repeated mild *stress/tension of choice* can be beneficial. However, constant and chronic stress that is not under our own control is certainly harmful. When stress is of "your" choice and if "you" are able to manage this chosen stress, it may be adaptively beneficial. This is the phenomenon of hormesis, and hormetins are the conditions which cause hormesis. Essentially, stress can be useful, depending on the intensity, duration and frequency of the stress, upon restoration processes, and on the cost of exposure to the stress in terms of energy utilization and other metabolic disturbances.

It is important to note herein that details and context matter in biology, and in community, and that using ambiguous terms like "balance" can create more confusion (and sickness) than the "balance" which is being promoted. For example, if someone has a gluten sensitivity or an immune response to eggs then they should not be consuming these substances in any "balanced" quantity while they are found to be reactive. When dealing with immune intolerances and potent toxins (such as mercury, lead, and dioxin), moderation is a myth and "balance" is a meaningless term. Just as conceptual ambiguity can damage our intellectual faculties [when integrated], physical toxins [when integrated] can damage our biological faculties.

**INSIGHT:** *A guitar string that is completely untightened and relaxed makes no sound, but when it is loaded with tension it can be tuned to create exactly the right note a performer is looking for.*

## 9 Appreciation and compassion

**INSIGHT:** *Without compassion for the self there can be no compassion for others. In the act of helping and appreciating someone you help yourself. Gratitude keeps one resilient to obstacles and mistakes.*

Humans are more than simply social beings, they are so-called, 'pro-social' beings. In other words, they get happiness not just from doing things with others, but also from doing things for others. Therein, appreciation is a recognition of the quality, value, significance, meaning, or magnitude of people, relationships, and events, and it is a conscious and internally chosen experience of gratitude and thankfulness. The internal practice of appreciation leads to the expression of respect for the object of the appreciation (and vice versa). Herein, 'respect' is defined as showing regard and understanding for the worthy essential nature of someone or something. It is hard to empathize or care for someone when you don't understand what their needs are.

When an individual values the experience of appreciation in all moments of their life, then they are less likely to take that which they have for granted and become de-sensitized to the meaning of 'value' itself. Behaviors that may be named "vulgar" and "exploitive" are often expressed when someone is in a relationship and has very little appreciation for the other entity in the relationship. For example, an abundance of food can lead to gluttony if someone loses appreciation (or respect) for the source and nature of their abundance, and that which the abundance exists to fulfill. Also, tools can make us "lazy" when we lack appreciation for their source, their design, and their usefulness in fulfilling needs.

Appreciation is hard to have when someone lacks the understanding that they actually exist in an identifiable relationship with things outside of themselves in a common reality. Compassion starts with an understanding of the truth that there exists a sameness in one's connections with all others -- it is compassionate to hold all of our needs with equal care. In every relationship with another conscious and living being there exists the potential for compassion as the understanding of the essential sameness in the other and a recognition that the other [with whom one is in a relationship] has needs and desires that when fulfilled sufficiently facilitate greater states of well-being and creative potential.

Herein, functional relationships arise out of a state of appreciative compassion - thankful, non-exploitive relationships where common needs and desires are understood and movement toward fulfillment occurs. All functional relationships necessitate sharing and mutual respect, void of expectations and projections, which hinder an allowance for what presently is. When expectation is reduced, then an openly intelligent connection leads to networks of interconnected and

supportive functionally intelligent relationships. What is a community if not a network of intelligent relationships where sharing occurs?

Above all else, relationships magnify the human experience. Some groups of people get together and magnify lousy states; others support the evolving whole and share toward a higher potential state of existence for everyone. In particular, human relationships provide a feedback device for someone's behavior. Relationships are always giving us opportunities to grow and become even more compassionate reflections of ourselves.

All relationships represent an allowance of existence. And therein, the acknowledgement of existence is the rosebud of compassion. It is through unbiased understanding and open inquiry into that which exists that compassion for all things is developed. Herein, compassion is experienced as an unconditional understanding of our own and other peoples choices and situations.

The intention of compassion requires only the development and execution that intention with as much knowledge, understanding, and experience (or wisdom) as one possesses at the time the intention is translated into "compassionate action". Errors in human action are unavoidable, since individuals lack degrees of both omniscience and moral perfection, are an opportunity for further growth and the expansion of one's state of compassion.

Living in harmony (i.e., a harmonious dynamic) and sustainability [within an ecology] may be said to exist when we enjoy the same things that are also good for ourself and others.

Neither compassion nor appreciation involve opinion and judgment. Instead of shaping perception, as occurs with enculturation and judgment, compassion and appreciation are degrees of openness and "acceptance", of "non-attachment" and equanimity, to that which is. Judgment shapes perception and appreciative compassion is perception without pre-conception. Empathy comes through an acceptance of that which is without pre-conditions; and empathy between individuals generates trust in a social system. Essentially, empathy is how we experience the others as ourselves so that we can make connections and we can see the world as part of our common framework. Therein, empathy becomes our experience of the world as a common framework.

Some structures inhibit the experience and expression of empathic connections between individuals. It is unhealthy to foster such structures, and it is healthy to understand why. In the Community, appreciation is spread amongst cooperators (or "constructors"); there are no unappreciated "losers". It is not only what "you" can do, it is also about what "you" can do with others.

### 9.1 Restoring a structure of fulfillment through compassion

Is it possible for the structure of a socio-economic

system to cause the expression of particular social pathologies and associated diseases? In other words, is it probable that the structure of early 21st century society's socio-economic system is a strongly correlated factor in the social pathologies and diseases of early 21st century society? What if some of our fundamental ideas about society and community and social pathology are just wrong? What if blaming the "criminals" means we're blaming the victims [of at least a structurally violent system]? As a species on a finite planet we can no longer afford the luxury of arrogance. We know that violence during childhood elevates your risk of disease, child abuse towards others, and drug abuse, and there is even reason to suggest that such experiences as a child directly lead to these later in life behaviors.

Once we identify what safe and practical changes we can make to fulfillment in the community, then we may ask ourselves, "How can we move the community (or, the behavior of individuals) in that direction so that it becomes more the default rather than the exception?" Just because you know what to do doesn't mean you are always going to do it. Sometimes we have to put cues around ourselves to make it easier (i.e., more efficient); and believe it or not, that can be studied scientifically. What is clear is that we can't keep blaming those who inflict violence or have violence inflicted upon them. Most people in society want to do the right thing, but they have to know what that is, and it has got to work for everyone's fulfillment.

If social violence is nothing more than a proxy for insufficiently structured fulfillment, then what good does it do to punish those with the proxy. We need each other's empathy and compassion, and above all else we need individuals who are willing to consider that maybe "you" didn't let the system down, maybe the system of which "I was a part" is letting you down. We ought not substitute contempt for compassion.

## 10 Regeneration and sustainable production

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*A.k.a., Restoration and sustainability.*

What is sustainable is not having unreasonable demands placed on a system or on one another. Natural systems have the ability to self-organize and heal themselves, and humankind does too if it participates with them and acts as they do (i.e., aligns with and applies natural principles toward the design of its fulfillment). We are a part of nature, and our human nature exists within a larger natural, living ecological system. Life and land are not commodities, but they are a whole system of life-giving and living processes. It is essential to understanding that we know scientifically that life-giving processes are stabilized within systems. Hence, sustainable (and stabilizing) design necessitates a movement towards the systematic whole. If a community relates its values to what nature tells anyone and everyone through the verifiable about the world (e.g., biomimicry), then individuals have the potential to align their relationships harmoniously with one another and with the greater whole to create true global abundance in human need fulfillment. At a material-level humans are [at least] biological systems, and a biological system that is neither sustainable nor regenerative will die and eventually become extinct. Something which isn't sustainable comes to an end. If we don't become sustainable then we aren't here any longer, at some point; and while we are here, our lives will be less enriched because of our unsustainable practices.

One of humanity's greatest responsibilities is to be good ancestors. If we are to be genuinely good ancestors, we must carefully nurture and protect the natural wealth of our global home. We must provide for current generations, but not at the cost of future generations. We must share our knowledge so that others can learn to care for themselves and prosper. And, we will express the values of generosity, openness, respect, and dignity.

*"Only after the last tree has been cut down, only after the last river has been poisoned, only after the last fish has been caught, only then will you find that money cannot be eaten."*  
- Cree Indian proverb

Sustainability requires thinking on a temporal scale. A sustainable society uses its resources to meet current needs while ensuring that adequate resources are available for future generations by intelligently coordinating and organizing ecology (natural patterns), economy (coordinated fulfillment), and equity (mutual fairness/access through the fulfillment of all human need). 'Ecology' is the pattern of relationships between living things and their environment. Economy is the transformation of resources into needed services and goods. Equity is mutually shared access to services and goods.

Whereas the highest aim of **sustainability** is to satisfy fundamental human needs today without compromising the possibility of future generations to satisfy theirs, the goal of **regenerability** is to develop and maintain [living] systems that restore, renew, and revitalize their own sources of energy and materials. Therein, human sustainability is a pattern of human behavior of which the ideal form is the regenerative fulfillment of human needs.

There is a truism: "How we look to the future defines how we live today." Sustainability implies a time issue. Sustaining is what makes life on earth possible. A sustainable structure (e.g., building) distinguishes itself by how it is built. Humanity must be able to dismantle the building without loosing more resources than were needed to build it in the first place.

The core principles of sustainability for humanity on planet earth are:

1. Every renewable resource must be used at or below the rate that I can regenerate itself. This is often called dynamic equilibrium.
  - A. This is a bio-physical condition for human sustainability.
2. Every non renewable resource must be used at or below the rate at which a renewable resource can be developed, or at the rate at which more of that resource can be mined (or otherwise, acquired).
  - A. This is a bio-physical condition for human sustainability.
3. The pollution stream must be emitted at or below the rate it can be absorbed or made harmless by the natural [ecological] systems.
  - A. This is a bio-physical condition for human sustainability.
4. Individual humans must feel that the distribution of resources is fair and equitable.
  - A. This is a social condition for human sustainability.

If there is some goal to remain flexible and to minimize the negative impact of changes, it is to be modular. Modular systems can be replaced. A module can be replaced with another duplicate module or with an updated module. Work in space has used this ability for years. The ISS space station is built entirely of modules.

Sustainability is an active condition of problem solving. Conservation alone does not produce sustainability. Problems with resources are not solved simply through conservation. A society can be destroyed by the cost of sustaining itself. Sustaining broken systems often requires more resources, and not less. To sustain is to maintain a desired state or condition. Therein sustainability emerges from peoples values -- people will work to sustain what they value. Sustainability is the ability to sustain that which is valued. What is sustainable

is what can physically and possibly persist.

Regeneration is the web-of-life itself upon which long-term survival depends. It is life support over time. And so, in the human and ecological context, that which is sustained (as a sustainable communion between humankind at a social scale and nature) does not come through endless employment, economic expansion and self-interested competitive advantage; what is sustained in the broad sense is the proper ongoing integration with this web-of-life, accounting for how the system supports or thwarts its function. Our ability to sustain and interlink with nature is a defining goal for our species. A proper pursuit of sustainability is within its proper ecological context, as the term has been largely co-opted, and hence, trivialized and misunderstood.

In another sense, "to sustain" is to preserve; yet, we as a community can do better then simply sustaining: we can give back, we can caretake, we can facilitate environmental and soil health and maximize human well-being. Together, regenerative solutions (i.e., sustainable regeneration, restoration services) allow for the co-evolution of the human species along with other thriving species on a single planet. Systems that are incapable of sustaining and regenerating life by themselves are by definition a system in decline.

Consider the following requirements for a sustainable society. First, everyone in the community has their basic and social needs met. Second, responsive adaptation is socio-economically acceptable. Third, the natural systems that support life on the planet and in the community are preserved. And fourth, technological systems are not divorced from ecological consideration (ecology > knowledge > technology). At the core of all principles of sustainability is a recognition of the largest order system. That system is a reference for all sustainable design. Essentially, sustainability involves the intelligent organization and usage (or "management") of the Earth's resources, via the application of a commonly effective and objective approach for the benefit of all individuals, species, and living-systems in a common environment. That which becomes our resources (or material economic inputs) are part of a living ecological system. Therein, an unsustainable ideology is one that inherently leads a person or group to unsustainable and protectionist practices, and to the commodification of nature.

Sustainable systems integrate the needs of society with the integrity of nature. A system that is no longer integrating needs is unsustainable; it is a system out of alignment with nature. An unsustainable system will either transform or collapse, and this includes social and economic systems. It is possible to meet the challenges of changing conditions and of looming transformation by developing new and more environmentally relevant worldviews, organizations, processes and technologies. The weakening of an existing system is not only a time of great danger, but a time of great opportunity.

From a strictly economic perspective, the idea of "zero marginal cost" is the most sustainable state because

it allows for the design and production of goods and services with the minimal amount of energy, labor, time and capital, while optimizing [through emergent technical efficiency] the output.

Being sustainable is not enough; to sustain is to just maintain a flat line. It would be optimal if something was given back to regenerate the life process -- to caretake and to improve the health and functioning of the environment, and of ourselves. The aim of caretaking (in this context) is to make the world a better place for human life and all life, to be "good" ecological stewards.

Regenerative design goes beyond sustainability. Instead of trying not to damage an environment it seeks to improve the healthy cycles of an environment through caretaking (a.k.a. care-taking) such that the needs of a living system are restored, renewed, and revitalized with greater efficiency and effectiveness. Nature is the only known standard of regenerative design; a common and highly generalized example of which is the water cycle - first it rains, the water collects into rivers, streams, the ocean, then the water evaporates back into clouds before raining back down. This completes one round of an endless and highly complex closed-loop cycle. Species don't survive in the long run by exploiting their environment for profitable income, commodification, or for any other "wealth extracting" reason; instead, they survive in the long run by care-taking and improving their habitat.

Commodities are bartered, sold, traded, and aggrandized [in the marketplace] where there is little to no thought or respect given to ecological impact and long-term sustainability. And often, commercial entities present a marketed pre-tense of thoughtful ecological action and social respect, but in reality there is not transparent action, there is not ecological respect, and there is not social consideration. Instead, there is what is known as "greenwashing", and businesses have become extremely, scientifically sophisticated in their ability to create a "green" perception of their identity in the minds who come into contact with their propaganda, some of which they may have even digested themselves.

When ecological resources become commodified by profit-engineering entities in the marketplace, then truthful interrelationships between the individual and their ecological life-ground become socio-economically severed (or at least sufficiently distorted to prevent likely recognition). Often, the market pursues profit irrespective of the damage it does to ecological and life-ground systems - the market encodes otherwise. When economic services are provided by profit making entities (vs. a socially participative community), then the products of their engineering, their economic goods and services, will align with their ecologically disconnected orientation. Fundamentally, businesses are profit engineering organizations; they turn naturally common resources into commodities and then into exchangeable capital. Is "your" economic system engineering systems for profit or for systematic

solutions to human needs. And, human needs require regenerative fulfillment by natural services if they are to facilitate the expression of a higher potential experience here in our world, which is something business cannot provide.

The ultimate objective of maintaining regenerability as an organizing condition is to foster a well-functioning alignment between individuals and the dynamic capacity of the environment's life-supporting ecosystems. This alignment represents a homeodynamic balance (or 'health') in the interaction of a population with its environment. It is this specific balance which is also the focus of a meaningful definition of 'sustainability' - thinking today as if tomorrow matters. There is a term in the Scandinavian dialect that carries the idea that it is preferential (or moral) to behave in a manner wherein one contributes enough and takes away enough for the community to continue; in brief, the word translates to "the right amount is best" -- the word is 'Lagom'.

*INSIGHT: Nature develops regenerative systems, it does not develop "sustainable" systems. When humanity builds, it would be wise to build in line with nature so that humanity builds regenerative systems, like nature. This idea of engineering system in line with nature is known by many names including 'biomimicry' and 'synergistics'. It is easy to be wasteful in times of perceived abundance without an appreciation for the source of abundance. In nature, when left alone, order arises. In truth, 'sustainability' is the only true form of "social security".*

## 10.1 Permacultural abundance

*INSIGHT: The idea of permaculture maintains the understanding that ecosystems, and in particular, their design, have different potentials [for producing health and abundance].*

The first thing that comes to mind in an environmental assessment on the regeneration of a local landscape is the quality of the soil. **Permaculture** is a vision of regenerative abundance where communities provide for the materials they need to survive and thrive using sophisticated ecological understandings blended with [engineered] design to create productive holistic animal-plant landscapes. Permaculture is a means of attaining essential human needs through methods that work with nature rather than against it (and it has been practiced for thousands of years across the globe). The idea of permaculture is to design a natural service environment to meet human needs while retaining, restoring, and improving the health of the ecosystem through ecological principles and relationships. Like every other element of this social system design, the underlying philosophy of permaculture is that we are a part of the natural environment and not separate from it, and that we must work with nature and its processes, rather than against it.

There is a fundamental relationship between

individual freedom, the fulfillment of human needs, and the health of the ecosystem (or the 'lifeground'). Joel Salatin aptly states, "A community that can feed itself is free. A community that cannot feed itself is not." A community that isn't able to nourish itself lives in dependency of whomever is providing for it, and therefore, it is not only not free, but not sustainable. Conversely, a community that is able to provide for itself through naturally regenerative services does not exclude itself from other (or external) sources of nourishment, and yet it is free, sustainable, and independent. Through this type of interrelationship there exists the potential for abundance.

The three very basic permaculture principles are:

1. **Let nature do it\***, and optimize within nature.
2. **Integrate** compatible functions.
3. **Plan** spaces and zones, and maintain awareness of the emerging context.
4. **Soil test regularly**, because that is the best indicator of restoration of the ecology.

*\* The idea of "waste" as something which is to be thrown away and has no use in the cycle of life does not exist in the natural world. Hence, the permaculture principle, "produce no waste."*

Also, permaculture maintains the notion of leaving an area better than it was found, of 'caretaking' the Earth. And, some social organizations and conceptual modes-of-thought cannot integrate the very idea of permaculture for they do not orient their society, or even the individual, in this intentional direction.

Abundance (as an orientation) enables the intentional fulfillment of needs in living ecological systems. True advances at both an economic and social levels of a society promote the state of appreciative-abundance, which is represented by the condition that everyone in a community feels that they "have enough", and are enabled to live a self-directed and meaning-filled life. Abundance breeds a sharing-mindset through the satisfaction of primal needs and an environmental allowance for (or facilitation of) the individual opening to the realization that they are part of a greater whole. Essentially, abundance is an issue of access[ibility]. And, in an information system, it is an abundance of access to information about the system (and transparency of the system) that promotes sustainable resource perception, access, and usage.

The impulse toward abundance as a state of *fertility, prosperity, and plentifulness* is a perfectly natural and intelligent desire, for it provides opportunities to expand into life's higher potentials. Humans, like many other mammals, naturally collect and store valued items, conserving against the future. If the question "what shall we eat, drink, and wear?" compel any state of community to react immediately, then it has no time nor inspiration for advance. Yet, when a community designs and applies

systems that maintain the condition of abundance [and reserve/redundancy] through sustainable and regenerative designs, then the necessity for reaction diminishes and individuals have the time, energy, and space to contemplate and to progress.

Most environmental problems are fundamentally moral problems. A society with environmental "issues" is a society with moral issues; it is a society out of orientational alignment with itself and its ecology. We have the ability and intellect to design a fulfilling environment and lead enriching lives. Anything less is a measure of illusions grip on us. Then the question becomes, how much illusion can the world suffer before nature snaps in half?

**INSIGHT:** *Abundance is only useful when developed out of wisdom, for as Heraclitus once stated, "Abundance of knowledge does not teach men to be wise".*

### 10.1.1 Biological diversity

The most biologically diverse ecosystems are also the most stable. If a blight were to attack and decimate a single species of tree in a diverse ecosystem, it removes a minuscule fraction of the overall biomass, food and nesting source of the total. However, as we move toward the poles on this planet, we tend to have large covers of few species, and when we lose a single species we have a disruption of the whole ecosystem.

**MAXIM:** *A community isn't sovereign until it regenerates its own seed.*

### 10.2 Technological automation

*"Technology is a resource liberating force (or mechanism); it can make the once scarce, now abundant." [How might technology facilitate abundance?] - Peter Diamandis*

Automation can provide a service to the users as well as to the environment. Mechanization may "produce" a portion of our food while also caretaking the ecological environment. And, this may be done in place of some portion of the most banal, repetitive and undesirable technical human labor. Humanity can achieve appropriate abundance by using machines to do a part of the work. Therein, automation allows greater service with greater accuracy and optimal resource usage.

The purpose of technology, as a labor saving device, is to free labor (as undesired repetitive effort) for the meaningful. Or, said another way, technology exists to free labor from repetitive effort for meaningful fulfillment. Essentially, through automation humans labor less and have the opportunity to participate more. As a community, we seek a human-centered approach toward our sustainability - increasing sustainability together with abundance in the fulfillment of our needs. We value *natural processes* and *automated systems* in

*effectively* and *efficiently* maintaining states of material abundance. Through these systems and processes the Community reduces the fear of insufficiency, while providing for the needs of individuals. In particular, the application of automation to undesired and banal labor frees the individual from mundane and arbitrary occupational roles, which are often intrinsically meaningless to the individual (though may have acquired extrinsic meaning to them over time).

Some essential questions we must ask ourselves when discussing technological abundance include:

1. How do we frame these extraordinary developments in technology in such a way that they enhance and engage the flourishing of the human race? We create tools to enable us, yet, what are we enabling ourselves to do even more of?
2. Do we want a future where technology frees us from "work" (in its pejorative) or do we want a future where we are in fear of losing our "work"?
3. Are we designing tools to be used in the interest of the human community? Is that our reference-framework? What do we understand tools to be used for?
4. Why don't we use robots and automation technologies now to do the most unpleasant tasks that society requires? What tasks does a community actually require, and what tasks are required to keep an aberrant and unfulfilling system in operation?
5. Does "work" have to be a pejorative?

We automate so that we have more time to develop our higher potentials as human beings. We automate because we value efficiency and we recognize that there is meaning in our lives. We design technologies to make our lives better off. We can do more fulfilling thinking and things when we have the time and survival-certainty to do so. We desire less doing and more thinking [about optimized cooperation] -- a more automated autonomous (AA) world. Essentially, automation is the setup of more efficient pathways [in the fulfillment of our purpose].

The same technologies that displace labor in modern societies could be applied to free individuals from a state of war-like competition and meager survival [over currencies, resources, and ultimately, life]. Automation can be applied to reduce repetitive work load while increasing the available time for leisure, learning, play, and growth. Therein, lives become less like drudgery and more "liveable". Repetitive and mundane jobs are also the easiest to automate. The technology available at this very moment could be applied to replace nearly all of the banal and repetitive economic activity humans do at the present.

In early 21st century society people get used to

technology in dismissive ways, and that is what makes the incredulity of the future outlast the amazing leaps and bounds that would have proven that incredulity wrong, over and over again. Those who do not understand the fundamentals of the technologies they use tend to ignore the consequences, implications, and benefits of "their" technologies; they don't recognize the fact that more and more "impossible" things have been made possible through knowledge acquisition and technological application. They don't realize technology as representing a movement toward an increasingly thought responsive environment.

Herein, automation is seen as favourable to humans; it is not seen with fear because of its potential to replace commercial labor "jobs". Rational humans have a desire to replace banal and unfulfilling work with automation, for they recognize the value of efficiency in the fulfillment of their needs and its relationship to their freedom.

Also, technical efficiency in the form of automation enables a degree of safety in what might otherwise be a risky fulfillment processes. The use of robots in the process of mining Earth minerals might be one example of said automation, or safety airbags in automobiles. It would be wise to apply technology to the banal and repetitive technical efforts that compose an economic system; and hence, prevent unnecessary "human error" (i.e., "tragedy") from ever occurring in the first place. A useful economy would apply technological innovations, particularly automation, to technological service systems for the benefit of everyone. Therein, "jobs" that people do not want to do, or that involve physical risk, can simply be automated.

If individuals desire to "self-complete" economic tasks, then technology will only be applied to those tasks as a redundancy measure. In community, participation in an economic activity (or "job") involves intentional, participating volunteers; individuals who find fulfillment in the effort applied toward the activity and/or its result. The application of participative automation is essentially the freedom of choosing work that would be quite unsatisfying to the person if they were forced to complete it. Effectively, technological automation allows for a reduction in the necessity of human labor.

There is "work" that is fulfilling and accomplishes the goals of individual conscious beings, and then there is "work for the sake of work" [as a form of self-sacrifice and the re-cycling of competition]. 'Work' takes on a whole new meaning when someone is doing something that is primarily intrinsically motivated wherein the reward comes from the enjoyment of the experience itself and the potential for self-growth. In community, we make our work our play and our play our work. The notion of "working for a living" is inhumane considering all the technology that has been given to us by prior human generations. Technology fundamentally changes the labor market (i.e., technological unemployment is a reality).

Community seeks to automate laborious and banal tasks [where such solutions are possible and desired]

that are a drain on human potential. What use is technology if it does not make us, as individuals, more free? The human brain automates mental processes to free someone's limited conscious attention capacity for the meaningful. Why should we not do the same with our material service systems? The intelligent application of technical efficiency in the form of automation has the potential to orient society toward even greater social stability. From this value-view, it is negligent for a society to waste individuals' tremendous creative potential on repetitive, monotonous tasks that drain their life force and could be automated. Mechanization (or technical automation + human effort) is more productive, efficient, and sustainable than human labor by itself. And, full automation is even more productive. Machines do not need vacations, breaks, insurance, pensions, and they can work 24 hours a day, every day, to provide for the needs of the Community. In community, automation and mechanization are means of abundance; whereas in the market they are means of saving money and increasing profits. The relationship and result simply depends on the value orientation of a society. Some societies automate for profit, and others for fulfillment.

The intelligent implementation of automation technologies requires the designing users to ask themselves with each design step, "Am I doing this in a way that is going to free me from having to do it again in the future?" And that means building processes and developing systems and workflows so that after "I" am done doing it the first time it is "automated", or simple to repeat in the future [for myself and for others]. Hence the clarification: working "on" the system rather than "in" the system.

**INSIGHT:** *If human labor is necessary and it is not performed, then the system(s) for which human labor is needed will degrade/destroy. If a wage is necessary and there are no jobs from which a sufficient wage can be acquired, then the system(s) for which a wage is needed will degrade/destroy.*

### 10.3 Technology and access to human-need fulfillment free of cost

Never forget that technology is embedded within society. The question is, do "you" have a society that facilitates and allows individuals to do more with less people (to automate tasks), or do you have a society where people are dependent on jobs and buy access to [human need] fulfillment at a price. Fundamentally, there will exist a different societal result (i.e., a different society) when productivity gains are shared. Life is not only about what is technically possible, it is also about social relationships, which strictly influence what is technically possible.

In the market, business do not want to create an abundance of access. In the market, abundance means lower profit. If business were to create an abundance of access to any product, the typically results is a "flood of

the market" with product, and a consequential lowering of the price of the product. Farmers do not want to create an abundance of food or they would be out of business (or make less profit than they already do). Energy companies do not want to create an abundance of energy or they would be out of business (or make less profit than they already do). Technology companies do not want to create durable and modular products or they would have less business. Medical companies do not want a healthy population or they would have less business. It is certainly in the interests of profit-motive power establishments that abundance be avoided at all costs.

Without a value system aligned to a higher potential machines may provide abundance, but will ultimately leave everyone in want (or "craving"). More than machinery, we need humanity. More than cleverness, we need kindness and gentleness. Without these qualities life will be violent and we will repeat mistakes without integration. The very nature of inventions like the Internet and the telephone cries out for the very "goodness" in humankind, cries out for the unity of everyone. We have the knowledge to create machines as well as universal abundance and a fulfilling organization.

We have to be careful of what we innovate and to that which we apply our cleverness least we conceive and innovate things we cannot spiritually, morally, ethically or physically metabolize. No one is a cog in someone else's machine. No one is a "human resource"; in reality, you are never obsolete. Humans are not capital to be managed, and natural services are not resources to be capitalized upon and commodified, if human fulfillment is the direction desired for society. When sorting people and other life into resources, some societies pay no attention to the thing they are sorting them from.

A system of political governance combined with monetary market economics will characteristically exist to manage human capital, along with commodifying everything available, generating disastrous incentives for bad behavior in the process. Such a system will not generate states of fulfillment, and within such systems technology is likely to increasingly be used by commercial entities to thwart human fulfillment for the very continuation of those who benefit off "the back of the system". And therein, 'human resource management' is always accompanied by the necessity for 'perception management' [due to the conditions imposed on the "self" by the "manager"] -- In other words, human management involves perception management, which is basically expressed as propaganda, public/personal relations (PR), and advertising & marketing.

Marketing and advertising exist primarily to influence for the purpose of profit. What is the use of "marketing" if not the creation of demand and need for something an entity in the market is going to sell. In part, marketing is designed (or engineered) to make people adopt conducive attitudes, associations, and feelings that facilitate (i.e., make easier) the purchase of a product (or experience) in the market. Many industries, the beauty

industry in particular, actually seek to make people feel unhappy or inadequate so that they will buy the [beauty] products. In the market, demand [in part] refers to the consumers' perspective. Essentially, advertising is supposed to drive demand (sales, market share) for the advertiser who has a product for sale. Advertising is inducement to demand; producers have produced some commodity to sell for profit in a market, and now, they need to propagandise (a.k.a., advertise market) in order to get people to buy, and better yet, demand, the product. A business must create or otherwise "drive" demand and consumer perception (of themselves and of society), because it is the societal population that is buying their product. In the market, a business might have a great product for real socio-technical efficiency or safety, but if there is no demand, the business dies (and so too can the productive idea). Therein, fear, uncertainty, and doubt are the sales tools of the "elite" (or "leaders") in the market.

"Torches of Freedom" was a phrase used to encourage women's smoking by exploiting women's aspirations for a better life during the early twentieth century first-wave feminism in the United States. Cigarettes were described as symbols of emancipation and equality with men. The "Torches of Freedom" slogan is an iconic and larger scale example of an industry that manufactured demand. The orchestrated "event" was a marketing campaign designed to re-frame people's reality such that a group of people (women) would purchase a product (cigarettes) they previously weren't purchasing. Consent can be manufactured and associations can be engineered. Who creates the pictures and concepts in our head, were they organically inquired, discovered, and integrated, or have they come through slogans and drip fed by State and industrial education (and media) systems. If you know someone is going to respond to a stimulus, then you can direct them, basically. And in particular, if there is a "culture industry" or there are "culture leaders" in your society then you may want re-evaluate in a more discerned manner the socially accepted (or acceptable) contents of your mind. Advertising & marketing is social engineering in its pejorative, and it is part of the "culture [creation] industry". It can, all too often, become a preoccupation with things that mean nothing in terms of human fulfillment and sustainability, and which only seek to cloud and dull the mind [of the engineered subject] leading consciousness further away from truth, discernment and intelligence.

Advertising & marketing is a form of social engineering. In its pejorative, social engineering is the sophisticated manipulation of the natural human ability to trust for profit or competitive advantage. For instance, marketing by the oil and gas industry in recent years has created the false impression in the eyes of the public that said industry is in fact in the sustainability industry. Fundamentally, people can be socially engineered into believing things and doing things (such as buying things) they would otherwise not believe or do/buy. Market interest is significantly subjective. Market desires can be

contrived. And, market demand can be manipulated.

In *The Nag Factor*, Lucy Hughes states:

*"You can manipulate consumers into wanting, and therefore buying, your products. It's a game."*

"Torches of freedom" was a public relations scheme. Other terms for public relations (or "PR") include: disinformation, perception management, social engineering, propaganda, and advertising & marketing. It must also be admitted that the term 'public relations' is sort of "Orwellian" in its phrasing: it sounds quite nice, it has the word "relations" in it, which causes us to think of relations (possibly 'family relations') and it has the word "public" in it, indicating lots of people and a sense of togetherness. However, what is really being spoken of when the term 'public relations' is used is 'propaganda', which is the name of the book given to Edward Bernays' instructional work introducing 'public relations' to the world. In black and white Bernays says that controlling the public is doable and desirable, which he describes in the book "Propaganda". Of note, Ivy Lee and Edward Bernays also invented the concept of the 'press release' - of which all mainstream media news services use to shape the content of their "news" (Read: amusement). Philosophically speaking, amusements involve the outsourcing of ones own thinking to others. The nominal definition of amusement is: a [negate] + muse [to think & meditate] + ment [suffix]; "the absence of thought".

In *Propaganda*, Edward L. Bernays states:

*"The conscious and intelligent manipulation of the organized habits and opinions of the masses is an important element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government which is the true ruling power of our country... . We are governed, our minds are molded, our tastes formed, our ideas suggested, largely by men we have never heard of. This is a logical result of the way in which our democratic society is organized. Vast numbers of human beings must cooperate in this manner if they are to live together as a smoothly functioning society. ... In almost every act of our daily lives, whether in the sphere of politics or business, in our social conduct or our ethical thinking, we are dominated by the relatively small number of persons ... who understand the mental processes and social patterns of the masses. It is they who pull the wires which control the public mind."*

Propaganda was used to turn a needs-based global culture to a wants-based culture. People were convinced to shift their focus from that which they needed to live, to "consumers" who are obsessed with fulfilling their every want and naive to their real needs. And, this was done by design, primarily through the work of Edward Bernays. He created the field of "public relations",

which was previously known as "propaganda". The term "propaganda" took on a highly negative connotation after the Nazis used it in its extreme to manipulate the opinions of the masses in an overt way. It effectively got cleaned up and renamed by Bernays.

Bernays started off working with different businesses and then began working with governments as well. "The Century of Self" is a three part BBC documentary on this very subject. The documentary reveals that so much of what we take to be normal everyday activities and purchases (normal and natural[ly developed and evolved]) were actually created by design. One might come to realize by watching the documentary that a lot of things one thought were unique to oneself or one's culture, that instead, many of these things are actually a product of market, media, and government manipulation for their own agendas. Herein, one might ask oneself, "How much of a product am I of market, media, and government manipulation?" Many of the choices we thought we were making independently were actually made for us by others.

Sigmund Freud said that people have unconscious motives and drives. Then, Bernays (the nephew of Freud) said people have all these apparent unconscious motives and drives, and so, the lesson to learn from that is that people are fundamentally irrational and incapable of making sensible decisions by themselves. Hence, they need a special class of professional opinion managers, like Edward Bernays, to tell everyone what to think; otherwise all these crazy people will be thinking for themselves and you will have chaos.

The two primary marketable purposes of "public relations" are:

1. To sell a product.
2. To divert attention away from something and toward something else. Therein, industry has an incentive to act as a gatekeeper to the access of information.

In a market, public relations becomes the buying of positive influence. Wherein, propaganda can be bought and sold on the market like any other good. In a competitive market individuals and market entities look at information and technology with [at least] dollar signs; wherein, information and technological ownership are used to "turn a profit". Establishment structures will naturally emerge under such environmental conditions to control or otherwise engineer technological scarcity to promote their own profit.

The use of technology does not necessarily "build the market" or "develop the State"; yet, it will do so if it is socially oriented and encoded to do so. Technology can dominate as well as care-take. It can facilitate our fulfillment and care-take our natural habitat; or, it can misalign with nature and dis-orient us away from our fulfillment. The application of technology without a recognition of common human need and environmental

consideration (+ ecological care-taking) is likely to generate, or at least facilitate the developed persistence of, dominance and subjugation structures. Without our technical reality (and the totality of what that means) in our frame-of-reference, then we might just be duplicating more of the status quo, more of what already is [not really wanted].

Humans have an odd, though understandable (due to present conditions) habit of referring to things that other humans make as "artificial". When other animals make something it is just called natural, but when humans make something other humans have a tendency to call it "man-made"; a term that has a distinct association with that which is also "artificial". Can humans not make natural technologies also? Can we not fulfill our needs through the application of technology in natural ways? We do not use the same language when referring to other organisms that engineer technology from within their own conscious decision/need space. We do not apply the same thinking to bees when they engineer the technology of their bee hives. We do not call things made by bees, bee-made and maintain the presumption that what they have made is synthetic, artificial, or "not real". We do not call technological structures made by birds (i.e., nests) artificial or dams made by beavers synthetic.

We are as part of nature. The belief that all technology and all technological interfacing with the natural environment is harmful, unnatural, and/or inflicts unnecessary suffering on the environment is often held by those who prescribe to the "anarcho-primitivists" train of thought. Historically, such people have been known as "Luddites". It is important to recognize that our technological knowledge and capabilities can facilitate our fulfillment as well as facilitate our care-taking with (or of) our natural ecological environment. If communities began to design distributed service technologies that were effectively fulfilling their needs in a manner aligned with natural technical principles and an environmental care-taking philosophy, then why should these too not be called natural.

It is important to recognize that the industrial landscape sets the economy and the environment in opposition to one another. It would be wise to have a decisioning system that doesn't set the economy against the environment. But, as it stands in early 21st century society people are destroying the environment to make money, and to survive.

*"We are absolutely right in recognizing this nonsense of earning a living. We keep inventing jobs because of this false idea that everybody has to be employed at some kind of drudgery because, according to Malthusian-Darwinian theory, he must justify his right to exist. So we have inspectors of inspectors and people making instruments for inspectors to inspect inspectors.*

*- Buckminster Fuller*

## 10.4 Sustainability and sustainable systems

*The following section is highly adapted from Capra (2012).*

The concept of sustainability has often been distorted, co-opted, and even trivialized through its use without the proper ecological context. That which is sustainable in a "sustainable community" is not economic growth, but the entire web of life on which our long term survival and well-being depends. In other words, a sustainable community is designed in such a way that its ways of life, organizations and structures, and so on do not interfere with nature's inherent ability to sustain life. And, the first step in this endeavour, naturally, needs to be the inquiry into an understanding of how nature sustains life. And, it turns out that this involves a new ecological understanding of life, and a new kind of thinking - thinking in terms of relationships, patterns, and context. And indeed, such a new understanding of life has emerged over the last century. To sum it up, at the forefront of contemporary science the universe is no longer seen as a machine consisting of several elementary building blocks; instead, science has demonstrated that the material world is an inseparable network of relationships, patterns of relationships. Humankind has discovered that the planet as a whole is a living self-regulating, living system.

The view of the human body as a machine held by Descartes, and other scientists and philosophers centuries after him, and of the mind as a separate entity, is now being replaced by one that sees not only the brain, but also the immune system, all tissues, all cells and consciousness in the body as a living cognitive system.

Evolution is no longer seen as a competitive struggle for existence, but rather a cooperative dance in which creativity and emergence are the driving forces. And with the new emphasis on complexity, networks and patterns of organization, a whole new science of qualities is now slowly emerging. One of the most important recognitions in this new understanding of life is the recognition that networks are the basic pattern of organization of all living systems.

The network is a pattern that is common to all life. Ecosystems can be understood in terms of food networks, that is networks of organisms. Wherever we see life we see networks. These living networks are called "functional networks", that is, connections between various life processes that form a network pattern. In a cell, for example, these processes are chemical reactions among the cells molecules; in a food web the processes involve feeding on and eating one another, and in both cases the network itself is a non-material pattern interconnecting these processes. A closer examination of these living networks over 30 years has shown that their key characteristic is that they are self-generating, in a cell all the biological structures,

the proteins, the enzymes, the membranes and so on, the DNA, are continually produced, repaired, and regenerated by the entire cellular network. Similarly at the level of the multi-cellular organism the bodily cells are continually regenerated and recycled by the body's metabolic network, so living networks continually create or recreate themselves by transforming and replacing their components. This lies at the very core of the new understanding of life. And since a network is a pattern of relationships it is evident that understanding life in terms of networks requires that we learn how to think in terms of relationships, in terms of patterns, in terms of context; and this thinking in science is known as systems thinking or systemic / systematic thinking.

Systems thinking emerged in Europe in the 1920s and 1930s from a series of interdisciplinary dialogues among biologists, psychologists, and ecologists (ecology being a new science in the 1920). From the very beginning, systems thinking has been an interdisciplinary effort. In all these fields, scientists realized that an organism, an ecosystem, and also a social system (social networks) are all living systems. A living system is an integrated whole whose properties cannot be reduced to those of smaller parts. The systemic properties are properties of the whole, which none of the parts have. So, systems thinking involves the shift of perspective from the parts to the whole. For example, if you ask yourself, "What is stress? Or, what is health?" These are questions about systemic properties; the stress of an organism is not the sum of the stresses of the molecules. The mass of the organism is the sum of the masses, but the stress of an organism is a systemic property. In a community, fulfillment is a systemic property.

To promote this shift of emphasis from the parts to the whole, the early systems thinkers coined the phrase, "The whole is more than the sum of its parts", which became a sort of slogan for the systems [thinking] movement.

In what sense exactly is the whole more than the sum of the parts? The answer is: relationships. All the essential properties of a living system depend on the relationships of the systems components with each other and the relationships of the system as a whole to surrounding environmental systems. Systems thinking means thinking in terms of relationships. Understanding life requires a shift of perspective; not only from the parts to the whole, but also from objects to relationships. And, this is type of thinking is a serious challenge for most, particularly for those who were educated in science, for those who were taught science we taught that in order to be scientific you have to measure something, you have to weigh and quantify it. And, that even spilled over into the social sciences, for instance, there is a well-known saying in management, "What can be quantified, what can be measured, can be managed".

So, what do you do with perceptible relationships, how do you manage relationships. You can't measure them, but you can map them; you can visualize a map of how things are interconnected. So, there is another shift

that goes with the shift from objects to relationships, it is a shift from measuring to mapping. That is to say, it is a shift from quantities to qualities. The early systems thinkers in the 1920s and 30s identified these basic concepts to describe living systems as integrated wholes, concepts such as: organization; pattern; complexity; the idea of emergent properties; the notion of living systems as self-organizing; the concept of the ecosystem; and the associated notions of ecological cycles, food webs, and so on. These are the basic concepts. By the end of the 1930s, most of these key concepts had been identified and defined, then, the 1940s saw the formulation of actual systems theories. This means that the system concepts were integrated into a coherent conceptual framework, into theoretical frameworks describing the principles of organization of living systems.

When you looking at the history of systems thinking in standard textbooks, you find that the Austrian biologist Ludwig Von Bertalanffy is commonly credited with the formulation of the first such conceptual framework, which he called General Systems Theory. Most people today when systems thinking is mentioned will think of general systems theory by Bertalanffy. However, 20 to 30 years before Bertalanffy , before he published his first papers, Alexander Bogdanov, a Russian medical researcher, philosopher and economist, developed a systems theory of equal sophistication and scope, which unfortunately is still largely unknown outside of Russia. Bogdanov called his theory 'tektology' (or techtology) from the Greek word d "techton" meaning "builder". It stems from the same root as "architecture", meaning the "master builder". Essentially, tektology can be translated as, "the science of structures". Bogdanov's main goal was to clarify and generalize the principles of organization of all living and non-living structures. Techtology was the first attempt in the history of science to arrive at a systematic formulation of the principles of organization operating in living and non-living systems. It anticipated the conceptual framework of Ludwig Von Bertalanffy's General Systems Theory, and interesting, it also included several important ideas that were formulated four decades later in a different language as the key principles of 'cybernetics' by Norbert Wiener.

The stability and development of all systems can be understood according to Bogdanov in terms of two basic organizational mechanisms, formation and regulation. The dynamics of formation consists in the joining of systems (or complexes) through various kinds of linkages, which Bogdanov investigated in great detail. He emphasized in particular that a *tension* and *reconciliation* between "crisis" and "transformation" is central to the formation of complex systems. Bogdanov showed how crises manifest as a breakdown of the existing systemic balance and at the same time represents a transition to a new state of balance. He also defined categories of crises, and with that he anticipated the concept of catastrophe, which bifurcated and became a key concept of complexity theory. Bogdanov techtology anticipated not only general systems theory in most detail, but also

cybernetics and key aspects of complexity theory. The view of living systems as integrated wholes led some scientists of the late 19th and early 20th centuries to extend their search for wholeness to the entire planet, and to see the Earth as an integrated whole, a living being. Living systems are self-organizing networks whose components are all interconnected and interdependent was expressed repeatedly by the early systems thinkers.

Complex systems are non-linear systems. Fractal geometry is a part of non-linear dynamics, of complexity theory. Ilya Prigogine in Brussels was one of the first to apply these theories to living organisms. He found that living organisms were able to maintain their life processes under conditions of non-equilibrium - thermodynamic and chemical non-equilibrium. In another words, in a living organism there are always processes happening. Energy and matter comes from the outside, is absorbed, there are structural changes, there is development, evolution, there are many chemical processes. There never is a static chemical equilibrium. Prigogine became fascinated with these systems far from equilibrium. Non-linear thermodynamics is often called emergence. It is one of the hallmarks of life. Creativity, the generation of new forms is a key property of all living systems. All dissipative structures have the potential to evolve. And, not all dissipative structures are alive. Yet, evolution potentially occurs in all dissipative structures.

Sustainable community must be designed in such a way that its ways of life do not interfere with natures ability to sustain life. To do so, we must first understand how nature sustains life. Sustained life is a property of ecosystems and sustained fulfillment is a property of social systems, rather than individual organisms or species. The Earths ecosystems have evolved certain principles of organization to sustain the webs-of-life. Knowledge of these principles of organization, or principles of ecology, has become known as ecological literacy. To understand the basic principles of ecology and to live accordingly is to act with ecological wisdom. Matter cycles continuously through the web of life. The energy driving the ecological cycles flows from the sun. Diversity ensures resilience. Life, from its beginning more than three million years ago, took over the planet by networking, by cooperation and the formation of [integrated] partnerships. We become ecologically literate once we understand the processes and patterns of organization that enable ecosystems to sustain life, we also understand the many ways in which our human civilization, especially since the industrial revolution, has ignored these ecological patterns and processes, and has interfered with them. And we will realize that these interferences are the fundamental causes of many of our current world problems. Thinking systemically, we recognize that the major problems of our time are systemic problems, which means that they are all interconnected and interdependent; and to solve these problems, therefore, we need systemic solutions.

As a community we can turn around the interconnectedness of the world's problems to our

advantage so that one action can solve several problems at the same time. We have the knowledge and the technology to build a sustainable future, what we need is a social value re-orientation and will-power with conscience (not political leadership).

**NOTE:** Humans are here because of what nature provides them. Humanity ought to seek an understanding of nature and to live within its regenerative bounds. Resources and their usage when handled improperly by a civilization can culminate in some large problems despite technological advancement.

## 11 Openness and sharing

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*"Flows of energy through open systems tend to drive them to states of higher organization. Open systems are any bounded systems that can exchange energy with their surroundings. We can call this the principle of driven self-organization. If the principle of sufficient reason is the paramount explanatory principle in nature, and the identity of the indiscernables her prince, the principle of driven self-organization is the good angel who does the detailed work in myriads of stars and galaxies to ensure a diverse, complex universe."*

- Lee Smolin, "Time Reborn"

Openness and sharing lead to new forms of organization and are valued for their characteristic ability to maintain environments that improve the quality of our coordination, the accuracy by which we arrive at decisions and solve problems, and the effectiveness of our designs in facilitating fulfillment. The concepts of openness and sharing play an essential role in a *functionally volitional* and *operatively participatory* environment. Herein, they facilitate the adoption of systems and approaches that focus on solutions and are in alignment with an open and shared focus, a common purpose [and pool of common heritage resources]. They are concepts that lead to the idea of 'inclusive-by-design', and the by-product of this form of design is organisational and social cohesion. Openness and sharing are enabling such that their existence leads to the potential existence of more complexly coherent systems of organization.

Systems must necessarily be open in order for the highest level of efficiency, freedom, and justice to exist. If a system is not open, then it is "secretive", and as discussed earlier in this specification, secrecy will generate a structure antagonistic to freedom, to efficiency, and to justice. Openness and sharing [through feedback] are a basic requirement for the conditional existence of efficiency. When they are applied in an organized manner they reduce duplication and increase cohesion. Further, openness is an instrumental condition necessary for maintaining justice. Openness requires justice to prevent self-serving agendas and secret bias, and it provides for equitable and effective fulfillment; justice requires openness to avoid outdated solutions or ideological blinders, to avoid the formation of hierarchy in place of shared access.

A system's openness is characterized by its **interoperability** and source [code] **transparency**. These characteristics are necessary of any system that seeks to maintain fulfillment-oriented value conditions, such as that of equality in access. The lack of these attributes will limit information exchange and make it difficult to measure the effectiveness and performance of all other conditions both within the system and in the systems interrelationship with an environment, which may be useful by an authority for social control, but is not useful for a community. The exclusion

of interoperability and transparency will always be perceived negatively by the users of a system as it represent a restraint on the usage of and access to a system (qualified by perception management, of course). Basically, their exclusion represent a reduction in the ability of the users to direct the future of the system that they use, which is likely to create a social power disparity. Their exclusion also represent a multi-issue danger to the users of such a system. To remove transparency and interoperability from users of a system would mean to replace the users full participation in the system with something else (possibly profit or surveillance or manipulation, or all three). At the social level, without the full application of interoperability and transparency, then competition (vs. interoperability) in conjunction with ownership/profit/deception (vs. transparency) will be rendered into the social and economic systems of a society, and there will no longer exist community. In concern to engineering, transparency reduces the potential for subjective projection (of bias) into a socio-technical design.

**QUESTIONS:** *Why would a society not want information about a disease shared both transparently and globally? Why would a not want information about societal and habitat production (economics systems) to be shared both transparently and globally? Who has the freedom to restrict the freedom of others? Who wants the freedom to restrict the freedom of others? Who would act upon the freedom to restrict the freedom of others?*

In communication, transparency is defined as the receiving of information that doesn't transverse a censor or is knowingly communicated falsely (e.g., lies and other deceptions). Transparency is also an organizational state - it occurs due to the way in which the system is set up and designed, or more accurately, cooperated with. Transparency dynamics require intentional design and cooperation by intelligent social beings. If the necessity for intentional design goes unrecognized and cooperation is not an embedded value, then transparency becomes difficult. And, when transparency becomes difficult in society, then social hierarchy is likely to form. With hierarchy comes competition. With competition comes deception. And, with deception comes behaviors that generate conflict and psychological dissonance.

The degree of openness of a system may be assessed by looking at its **accessibility** and **responsiveness**. If an individual, for example, can obtain information about a particular technology without any form of restriction (based upon permission, price, status, or association), then that information is more open (accessible & responsive) than if, for example, a subscription is required to obtain access or if the information were only available using a proprietary software program. Any proprietary technology gives the user near zero trust, through confidence in understanding its operation. As a result, the user is forced to put all of its trust in the

private owner(s).

The notion of 'accessibility' comes with the question, "How accessible is a system to its users?" Alternatively, the notion of 'responsiveness' asks the question, "How responsive is the system to the needs of its users?" Also, accessibility and responsiveness involve the concepts of *distribution* and *redundancy* for purposes of *recovery* in the case of an unexpected failure of the system. Responsiveness [in part] asks the question, "How open and accessible is a system when it experiences a problem?"

The idea of participation [in society] is similarly related to openness. If an individual can make his or her own contribution to the progression of information, and can use his or her unique insights and experience to modify, re-purpose, and redistribute it, then that information is more responsive, and thus, more open, than if the information is "read only" or "plausibly deniable" (Read: scientifically unverifiable).

Openness is a principal condition for a system to remain in a state of dynamic equilibrium with its environment through the sensation of new information. Openness has epistemic benefits; it makes it possible to construct conditions favourable to knowledge discovery, and thus, the arrival of truly informed solutions. A lack of openness and transparency means that scientific problem solving and information discovery is constrained to those who work in secret or who typically fail to collaborate with a larger community and leverage the entire accumulation of collected knowledge available. This is such an important statement that it bears stating another way: The result of a lack of openness is that problem solving activity is constrained and fails to adequately apply the power and resource of the system-community. Hence, without openness there is not a systematic solution-orientation. Openness and unrestricted information sharing are critical to scientific and social progress at the level of an information community. Deception and obfuscation at the social level, at the level of material resource, and within the individual also, is costly to our fulfillment, our well-being, and our very survival.

**INSIGHT:** *In large part, market entities do not want the population sharing, because sharing induces the condition of abundance, which reduces commercialization and profits.*

A community is [in part] characterized by the application of openness to information, to systems and services, and to the commons [of the real world]. Herein, there exist several forms of openness, including: freely available access to information; the community and its systems are transparent, interoperable, accessible, and responsive; and, material goods and services are openly accessible and shared. In a community, openness represents:

1. **The social domain:** freedom to use; freedom to contribute; freedom to share; transparency of needs; transparency of resources.

2. **The technical domain:** open functional specifications and standards (use of open standards and interoperation); open developmental specification standards (use of open source); open research, knowledge, and technological development.
3. **The ecological resource domain:** open access to goods and services from a common pool of ecological resources and collaborative commons services.

The P2P Foundation maintains a mindmap structure describing openness and its application to society. The visualization contains 8 aspects of processes representing the cycle of reproduction and growth of openness in our societies (Bauwens, 2010):

1. **Aspects of openness** - the requirement and expectation of inclusivity or open access. For example, the requirement to participate or contribute for work to be completed; the demand on the part of people for transparency and shareability.
2. **Enablers of openness** - definitions and standards representational of openness. In the market-State, this includes licenses and standards that are open.
3. **Infrastructure of openness** - technologies that allow everyone to contribute and produce in an open manner. For example, open collaborative technical platforms, open communications software and knowledge repositories.
4. **Open practices** - behaviors and procedures that reflect openness. For instance, sharing and releasing information in an open manner.
5. **Open domains of practice** - behaviors and procedures that reflect openness which are embedded in domains of practice. For instance, domains of practice, such as scientific research, technology development, or education where openness is encouraged and promoted.
6. **Open products** - this is essentially item # 2 (infrastructure of openness), but is more specific in that it refers to specific hardware and software systems that are open, such as the Linux operating system and Apache servers, or the hardware systems produced by Open Source Ecology.
7. **Open access (open standards)** - this refers to releasing content freely to the public at no cost and with limited restrictions with regards re-use, modification, and re-distribution
8. **Open consciousness** - this refers to the consciousness/mental state of individuals, such that they are mentally open to new information and desire to share. It also refers to the knowledge of how sharing benefits everyone.

9. **Open movements (market-State only)** - social movements specifically dedicated to increasing 'openness' are also tackling openness as a social awareness concern. For example, P2P Foundation.

In an open system, anyone (conditionally) can use and contribute to the system, and all changes go to the mutual benefit of the everyone [due to the way in which the system is designed]. Mutuality (as mutual gain and benefit) recognises that a sustainable world can only be achieved through the sharing of a common pool of resources (or mutual participation in a common, living ecological system). And, an open system requires an open and collaborative approach to the nature of its design if it is to remain open.

When the idea of openness is applied to information technology, then it acquires the labelled, "open source". The concept of open source (free-shared) maintains at least three characteristics (all without the requirement of exchange or currency cost):

1. The free and open access to material.
2. Freedom to redistribute material.
3. Freedom to reuse material.

With closed and "secure" content (i.e., "protected content") the "author" (or, owner) of the content is the sole creator and owner of said content. With open content the "participative creator" is in a state of collaboration with those who have come before as well as the community of users of the content. The community of users and the "participative creator" are all creators and to an extent, accessors (or "owners"), of the content. An open system is a closer approximation to the existence of every living systems (in nature), and closed content goes a long way toward limiting the evolution of a community and causing unnecessary inefficiency (and suffering) in the world. Closed content does not account for the fact that the "participative creator" of the content would have been unable to create the content in the first place were it not for their prior learning, informed by the earlier work of many socially participative others. Fundamentally, systems either controls users (e.g., proprietary software) or users control systems (open software).

An important thread that connects these various meanings [of openness] is the idea that by reducing barriers, and sharing what we learn and create, the systems that we are a part of will work more efficiently, fulfill our needs more effectively, and align more closely with our desired direction. Openness and sharing are essential elements for a culture of emergence where individuals design for adaptation and the fulfillment of common needs through a common pool of resources (i.e., a 'commons').

As individual human beings "we" must remain open to new knowledge, understandings, and interconnection for without openness our systems and "our" psychology might become stuck in an ever deepening rut. Herein, the very idea of "openness" allows consciousness to see

that it is in a rut.

When someone thinks of openness they might also think of their biology and the human body, of a particular structure. The human body is an "open system" and thrives because of its openness. It is structured "to be" open. The human body is constantly exchanging things through valuable interrelationships. Whether it is oxygen and CO<sub>2</sub>, or nutrients and waste - the body cycles - resources in and waste excreted. Human biology requires openness to live.

In philosophy, openness is the degree to which someone is open to the realities of life, to the truth of that which happened and is happening. More specifically, openness is the degree to which a person:

1. Is willing to face reality as currently perceived.
2. Is willing to recognize that there may exist limitation in perception as well as an ability to derive more accurate evaluations of life.
3. Is willing to see reality as it is and reduce contradiction
4. Refrains from forming answers until the answer is clear.
5. Acts in accord with one's current understandings.
6. Is compassionate in all one does.

At the level of someone's personal experience, openness is the degree to which a person:

1. Has imaginative capabilities.
2. Has broad intellectual curiosity
3. Values and respects oneself and others.
4. Is open to re-examining closely held beliefs and values in the presence of new information.

Openness within and between individuals builds equality and trust in their relationships, and therein, it also maintains the qualities of honesty and integrity. Sharing deepens relationships, literally. In community, we are all privy to information about the operation of the community.

The more you know about someone or something, the more likely you are to be "in synchronization" with them, and hence, the more efficient and effective the entire relationship. Personal relationships in synchronization are likely to be experienced as supportive and based upon mutual trust. Relationships with nature based on [brain] synchronization are likely to enhance learning. It is important to note that when openness is applied at social-level organization, then it is qualified by respect for an individual's desire for privacy and quietude, for personal restoration, which is a human need.

Openness is a word that denotes opportunity and possibility. Openness and sharing are enablers of participation. When sharing occurs on an individual level, collaboration at a community level becomes possible. The application of the values of openness and sharing have the potential to create a socio-economic

system with a common approach to decision-making at a community level rather than management of individuals by a centralized authority (possibly, through a security enforcement system). By making all knowledge, ideas, and research open and accessible to everyone, everyone has the opportunity to be engaged.

Humans have a natural desire for access to experiences and material in which they have an awareness and interest. By its very nature, sharing implies and enables access, and thus, the issue of sharing will never go away, for human curiosity will never go away. Hence, it is surprising how many people do not realize the damage done to society by restricting and penalizing those individuals who still maintain a natural desire for openness and sharing - all forms of sharing. There are no pirates of information and knowledge, there are only "criminal" inhibitors of sharing. The value of sharing is summed up quite nicely in the following statement of gratitude: "Everyone thanks everyone for sharing in the community". Humans have a primal instinct to share. If the instinct is blocked it will lead to repression and other troubling states.

At the organizational level of a community the concept of openness involves four principal sub-concepts:

1. **Collaboration** - openness in the sense of the boundaries of organizations becoming more porous, fluid and open [interoperability].
2. **Transparency** - the communication of pertinent information to everyone in the community. The organization itself becomes "naked". If you are going to be naked it is important to have good value and parts. You must have values, emergence, and integrity as part of your structural makeup, your "DNA as an organization", because if you do not then, trust does not exist. Metaphorically speaking, sunlight is the best disinfectant ... and we need a lot of sunlight in this troubled world. Transparency is about the accurate and complete communication of information. Transparency becomes a means to optimal production (Read: productive/abundant fulfillment). Additionally, transparency allows for auditing at scale; and hence, greater trust at scale.
3. **Sharing** in access to our common heritage and to all information has the potential to "create a rising tide that could lift all boats".
4. **Empowerment** - that which empowers the participation of the greatest number of people. The distribution of knowledge and processing is a powerful form of organization for it leads to the potential for the sharing of improvements to all the systems used by the community. As knowledge becomes more distributed there is a concomitant distribution and decentralization of power that

takes place, a disaggregation of power between groups of individuals and an aggregation of power within the indivisible individual. An open world brings forth the freedom to express one's power in a higher state of creation.

Humankind now has access to technologies that extend its functions "deeper" into the material environment. For example, the printing press gave future generations direct access to the knowledge of prior generations. The Internet gives us direct and instantaneous access to the intelligence contained in the cranium of other human beings on a global basis; we are an age of networked intelligence.

Bees come in swarms and fish come in schools. Starlings come in murmurations. Predators are chased away by the collective power of the starlings as they fly in what are known as 'murmurations'. In the murmuration there is "leadership" (as in, stepping out to go first), but there is no one "leader" (as in, authority). The murmuration functions according to the four sub-conceptions of openness previously discussed, which are generators of a courageous individual. The individual birds [somehow] understand that their interests are in the interests of the "collective" group, the 'murmuration'. Essentially, to be open is to remain open to answers that support us in the evolution of our fulfillment, or in protection from a predator [through the courage of individuals].

Where there exist [market] entities (e.g., businesses) that are afraid to share information about their services, often stating, "we don't want to share too many of our secrets", then where is the fulfillment? The secretive withholding of information about (and around) the services that someone uses is inoperative for creating a fulfilling environment. There is neither fulfillment nor trust when there are secretive entities that contract with one another [because they do not trust one another] and are afraid to share information about their past, current, and future products. Basically, competition in the market place reinforces mistrust.

**INSIGHT:** *When things are hidden, they can't be healed.*

## 12 Cooperation and collaboration

**MAXIM:** *Common sense brings common actions. When useful information and tools are available to all self-directed individuals, then conclusions will coalesce, a common direction emerges.*

The human species reproduces itself through cooperative effort (also known as collaborative effort). Cooperation literally means "working together" (from the Latin "co", together; and "operate", to work). It is a value [construction] process of two or more people engaging in an activity for shared purpose or gain [by mutual benefit], supported by *communication* and *coordination*. In other words, cooperation is the act of working together for common gain to achieve more than possible individually. The words cooperation and collaboration maintain a similar conceptual meaning. Collaboration and cooperation are sometimes used as synonymous terms; though herein, when two or more people are working together to cooperatively create something, then the word collaboration (co-labor) is a more ideal fit. Effective collaboration begins with a common vision and a conducive value system, and it ends (or begins again) with a distributed network of participation. In this model, collaboration involves mutual commitment [as a member of a system's team]. Essentially, collaboration belongs to teams (or groups), while cooperation is a general value orientation typical of individuals in a system or network. The distinction herein is that cooperation is more of an orientational value state-dynamic, whereas collaboration identifies a distinction in the work (or labor) of individuals who are working together.

Cooperation at the societal scale inherently necessitates the existence of a commons - a shared information environment and a set of resources accessible to all members of community, facilitating collective action and mutual benefit. This concept of a commons extends beyond mere physical spaces or tangible resources; it encompasses knowledge and digital spaces, serving as a foundational element for collaborative endeavours. "Pooling" resources is the most efficient way of operating together for global human need fulfillment.

**INSIGHT:** *In community, there is no competition in access to life, technology, and exploratory support services.*

Cooperation is an essential humanizing experience that predisposes participants to a benevolent view of others, while creating environments of encouragement and support, promoting more fulfilling learning experiences, and enabling the coordination of activities toward a desired objective. Cooperation opens a whole new world of adaptive opportunity. This has clearly been the case when molecular processes teamed up to form cells, when cells teamed up to form multicellular organisms, and when humans teamed up to form

organized functions in their societal systems.

Life, from its beginning on this planet more than three billion years ago, took over the planet by networking, by cooperation and the formation of [integrated] partnerships. Cooperation is widespread throughout nature as a common survival strategy expressed at many levels of life from bacteria to complex living organisms. It is present in the social structures insects and it is universal in mammals. The Earth itself could even be perceived as a cooperating and living system made up of interrelating elements that form a unified living and whole system. The evolution of life occurred in a biologically cooperative way at the cellular level when life was just forming on Earth. When the lower biological units began to cooperate they started to form increasingly complex structures, lifeforms.

Life cooperates, and cooperation among organisms of the same species [and between species] offers a clearly observed survival advantage. The evolutionary advantages of cooperation are significant. Wherever evolution is able to exploit these advantages by organising cooperation, it will do so. Any organisms, whether of the same species or not, can benefit from the evolution of relevant cooperative relationships. Whatever the evolutionary challenges faced by organisms, they can be met more effectively through cooperation [in the integral and synergistic fulfillment of needs]. At a fundamental level, if it is true that we are social beings with social needs, then cooperation is necessary for social fulfillment.

The advantages of cooperation continue to apply no matter how large the cooperative organisation becomes. In other words, progress in cooperation structurally reinforces social benefits [in the fulfillment of needs] the larger the network becomes. The advantages do not cease once a cooperative organisation reaches a particular size. Increases in cooperation deliver further evolutionary advantages as growth occurs. Increases in the scale of cooperative organisation did not stop providing advantages once cooperation reached the scale of a single cell, or the scale of multicellular organisms, or of human villages. In all these cases, the potential benefits of cooperation between organisations of the largest scale continued to drive the expansion of [potential] benefit.

A group survives according to its members' abilities and desire to cooperate for common ends aligned with natural processes. Systems exist because of internal cooperation. And, what better example of a cooperative system is there than the organization of the socio-economic environment around fulfilling the desire of individuals to do that which is most meaningful and appreciatively desired.

Almost everything someone uses and depends on in their everyday life is produced and brought to them by the coordinated actions of many other people. Almost everything made by humans is produced cooperatively (by degree and context). Herein, cooperation involves a necessity for teamwork, and teamwork involves technical

cooperation (as collaboration), which is required to maintain the functioning of a community.

**NOTE:** *In Community, information is held in the commons and we collaborate freely.*

Those who maintain a cooperative mindset may know that "win - win" is a better way to live, but persuading, campaigning, cheerleading, and manipulating other people to be more cooperative and collaborative is not a systematic solution to a general structure that maintains a state of opposition to cooperation. Instead, the needs of others must be sought/brought fulfillment (survival, safety, self-esteem, a sense of belonging, etc.), or they will not feel the value of *wholeness, togetherness, and interconnection* that leads to true cooperation - integration and not separation. The forced fun and manufactured moral of corporate "team building" events can wear thin on many people. Corporate team building is often used to keep workers on-task and committed to their work. And, these events are no solution to systemic, structural opposition to social cooperation.

For the purpose of semantic clarification it is important to note that the words cooperation and collaboration both have negative nuances in common parlance. For example, when a competing camp "collaborates", then there may exist "collaboration", but there is not trust. And, when the apprehended man "cooperates" with the police in double-crossing his partners for a shorter sentence, then he might be said to have "cooperated" [under duress]. There is also the common phrase in war and in competition that, "he was hanged for collaborating with the enemy". In their negative, "collaboration" (without trust) and "cooperation" (under duress) are used to mean working with an "enemy force" or "competing party". These negative nuances are not conceptual components of the value conditions of cooperation and collaboration discussed herein.

As a community, we cooperate to more greatly understand ourselves. We don't lose our individuality; we still have our individuality, we are just part of something bigger. Cooperation does not have to mean the loss of our individual freedom by being part of something bigger. Instead, we gain freedom, we have more options; our decision space grows, not shrinks, as we become an individual [part] of something bigger, a larger community of individuals. When "we" cooperate together it doesn't mean that "you" or "I" become a slave to a larger organism; instead, it means that together we get a larger decision space. We have more choices, not fewer.

**INSIGHT:** *In society, cooperation between individuals leads to the creation of technologies that further facilitate that cooperation.*

## 12.1 Competition

**INSIGHT:** *When we realize that we share one earth we may come to understand that competition is obsolete.*

Competition sets individuals in opposition to one another. As a value state, cooperation exists in contrast to competition. Competition is the struggle between and within species for survival, and it too is widespread throughout nature. However, complex biological entities are in fact wired for connection and cooperation; although, their competitive drives can be triggered and reinforced under a structure that necessitates (and incentivizes) gaming behaviors.

Cooperation connects deeply into the "social" body of humans, wherein the more connected we feel to others the healthier our expression and the happier our experience. Society, in general, is full of the evidence of this need for connection: from books to the social media phenomenon, from public events to group activities, and from knowledge advancement to technological infrastructure. There is a general social nature to everything that humankind does. Cooperation is a fundamental necessity for maintaining stable human arrangements, while a spectrum of counterproductive and destructive actions, behaviours, and "attitudes" arise out of competitive environments. Some societal systems incentivize deceptive behavior, which creates instability in the system.

For any given task, there are basically 3 ways to perform it: (1) with other people; (2) apart from other people; or (3) against other people. If the task is done with other people, in the purest sense, then cooperation exists. The purest form of cooperation says that "I can succeed only if you succeed too, our fates are linked and we sink or swim together". In a sense, that is descriptively accurate of our entire world, but it is not always true of individual tasks. The second possibility is a type of individualistic model where someone performs a task totally removed from others doing it, so any given persons success at the task is unrelated; one person's success and another have no connection to one another. There are learning-oriented and creative-oriented tasks where the individualistic model is more useful. And, the third possibility is that the fates of individuals are negatively linked so that one person can succeed only if another fails, and vice versa (i.e., competition [in fulfillment]). Many of the tasks performed in modern culture, at home, at work, in the market, at school, at play, and in modern life in general are set up not necessarily, but artificially, in such a way that most can succeed only at the price of other peoples failure.

Resources cannot possibly be utilized in the most efficient and effective manner when there is competition over their acquisition and usage. Further, socio-economic competition incentivizes anti-social behaviors and opens a path for advantage over others. Such a state is highly likely to incite conflict, and conflict brings catastrophe to both sides.

Fundamentally, even though cooperating with other participative users in a society doesn't guarantee things are going to be great, being under the power of societal competition pretty much guarantees that things are going to be bad (for most/many people).

**NOTE:** *What was the first game you ever learned? Was it "musical chairs" where "n" children were scrambling for "n-1" chairs. In the game of musical chairs children walk around a set of chairs to the sound of music and when the music stops everyone rushes to sit in a chair; but, because there are always 1 fewer chairs than children, one of the children is "out". The music is then put back on and another chair is removed, and when the music stops again another child is "out". This process is sickeningly repeated until at the end you have one chair with one child on it, triumphant, smug, the "winner". And everyone else excluded from play, unhappy, "losers". That is how you learn to have fun in modern culture. And, it is a prototype of artificial scarcity that people in early 21st century society have been conditioned into accepting. The standard form of the game of "musical chairs" exists in contrast to the game of cooperative musical chairs, where you take chairs away and the challenge is to fit everybody on minus 1 chairs each round so that children have to figure out and work together how to fit everyone on one fewer chair; and there is no such thing as "out" or "loser".*

It must be acknowledged that advances can happen in the "heat of competition" that would not have happened (or, not have happened as rapidly) otherwise. It is also easy to introduce previously existing, but not yet released, technologies to the public during states of competition. The desire to do well in competition can cause individuals and groups to work extra hard and make significant advances. The desire to share discoveries from a pre-discovered source, over time, can lead to important advances reaching all of humankind. Herein, information sharing between competing entities during, these competitions, is important and ought to be done.

## 12.2 The three central arguments

**INSIGHT:** *Cooperation lowers entropy in a [social] decision space, whereas competition increases it.*

In general, there are three central arguments against competition and they revolve around:

1. **Psychological health** (self-relationship);
2. **Relationship health** (social-relationship); and
3. **Performance motivation** (system result) as motivation to do one's best.

**NOTE:** *Community engineers "win-win" solutions.*

### 12.2.1 Psychological health

**INSIGHT:** *Scientifically speaking, there are "competing" centers in the brain and you can be materialistically oriented or relationship*

*oriented, but you can't really be both at the same time.*

First, competition has a clearly damaging effect on the **psychological health and self-esteem** of individuals. Competition is to these components of the individual as sugar is to teeth -- it rots psychological health and self-esteem. The meaningful distinction herein is not between those who "win" and those who "lose". In terms of psychological health, the meaningful distinction is between those who have to compete and those who are blessedly free from having to compete.

To the individual, competition teaches that "I am only as good as my last victory, that my sense of competence, and thus, my confidence is contingent on my having defeated other people" -- esteem becomes artificially circumstantial. When someone "loses" it feels lousy, and that lousiness can turn in to a form of self-corrosion. But, even when someone "wins", it is a shot of adrenaline and other hormones that do not last long, and one falls back to baseline (or below), and then one needs more and more victories to try and recover that initial euphoria, which is not unlike developing a tolerance to a drug. Competition, regardless of the results in any given encounter, encourages us to doubt ourselves and to believe that we are never ultimately successful or fulfilled, and must always try to beat other people, which over time creates a reinforced perception that competition is "necessary". And for some people it does in fact become a necessary "pick-me-up". To try and feel better about ourselves by "winning a prize" is like trying to slake a thirst by drinking salt water: it is not just unhelpful, it makes the problem worse. So, the more you compete the more you need to compete in order to feel satisfied, and the more likely you are to feel that competition is of the utmost necessity.

Therein, socialization into a competitive society at an early age appears to produce people who don't really care about anything until it turns into a competition; for they only recognize as meaningful that which occurs under the state of competition.

Researchers have found that competitive structures reduce generosity, empathy, sensitivity to others' needs, accuracy of communication, creativity, and trust. Also, competition makes self-esteem precarious and conditional: one's value is likely to become contingent on how many people one has beaten. Competition is a damaging force that is divisive of effort and leads to an extremely unhealthy mental attitude in people. Research finds that children who have been conditioned to compete against others are less trusting. Why would you trust others if you keep finding yourself in activities where others' success comes at the price of your failure? Conversely, cooperation is known to encourage trust, sensitivity, open communication and coordination, and ultimately, helpfulness.

What does it mean to apply the general concept of competition to a system? If competition, as a value orientation, is being applied to a system, then it is being

applied to the structure of the system. What does it mean to apply competition to the structure of a society? Herein, the problem is [in part] with a structure that sets people against each other. When is such a structure ever likely to be beneficial psychologically or interpersonally?

When people say they "are really competitive" they are in fact admitting to others that they have a psychological myth roaming around their psyches. Notice how such people do not claim that they desire excellence for themselves or that they are deeply motivated; instead, they are actually saying, "I am not satisfied until I have defeated other people". That is a sign that there is something terribly wrong with them, psychologically. Modern culture valorizes competition instead of identifying it as a flaw in the social structure. Therein, the cloaked message is repeated over and over again that the only way to do anything is to try and make other people fail. The lesson taught ad infinitum is that it is necessary to "win" and not "fail"; that other people are not to be worked with, but to be worked against. If competition were "just a part of human nature", would it be necessary to have such continuous conditioning, and a socialization structure to mould people in this way (i.e., into slaves to competition)? Or, are cults, businesses, and governments trying to do so without even making it plain that it is one of their structural goals (and value encodings).

**CLARIFICATION:** *To 'conspire' is to plan in secret when under the condition of competition. In early 21st century society, everyone conspires. In community conspiracy is irrelevant and unnecessary.*

## 12.2.2 Relationship health

**INSIGHT:** *The human body does not compete with itself. The brain does not compete with the lungs. The lungs do not compete with the liver. Instead, they use their 'variety' (a cybernetics term denoting the total number of distinct states of a system) of different system states to find an dynamic equilibrium for the benefit of the whole system.*

The second effect is that of competition on **other people and on relationships** where competition teaches one enduring fundamental message: "Other people are potential obstacles to my own success". They are not potential friends and allies and helpers; they are potential rivals whom "you" must best. A competition-based value orientation states, "I succeed if you fail" -- it is fundamentally a win-lose structure. And, there is a stronger version of it, "I succeed only if I make you fail." This is overtly visible in professional organizations (e.g., professional sports, industry, and market employment) where competition facilitates "in-group" teamwork and "out-group" aggression, which is useful for in-group profit. Within such an environment, not only is it irrational to help someone whose success might require your failure, but competition creates a climate in which

such help is unlikely to occur in any case.

For instance, organized professional sports are similar to nationalistic soldiering on an authoritarian team with a leader who coerces and manipulates through appeals to emotion and appeals to authority in return for spectacle and reward. It is a militant environment where the coach is the authority and players on different teams attack each other.

The greater the competition the more society sees the predictable effects of competition on human relationships: the aggression; the "cheating" and "crime"; the self-destructive behavior (especially in sports); the envy of winners; the contempt for losers; the reserve and distance an individual finds himself or herself in while holding others at arm's length; the isolation and loneliness; and the fear that is generated in the experience of separation. These consequential[ly structural] effects occur over and over again, and whenever they flare up into truly ugly behavior society blames the individuals who were forced to compete, for not knowing how to compete "properly", for not having been taught [or engaging in] "sportsmanship".

There is no such thing as a 'class' of criminals and to imply so is to paint a polarised/black and white picture of the classic 'good vs evil' battle. We're creating enemies by believing they exist. Enemies only exist in our heads, become "enemy" is a concept. Thus the real-world comes into view where what is observed is "hurt believing people, hurt people" and "terror creates terrorists". Terrorism, by definition, is using an action to cause terror for any purpose. People who relish dishing out punishment, and criminals who don't care who they hurt, are just 2 different sides of an environment of scarcity (where it is better to use violence than starve), where each side sees themselves as avenging angels and the other side as heartless devils. Both sides crave power, are willfully ignorant, violent, apocalyptic and see the world in a simplistic orientation-toward-self way. If there is no criminal class, then there is no need for a State.

Structural social competition does not, in fact, "bring out the best in us" and "push us farther and faster" than we are ever able to motivate ourselves. Instead, it induces psycho-social stress, and a regenerated probability of fear, greed, and social aggravation. In competition we are threats to each other -- we see each other as a threat to an achievement that only one of use can achieve.

Competition generates artificial distinctions and separations among a society. And, it makes it difficult to determine whether the advice (or feedback) we receive is for our benefit, or does it primarily serve someone else's interests. Competition cloaks agenda and conceals malicious intent.

A community does not need the concept of "sportsmanship" when individuals are playing cooperative games. This isn't to say that sportsmanship is not necessary; instead, it is to say that the concept has no meaning. It is the equivalent of the non-existence of the concept of "theft" in a society where there is no personal

property and where everything is shared and accessible. When humans have access to the necessities of life, then they do not steal. If you don't understand that, imagine a community living near a waterfall with lots of fresh water. No one comes at night and "steals" water. Therein, the concept of "theft" has no meaning, or is re-defined with a distinct context, such as the appropriation of land into property as 'theft'. Similarly, in a community, the concept of "sportsmanship" has no meaning. The concept has no meaning for there is no norm telling you what you are otherwise supposed to do. It is like cities where there are no "jaywalking" rules; the idea of jaywalking has no meaning because there is no rule that says you are only supposed to cross at intersections. Most concepts are contingent on some other thing people have accepted, whether they realize they have accepted it or not. For example, the concept of "blasphemy" has no meaning if you don't believe in a "divine authority". The concept of "leisure" has no meaning unless work is alienating. Maybe even the concept of "attitude" has no meaning when individuals are intrinsically fulfilled and not extrinsically coerced. Is "sportsmanship" an "attitude"? Is fulfillment a[n attitudinal] direction? And so with cooperation, the idea of "sportsmanship" is not merely unnecessary, but without meaning. In community, what is the real point of cooperating as a "team" if just for the purpose of defeating another group of people who are cooperating as a "team"? And for the most part, this is as close as most people get to real world cooperation in early 21st century society.

A good shot in tennis by definition is a shot that the other person can't get to in time and return properly. So a player's goal at each instant of play is to make the other player fail ... as in war. Some people then erroneously suggest, "well, play tennis where you aren't trying to make the other person fail, but you are trying to play your very best". Such a statement is nonsensical, for such a game would not be tennis, it would be another game, perhaps with two rackets, a ball and a net, but not tennis. If the rules of the game, literally or conceptually, demand that individuals work at cross purposes, then the changing of "attitudes" about the activity is not sufficient. The structure of the activity must itself be changed. Some structures inherently set individuals against one another (e.g., the business/economic market), not because the individuals are neurotic or malicious or sadistic, necessarily, but because the rules of the game (i.e., the structure) demand that they view everyone else as obstacles to their own success, which will inherently generate secondary psychopathy (Read: sociopathy) in most individuals given sufficient time. Competition fractures trust and support in an interrelationship. If the resolution of a game dictates awards, rewards, trophies, prizes, medals, certificates, or some other form of recognition that has been decided in advance that not everyone can get, then the message is clear, everybody else around is there to be beaten. Therein, each individuals job is to beat everybody else. Full stop.

Research into the effects of competition finds that

when people are led to compete they are less able to perceive how the world looks from someone else's point of view, which psychologists call "perspective taking". Therein, they are less likely to have sympathy, empathy, compassion, and visceral resonance with others. They are less likely to help people in need. They are less likely to recognize evidence in a situation of disagreement (i.e., they are less likely to inquire openly and actively). And, they are less likely to communicate objectively and accurately. This is not because of personality differences; this is because of structurally conditioned differences. One study mentioned in Alfie Kohn's book, "*No Contest, The Case Against Competition*" (Kohn, 1992), found that you could tell how ungenerous a child was in his or her relationships just by how competitive the child's father was. Just living with someone who is competitive is enough to make children selfishly self-interested - desiring rewards at others expense.

A wide variety of studies confirm the logical argument that competition sabotages relationships and undermines self-confidence, while impeding fulfillment and long-term interests [particularly in learning]. These and many other destructive outcomes (e.g., envy for winners, contempt for losers, aggression, hostility, and suspicion) damage the stability of a community and contradict multiple other conditions valued by this social design. And, a diminishing "attitude" toward cooperation clearly emerges as the degree of competition increases. In many ways, there exists a choice of mindset: are we going to remain in a state of fear, fight and compete, or are we going to help ourselves by helping one another?

Alfie Kohn, a sociologist and author of multiple works on human nature and behavior, presents some salient arguments in his well-researched book "*No Contest, The Case Against Competition*" (Kohn, 1992). Therein, Kohn analyzes hundreds of studies conducted over a sixty year duration that compared cooperation with competition. His findings concluded that both, in business and in education, cooperation consistently out produced competition. He writes how "[in competitive societies] we are encouraged to pit ourselves against one another and taught that competition is a prod to productivity, a builder of character, and an unavoidable part of human nature." (Kohn, 1986) Kohn goes on to show that, "Any win/lose structure is psychologically destructive and poisonous to our relationships, while a little [competition] is not as bad as a lot, evidence and logic suggest that none would be better still." (Kohn, 1993)

Much of the discussion on competition is based on the belief that there is nothing a community can do about it anyway because competition is just "human nature". However, there is no evidence to support this belief, and there is considerable evidence to challenge it from scientific research into [at least] evolutionary biology, cross-cultural anthropology, and the learning / performance sciences. The research can all be summarized in a single sentence by Alfie Kohn, "We compete because we are raised that way, not because we

are born that way. It becomes very convenient for some to then go on to say that they have no responsibility for changing their [and our] practices because competition is innate. This is not so. The belief that we have no choice about being competitive is [untrue at the least and potentially deceitful at the worst]." Many people confuse how the world really works with how they have been brought up to perceive the world to work. Competition is not a necessary part of human life, just like standardized tests and grades are not a necessary part of learning, and business is not necessary for the economic fulfillment of human needs.

There are many other works that examine the effect of competition versus cooperation on the individual, on society, and also, among other species. Lynne McTaggart's book, "*The Bond: How to Fix Your Falling-Down World*" is one of them. The findings she outlines in the book are consistent – the optimal amount of competition is "zero", and species that cooperate are more likely to survive. McTaggart's research found that even "friendly competition" between sports teams and within companies had downsides. Competition generates anxiety, it promotes the production of stress hormones, and most importantly of all, reduces the probability that cooperation will occur later on. McTaggart states, "we are in a constant relationship with everything and everyone ... we must share and recover wholeness in our lives if we are to survive and flourish".

**MAXIM:** *Competition begets competition, cooperation begets cooperation.*

### 12.2.3 Performance motivation

**APHORISM:** *In competition, the depression of another is the price of another's exhilaration. One's misery the occasion for another's rejoicing.*

The third effect is that of **competition on performance motivation**. The claim that competition motivates people to do their best is unfounded. The middle of the road approach says:

*"Maybe competition isn't so good for how we feel about ourselves, but when we are trying to win we are much more likely to achieve great things. If we weren't competing we would all just stagnate in a pool of mediocrity."*

Some people say that all societies need a middle of the road position when it comes to competition: a position of "balance" - not too much competition, but not none at all. Unfortunately for those who promote "balance" in competition, the research finds that competition not only isn't necessary for excellence, typically its absence is necessary for excellence. At best, competition provides no advantage. The research clearly shows that not everything that is bad when done to excess is "ok" in moderation. Some things are bad because of what they are (their structure), not just because of how they are being done or overdone as the case

may be. Some orientational structures are inherently and fundamentally unfulfilling, regardless of whether they are done to a minimum, done to "moderation", or done to excess. Competition is one of these fulfillment-destructuring forms of social organization.

Studies find that the more focused an individual is on getting a prize the less likely they are to take "risks" and challenge themselves, to play with possibilities and potentials, because they don't want to do anything to jeopardize their status of getting the award. An 'award' is a 'reward' that everybody can't get, so it adds the arsenic of competition to the strychnine of rewards (or rewarding extrinsic motivators). Setting people against each other to try and identify the "best" undermines the quality and creativity of human performance.

There are perceptions of self-interest that shut out rational and sustainable self-interest. For instance, the perception that competition is in one's own self-interest is antagonistic to cooperative coordination (or collaboration) at a social scale. For many tasks in the real world, what conduces to excellence is collaboration, and not competition. Together, all of us are smarter than any of us. The synergy of all individuals applying ourselves is greater than any one individual applying himself or herself. A well-functioning group is often, though not always, able to produce better results than the most expert member of the group could do on his or her own. The most effective means of producing or creating is ruled out in a competitive environment because sharing negates the success[ful winning] of the person who has solved a problem. And, this is why [in part] the market-based economic system is not an efficient economic system for it inhibits sharing behavior and generates unsustainable perceptions of self-interest.

Competitive market entities rationally "stifle" their competition to protect their market share. Markets can be controlled. Some market entities are always likely to take advantage of human whims and instincts [for their own commercial benefit]. Those market entities with the organized capability of controlling human whims through knowledge, deception, property, or force are likely to take [competitive] advantage of such opportunities. Competition's very structure maintains destructive consequences. Competition decomposes community. And, competition for survival [in any manner] is a recipe for disaster.

Just as competition isn't good for our mental health, and just as it isn't good for our relationships, it isn't even good for our individual performances. One obvious result of competition is anxiety. "You" are naturally under a degree of stress and anxiety when you are told that you have to compete, or to be the best, and stress and anxiety tend to get in the way of thinking well and performing well. Yes, challenge is necessary for learning and for growth, but it is not accurate to say that without competition there will not exist challenge. It could even be said that competition is a destructive form of challenge.

When competition engages self-preservation, then

competitors are unlikely to back down, to consider and re-orient, for they have engaged their basic biological reflex responses, their egoic attachment to identity, their financial survival, their trauma and their drama. Competitors become "invested" in something which is actually impermanent (i.e., they become "investors"). Therein, adaptation (as a measure of performance) becomes inhibited and growth potential becomes stifled. Basically, adaptation isn't supported by the structure of a competitive socio-economic system [in part] because it cuts off the sharing of feedback [as well as trust in the "feedback" itself].

Also, non-cooperative approaches almost always involve the duplication of effort (i.e., inefficiency), since someone working independently must spend time and energy on problems that may have [unbeknownst to them] already have been encountered and resolved by someone else. This leads to the creation and eventual expansion of a bureaucracy (i.e., the duplication of unnecessary efforts at a social scale). In the area of scientific investigation, scientists sit on important discoveries, sometimes for years, prior to publishing them because they do not want their competitors to acquire the same new knowledge. The potential for an overall effective performance becomes reduced through competition.

Noam Chomsky observed,

*"The smart way to keep people passive and obedient is to strictly limit the spectrum of acceptable opinion, but allow very lively debate within that spectrum, even encourage the more critical and dissident views, that gives people the sense that there is free thinking going on, while all the time the presuppositions of the system are being reinforced by the limits put on the range of debate."*

What do people in early 21st century society call learning from one another in school? There is a common word for this, and it is called "cheating". It is even more interesting that when the word "cooperate" is used in most schools, it is used to mean obedience; it is used as a euphemism for mindless obedience, not real cooperation.

**APHORISM:** *Deceptions is considered a good strategy in war.*

### 12.3 The acceptable positions

**INSIGHT:** *The ultimate potential of cooperation is the restoration of [common]unity. Community is our most informed model of cooperation.*

There are two acceptable positions in most of modern societies about competition:

1. **Unqualified endorsement** - competition is what made this land great; competition is what

motivates people to do their best; competition builds character and we need to start them when they are small; it is a dog-eat-dog world out there and so we might as well make it a dog-eat-dog world with little children too; and if you don't like competition there is something wrong with you (you are either scared of it or you can't handle it).

2. **Qualified endorsement** - maybe we have gotten carried away with too much competition; we do it too intensely; we do it with children who are too young; but if we don't get carried away, if we keep things in perspective, if we do it appropriately, then some competition is useful, productive, and so on.

Those are the only two respectable positions in most early 21st century society concerning the topic of competition. But, there is no evidence to support the idea that competition is ever the optimal arrangement for children and adults at work, at home, in learning, in play, or in any socio-economic context in general. Why would society every set a social arrangement up so that one individual or group can succeed only if others fail. When does that ever produce optimal results compared to pursuing tasks independently (and then sharing) or cooperatively. The idea of social cooperation is generally a heretical position in modern cult[ure]. Regardless of what most people happen to think, the research is clear, the optimal amount of competition in any socio-economic environment, especially those involving children, is none.

A socio-economic system based primarily on competition might evolve into a free-market where all things are capable of being commodified in a state of competition with other commodities. In a market-based paradigm, cooperation is not an acceptably reinforced position. A monetary economic system forces the masses to compete with each other for limited resources (some of which are truly limited and others artificially engineered into limitation). Alternatively, a socio-economic system based primarily on cooperation might evolve into a distributed resource-access system, where cooperation and a sense of unity are ever present in the fulfillment of needs. Competition based systems can move toward unification also. When they do, they create a centralized system of power that constantly seeks profit at the expense of others for the further consolidation of power through the removal of competition via gaming strategy. As long as a population maintains a competitive orientational state, then at scale, a socio-economic system shaped around global economic control will emerge naturally.

#### THE ARGUMENT OF THE MISINFORMED:

*"Competition for market share spurs innovative technologies that lower the cost of producing increasingly amazing technological services to the entire public." ... one might well question this statement.*

## 12.4 Competition consolidates power destructively

**NOTE:** *With transparency, humans governing other humans becomes difficult. Information [as data] becomes relatively worthless when the source is obfuscated, and hence, the data cannot be confirmed or validated. All adaptive networks validate information packets. If society is an adaptive network, then it is valid to maintain transparency.*

Competition fosters self-interest above all else. In a competitive social power structure it makes logical sense that some groups will eventually rise to extreme wealth and power thereby becoming de-facto "rulers of the world". After all, individuals need to spend money to make money, which means that those with the most money will always have a much easier time making more of it than those with no money. It is hard to "pull yourself up by your own bootstraps" when one can't afford the metaphorical boots or the straps. Therefore, competition generates a kind of economic dictatorship as a mathematical inevitability that humankind has been approaching for centuries and culminates in the formation of a "revolving door" State. Therein market entities compete to position themselves inside the State for their own benefit, of which, regulations and other State resources may be used to reduce the competitive landscape for their own competitive advantage. In early 21st century society, the laws are often written by the corporations, and the lawmakers are playing their role, pretending to regulate while following through with the act. While a group with great economic power is not by definition a "government" in the traditional sense, it nonetheless has the same effect as one - the ability to exercise great power over the lives of a large number of people and subjectively handle (or direct) a large number of resources. With great economic power comes great social power.

In a community-type society, there are no "competing providers" who can restrict the flow of information and the equal sharing of resources; everyone is a potential provider and everyone is a user (i.e., everyone is a "prosumers", a producer as well as a consuming users). In a community-type society, the societal systems are transparently designed by the community of using producers (a true open source society, or open society).

Competition creates the incentive to think of "loyalty" in terms of [personal or in-group] exclusivity and not [global] inclusivity. Such a fragmented way of thinking is unlikely to convey a means of solving systematically generated and structurally reinforced problems.

Money is power [over others]. This is especially true in a capitalist system with a privatized means of production, hierarchical employment, and wage labor. When an employer tells his employees what to do, that is an example of an exercise of power. Generally, the

power over specific individuals is a function of wealth discrepancy, information asymmetry, and the victim's desperation.

Politics and markets priority encode the value of competition over cooperation into the social and economic structures of a population. In modern market society most people are excluded from participation in decisions that involve a wide variety of important aspects of their lives. Notably, businesses and governments dictate the terms of participation in society. Individuals inculcated into a competitive-based society rarely learn how to learn, they rarely learn how to maintain a state of fulfillment, they rarely learn the differences between needs and wants, and they regularly become dis-connected from their true intrinsic selves; instead, they are conditioned to accept the belief that competition for infinite want and hierarchical social influence is the goal of life [and that "wealth" comes in the form of material acquisition and power positioning]. When competitiveness prevails, then hierarchies and subjugation flourish [at the expense of all humanity].

When competition becomes structured into a society it tends to form a hierarchical and authoritarian culture based upon domination and control. Economic systems oriented toward competition, and hence, domination (and social control), are significantly distinguishable from relationships based on mutual benefit and accountability. These two orientational directions (or conflicting values) could possibly be represented as continuum.

Is your environment hostile at the social and macro levels? The pressure and stress that come with having to prove your worth daily in a competitive environment generates social hostility, and it is a form of "structural violence". A market-based economic system is structurally violent [in part] because of its inherently competitive nature. In some societies, social class inequality is structured to the extent that some individuals have less of a right to life (as need fulfillment) than others. This unfair and unnecessary structural violence is a major source of "crime" and stress and behavioral conflict in early 21st century society.

As a species, many humans in the 21st century are literally unable to afford their own progress. It is not rational to compete; it is only reasonable to unite in fulfillment. Cooperation presents the potential to create a successful and coordinated survival strategy, and humanity owes its evolution to its pro-social abilities to work together as a population (i.e., as a community). The necessity to compete leads to the necessity (or incentivized impulse) to gain competitive advantage over others out of fear of scarcity, or real scarcity, in one's own achievement and satisfaction. Trading and gaining without relevance to human needs, ecological sustainability, and truthful social progress is not human progress.

Yes, there is competition in nature, but to organize a group of individuals around the value of competition has serious consequences for the stability and ultimate

fulfillment of those individuals. Mutual aid and cooperation within and among species actually does tend to be the rule rather than the exception. And, even when there isn't active cooperation there tends to be an avoidance of active competition. Dominance hierarchies and pecking orders do exist within many species such that an individual in the species has a sense of what his or her place is. These static orders reduce the need to compete with other members of the same species. Migration is [in part] about avoiding competition - if there isn't enough food for all of us here, some of us will go over there so we don't have to compete. The idea that nature is "red in tooth and claw" is an outdated view. And, the expression of a dominance hierarchy and pecking order appears within species with a specific need and decision space; a space much reduced in its awareness than that which humankind is presently capable of working with.

The phrase "survival of the fittest" was apparently not uttered by Darwin; it was uttered by Herbert Spencer, who is said to have corrupted Darwin's thinking to justify withholding "aid" from the neediest people. Instead, Darwin actually said that natural selection means that whoever is best able to adapt to a changing environment is more likely to be around to reproduce. He did not specify the method of adaptation, which is now known to involve cooperation more than competition.

When people talk about "competing and winning" in the market, they are referring to the pursuit of what is considered "success" within that economic system. Individuals compete against other individuals and organizations of individuals, striving to achieve certain goals or outcomes. The concept of winning in a market-based socio-economic environment encompasses achieving desired results, such as profitability, market dominance, and personal advancement. In this context, the notion of winning implies outperforming others or attaining a position of advantage.

The question arises as to who or what is being defeated in this competitive scenario. Within a socio-economic framework, winning often entails outperforming or surpassing competitors, which may result in their diminished market share, decreased influence, or even their exclusion from the market altogether. Competition at a social level can give rise to certain associated behaviors. Induced behavioral attributes include, but are not limited to: unhealthy ambition, innovation over others, serious risk-taking, and short-term decision-making. Additionally, gaming behavior and competitive advantage come into play. Gaming behavior refers to tactics or strategies employed to exploit loopholes or gain an unfair advantage within the rules of the competition. Competitive advantage, on the other hand, relates to gaining better people, materials, or information over competitors.

It is important to consider the potential consequences of a society that embraces competition as its socio-economic foundation. By accepting competition as a fundamental principle, a population may experience

consequences, including inequality, exploitation, and a focus on individual gain at the expense of common well-being. It is essential to recognize that all individuals are interconnected within a larger ecological system, where their actions and influence interact and have an impact on others. Fundamentally, all individuals are part of one ecological system of interacting influence.

A social system based upon the concept of competition will inherently generate the experience of scarcity, war, crime & corruption, inefficiencies, environmental harm, and a hostile social environment. And, past a point it will serve as a great hindrance to continued human progress and survival. Competition is inefficient and destructive - it is a force that increases entropy in a system.

The everyone-for-themselves paradigm, which maintains winners and losers, and arises out of a competitive environment, is adverse to a systems approach that recognizes interrelation, and thus, the necessity for cooperation of all elements that make up a system. If one element of a system begins to compete or attempts to dominate another element the system itself becomes unstable and begins to break down. In principle, all components of a system must work together to maintain the whole system. The human form is an organisation of about a million billion cells. These cells are specialised into many different types that team up to form systems. In the human system, the functions of the cells are produced by the cooperative activities of many specialised and differentiated components. Essentially, a community-type society is a large cooperation structure that is made up of individual cooperators.

After reading up to this point some people might state, "well, that all sounds nice in theory, but in the real world, its utopian, idealistic, and unrealistic". These challenges are once again addressed below:

1. Individuals, particularly children, get more than enough experience with competition without artificially adding more. Video games, television, and playful sports are just a few examples. It is the truly cooperative activities that are in scarce supply.
2. In a competitive society it is very helpful to have people reflect on that aspect of society. It is important to present information about competition just as one would present information about substance abuse or reckless driving, so that individuals are capable of recognizing it and thinking deeply about its premises. But, when people in early 21st century society say "society needs to teach children about competition", what they are really suggesting is that society needs to immerse children in competitive activities, which is a very different thing. Said form of immersion is more akin to socializing them to uncritically accept competition as inevitable or desirable. That is very different than helping them to think about the idea of competition, what they are doing when

they are competing, and the life ramifications of a competitive social and economic environment.

3. The acclaimed benefits of failure in competition are overrated. People who suggest that competing and losing is "good for you" because it leads you to pick yourself up and try harder next time are individuals who don't spend that much time observing the results of competing and failing, and they seem not to have great memories about their own childhood. The research finds that failure, typically when experienced by youth, teaches youth that they don't have the competence to succeed, and by internalized consequence, they become less likely to succeed next time. Being unsuccessful, which most people are in competitive encounters, is rarely useful in helping people to become more successful at the activity, let alone more excited about doing it.
4. Even if you disagree and think that failure can be useful. Failure doesn't necessarily entail losing, which is failing at a public activity so that someone else can succeed. Just as winning and succeeding are two different things, so too are failing and losing. There is no evidence that the particular version of failing known as "losing in a competition" provides any advantage in terms of children's ultimate development and should not be equivocated with the "challenge of learning".
5. Some people say that individuals, particularly the youth, "better just get used to competition for society is going to make them do it anyway [when they are older]". Not only does this sound a bit ominous, but what such a statement is essentially saying is that "people are going to do unpleasant things to you later so we have to prepare you by doing unpleasant things to you right now while you are here. Yes, competition destroys self-esteem, yes it undermines relationships, yes it gets in the way of excellence in many activities and it makes people less excited about the activities themselves, but people are going to make you compete later so start suffering now". When said, the statement isn't generally put quite the way it is worded above, but it is not that far from the actual rationale that people invoke.

Fundamentally, it is unwise to write the notion of competition into our conception of self (at any scale).

**APHORISM:** *Secrecy is security, and security is victory [in socio-economic competition]. Secrecy among a commonly interconnected population leads easily to maladaptive control by preventing the exposure of hidden agendas, and through breeding distrust, suspicion, and paranoia in the world*

## 13 Intrinsic motivation

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*A.k.a., Internally motivated behavior, self-determinism theory (SDT), self-determination, self-integrating response, intrinsic value.*

Intrinsic motivation is a basic requirement for human need fulfillment. Essential for both survival and overall well-being, there exists an inherent motivation or drive (a.k.a., intrinsic motivation) to meet and fulfill fundamental human needs. Intrinsic motivation refers to behavior that is driven by internal states or internal rewards. In other words, the motivation to engage in a behavior arises from within the individual because it is naturally satisfying to you. Intrinsic motivation is a type of motivation based in people's natural interest in various activities that provide novelty, challenge, and other desires. (Deci et al., 2010) Intrinsically motivated behaviors are those that are performed out of interest and require no "reward" other than the spontaneous experience of interest and enjoyment. (Deci, 1975) When intrinsically motivated, people behave freely and willingly with no external or intrapsychic prods, promises, or threats. Csikszentmihalyi (1975) described these behaviors as "autotelic," meaning, as the word implies, that they are self-directed. Intrinsic motivation entails curiosity, spontaneity, and interest. It is readily evident, for example, in the play, exploration, and mastery strivings of children and in the delight that accompanies those behaviors. (White, 1959) Fundamentally, society can be structured to support peoples own motivation and growth. The way to facilitate maximal motivation in people in the education and contribution (duty) phases of their lives is to create an environment that allows individuals to feel complete in their psychological needs for autonomy, competence, and relatedness (and, purpose).

Daniel Pink (2011) popularized the values of autonomy, mastery, and purpose in his book, *Drive: The Surprising Truth About What Motivates Us*. Therein, Pink presents the research that creative thought and action require something of more substance than punishment and reward (i.e., extrinsic motivation). Rewards undermine the intrinsic, inherent motivation all humans have naturally to begin with. Offering rewards and giving them after a behavior is a process of controlling another. When people come to feel controlled, they lose their own inherent motivation (i.e., their intrinsic motivation). Pink provides evidence that science has known this to be true for almost fifty years, and that in tasks requiring creative and autonomous thinking, incentives do not work at a practical level. In fact, incentives hurt productivity. Reward moves the focus from the 'task' to the 'reward'; hence, their studied hindrance of creative work. There are a lot of studies on the topic of effort with payment (extrinsic motivation) and without payment (intrinsic motivation). With payment, people think significantly about the reward. They are much less efficient at the task, because they are think about the reward while

completing the task -- they are thinking more about the reward then the task. Herein, it is easy to realize that the effectiveness with which someone does something is the primary intrinsic driver (i.e., motivator), not the amount of it done.

Pink (2011) explores the deep human need to direct our own lives, to learn and create new things, and to do better by ourselves and our world. This need is known as *intrinsic motivation*, and it is found at the juncture of three outcomes: autonomy; mastery; and purpose. Fundamentally, the understanding that Pink arrived at is that humans are capable of reaching their higher potential under conditions (both internally fostered and external structured) of autonomy, mastery, and purpose. Pink demonstrates that true values within humans are not penalty-centred, but rather centred around the notion of freedom-of-contribution.

Autonomy is a vital value. People want to feel that they have the freedom to choose what they do and how they do it. Mastery is an equally important value - to have enough access to information, experience, time, and energy to really feel that one masters and succeeds in resolving desired tasks, and learns desirable things. Purpose involves the idea that there is meaning, intention and sense of intimate relationship in what we do.

**NOTE:** Consider how habitat design involves regenerative design and intrinsic motivation involves the regeneration of desire, curiosity, and interest.

### 13.1 The intrinsic motivation values

*A.k.a., The intrinsic values, intrinsic motivation value sub-coordinates, intrinsic motivation sub-values, self-determination theory values.*

The primary self-directed value coordinates for adaptive fulfillment (in terms of intrinsic motivation) are:

1. **Autonomy** (self-determination).
2. **Competence** (mastery, knowledgeable & skilled, high ability).
3. **Purpose** (needs, goals and results).
4. **Relatedness** (connectedness) and **mindfulness** (mindful relationships) are a corollary to the prior three.

**NOTE:** It is wise to remain aware that the values of autonomy, mastery and purpose are not considered in high regard nor even applied in early 21st century society, based at every level on socio-economic extrinsic carrots and sticks.

Together, these values facilitate the structured expression of a self-directed state of motivation within an individual (i.e., intrinsic motivation). These value conditions might also be referred to as the necessary organizational "prerequisites" to [intrinsic] motivation

and self-stable internal development. In other words, they are orientationally stabilizing value states for the adaptive self-direction of consciousness and the development of a personality that expresses the qualities of self-esteem and self-efficacy [in its relationships with that which exists].

These values represent conceptual coordinates, and when rendered together, they maintain the potential for maintaining a self-directed and highly creative learning environment. Herein, it is in the desire for autonomy of experience [in the verification of existence], a mastery of the self [through accurate identification], and a meaningful purpose [to consciousness] that mutual coordination [of relationships] and "self-evolution" resides. These values are the progenitors of all true learning and adaptation, and they represent the expression of creatively inquired thought and a desire for constructive action. They are a necessary environmental orientation for the continuance of a purposeful and self-directed community, a community expressly moving toward its higher potential.

The values of autonomy, mastery, and purpose form a conceptual structure that allows [and maintains a decision space] for the free flow of inquiry, integration, adaptation, and decisive action within a larger cooperative system, the "uni-verse".

It is important to note herein that in self-determinism theory (SDT) these values conditions are considered basic psychological needs. Therein, basic psychological need satisfaction is assumed to represent the underlying motivational mechanism that energizes and directs people's behaviour. (Deci et al., 2000) Psychological need satisfaction is regarded as the essential nutrient for individuals' optimal functioning and well-being, as water, minerals, and sunshine are essential for plants to bloom. (Deci et al., 2000; Ryan, 1995) In SDT, three basic needs are distinguished: the needs for autonomy, competence (or mastery), and relatedness (or purpose). (Broeck et al., 2010)

Hence, at the social level of organization these concepts represent values, but at the level of the self (in self-determinism theory) they represent basic psychological drives (or 'needs'). Fundamentally, movement toward the fulfillment of these needs (as 'intrinsic motivation') requires a conducive environment [with a specific value orientation]. Together, the organization of the environment and the [e]motive desire to fulfill these needs facilitates community integration and environmental adaptation.

The motivation of individuals among a population could be categorized in the following ways:

- 1. Intrinsic motivation (intrinsically meaningful motivation, self-determined)** - motivation to fulfill human needs and internally set goals. Intrinsic motivation is motivation without the pressure of coercion or extrinsic reward. Intrinsic motivation is

self-determined.

- 2. Extrinsic coercive motivation (controlled motivation)** - for instance, "We are doing this, if you don't do this, or you do this other thing, you will be hurt/punished." Coercive motivation is motivation determined by an external authority.
- 3. Extrinsic reward motivation (controlled motivation)** - for instance, "We are doing this, if you do this, we will give you access or money." Reward motivation often includes a lot of coercive motivation; because, "if you do this, you will get the reward, but if you don't do this, you will be punished with less." Reward motivation is motivation determined by an external source.

**Note:** *Controlled motivation is motivation by force or seduction. And, there are a range of harmful consequences that come along with motivating people extrinsically (through rewards and/or punishments).*

People who are intrinsically motivated actually work much harder and smarter than those who are extrinsically motivated, because you are doing some activity for some goal that is directly cared about and immediately rewarding, because it is pleasurable. Intrinsic motivation involves self-direction, empowerment (self-responsibility, behavioral change tools), and socially cohesive cooperation.

**INSIGHT:** *Community needs people who can think and create independently. Community is a system that facilitates the development and sustainment of these qualities. Here, the idea is to find activities that inspire "you" and that "you" like doing.*

### 13.1.1 Autonomy

As an organizational [value] dynamic 'autonomy' represents the freedom to choose what "you" do and the environmental availability of having stuff to choose from (i.e., opportunities). Unlike self-determinism theory (SDT), which refers to the subjective experience of psychological freedom and choice during activity engagement, the definition of 'autonomy' as a value orientation refers to autonomy as a task characteristic. In other words, is the task freely chosen, and is there independence and discretion by the individual in scheduling the work and [by degree] determining the procedures used to carry it out? Herein, autonomy means allowing others to control how they organize and exert themselves, or work and learn. It is a form of pro-social motivation. In reference to task opportunity, autonomy also refers to whether or not the task is available to the individual desiring to complete it. (Hackman et al., 1976) In the sense of the value condition of freedom, autonomy is allowing others [the freedom] to take their own decisions, and not try to control the decisions of others. When there is autonomy frustration, people feel trapped, conflicted and/or

pressured.

Humans are naturally inclined to act on their inner and outer environments [when opportunities are available], engaging in and sharing of activities that interest them, which naturally involve progress toward personal and interpersonal coherence. In reality, we do not have to be pushed or prodded to learn and to act. Learning is a natural and freely expressive process, it does not require a forced or otherwise coercive relationship. Learning is intrinsic to conscious experience, although the drive can become inert under sufficiently adverse conditions [by degree of individual sensitivity to those conditions]. The blossoming and cyclical sustainment of a desire to learn comes from within the individual; it is intrinsic to adaptive organisms.

Autonomy may also be discussed in terms of how to avoid infringing on autonomy, which can be an extremely subtle act. Anytime someone is asked or commanded to do something, then s/he loses autonomy [by fractional degree over time]. An extreme case would be that as soon as someone is asked to do something, s/he becomes agitated and dismissive about doing it — even (or maybe especially) if s/he was already going to do it.

In SDT, autonomy represents individuals' inherent desire to feel volitional and to experience a sense of choice and psychological freedom when carrying out an activity. (Deci et al., 2000; deCharms, 1968)

As a state of the being of the self, autonomy represents an individual's desire to be self-directed - to direct one's own life, behaviors and experiences. It is the felt experience of a sense of volition and psychological freedom. It is a component of self-directed freedom.

Autonomous motivation (or "intrinsic motivation") has proven to promote greater conceptual understanding, enhance persistence at challenging activities, generate higher "productivity" performance, reduce burnout, and increase levels of psychological well-being. In a community it involves the effective organization of *task, time, technique, and team* to maintain an environment where individuals are free for the meaningful. For there to exist any form of meaningful engagement, there must exist autonomy. Autonomy in the expression of an individual's highest creative and exploratory potential, which is essential for optimal well-being in any culture. Hence, autonomy must necessarily include the autonomy to verify the identity of existence for oneself, which means that there needs to be a baseline quality-of-life that facilitates equal access to learning experiences.

It is relevant to note here that although autonomy, as an intrinsically motivated task characteristic, contributes to feelings of psychological freedom, people might also experience autonomy satisfaction when they depend on others and even when they follow others' coercive requests, orders, and commands. For example, employees (Read: someone extrinsically motivated) may follow-up a "request" from their supervisor (and thus fail to be independent), but nonetheless act "willingly" because their supervisor provided them a meaningful rationale for doing so. (Soenens et al., 2007)

### 13.1.2 Competence (or mastery)

**NOTE:** '*Competence satisfaction*' allows individuals to adapt to complex and changing environments, whereas '*competence frustration*' is likely to result in a sense of helplessness (poor self-efficacy) and a lack of motivation. (Deci et al., 2000)

Competence is the urge to get better and better (i.e., improve) at something that matters, with the potential of mastering it -- it is the opportunity and freedom to build deep competency and expertise, and ultimately, the optimized efficiency of intentional movement. Competence (mastery) is an emergent continuum in itself leading from basic competence through to the highest level of competence, '*expertise*'. Expertise is complimented by the autonomous expression of the self to consistently inquire and to learn new things - getting better through practice and more refined through discerned openness - constantly evolving and improving. When there is competence frustration, people can feel like a failure.

The need for competence is defined as an individuals' inherent desire to feel effective in interacting with the environment. (Deci et al., 2000; White, 1959) From the perspective of the self, it involves self-development as becoming more knowledgeable and/or skillful. It involves curiosity and exploratory motivation, and it requires that the 'self' actually *do* things and *use* things (as well as experience some degree of challenge) in order to develop itself. As individuals, we develop greater self-esteem through the mastery of (and competence at) challenging tasks, which requires environmental opportunities, internal goals, and social support (Read: social coordination). The drive toward competence and mastery involves the propensity to explore and manipulate the environment, and to engage in challenging tasks to test and extend one's skills.

Herein, outcome expectancies and self-efficacy represent *acquired cognitions* with respect to one's capacities to successfully accomplish specific future tasks. Whereas, '*competence satisfaction*' refers to a more general, affective experience of effectiveness which results from mastering a task. Despite these conceptual differences between self-efficacy and the need for competence, both are likely to be correlated at the empirical level. (Broeck et al., 2010)

Mastery also describes the pleasure someone gets from doing what they love and following their passion. This can be seen when someone is so absorbed in a task that they are in "the zone", or what is commonly known as experiencing a state of 'flow'. 'Flow' is a term used to describe the state of body-mind when time seems to disappear and an individual is immersed fully in an enjoyable task [that movements become near effortless]. At its peak, expertise becomes an empowered state of intentional flow.

Without focus and self-discipline, without entering a state of flow, there is no mastery and no development

of a skill (i.e., no "art"). Herein, it might be wise to reflect upon "art" that is displayed and sold for its shock value and the dramatic emotive reactions that it can draw out of a crowd versus are as a skill. When skill is removed from art, then "art" becomes almost patronizing. For instance, the "liberating arts" were originally supposed facilitate a free movement into ever greater states of flowing mastery.

### 13.1.3 Purpose

**INSIGHT:** *Motivated people like to get better at things. When people are curious or otherwise self-motivated, they will even do tasks for free.*

Purpose is the yearning to do what we do in the service of something larger than ourselves - to do that which is intentionally meaningful. It represents an understood connection and relatedness to something greater, which arises through the relation of meaning. Purpose provides a context for autonomy and mastery wherein it engages intention and focus.

Purpose addresses the situation that even when we get what we want (i.e., achievement), it may not be what we need (i.e., meaningful fulfillment). Intentions can orient away from fulfillment, and they can orient toward it. A purpose represents a known direction, a direction upon which intention is placed, and an understanding of why it has been placed along that direction. When understanding accompanies intent, then there is likely to exist fulfillment, but when intent is devoid of understanding, then there is likely to be deception and suffering. When there is purposeless frustration people feel bored and lazy.

**QUESTION:** *If that purpose which intent is placed upon isn't a higher potential of existence and of fulfillment, then what is it?*

### 13.1.4 Relatedness

**INSIGHT:** *Treating people with dignity means treating them as ends in themselves, rather than as simply means.*

The need for relatedness is defined as individuals' inherent propensity to feel connected to others, that is, to be a member of a group, to love and care and be loved and cared for. (Baumeister, 1995) The need for relatedness is satisfied when people experience a sense of belonging and develop close and intimate relationships with others. (Deci et al., 2000) In any society it is important for people to be mindful of what they are relating to, how they are relating, and why they are relating. When there is relatedness frustration people feel lonely and left-behind by others.

## 13.2 Intrinsically and extrinsically driven motivation

**NOTE:** *By working for others [for extrinsic*

*reward] individuals drain their own passions. Therein, pressure from authority is not motivation; it is coercion. Doing something for either reward or to avoid punishment is a form of external social control. Further, to obey or to be punished is not respectful of the conceptually conscious beings that humans are.*

Intrinsic motivation relies on the fostering of existing internal sources of motivation rather than driving motivation externally (i.e., extrinsic motivation). Extrinsic motivation refers to behaviors that are performed instrumentally to attain some specific extrinsic reward, externally desired outcome, or outside behavioral reinforcement. Generally, extrinsically motivated behaviors are ones that would not occur spontaneously and, therefore, must be initially prompted by a reward contingency or other instrumentality. When we are intrinsically motivated we pursue tasks for the love of them alone. With this understanding in mind, motivation may be perceived as a continuum from amotivation (no motivation) through to intrinsic motivation, with extrinsic motivation in between. (Deci, 2004)

Extrinsically motivated work is inherently alienating. The worker does not feel intrinsically connected to the work. Where there is only extrinsic motivation, the worker does not feel a part of the work, and the human need for contribution is not fulfilled. And hence, a reduction in joy [in life]. Control through extrinsic motivating factors deprives the individual of appropriate self-autonomy. The subsequent repression and denial of the conception of a set of discoverable needs (intrinsic drives) further inhibits motivation to cooperatively get needs met.

One typically delightful example of intrinsically motivated behaviour is children playing. In play, children are often wholly absorbed in activities, experiencing a sense of interest and joy as they manipulate objects and explore new environments (as they discover and work with what they have discovered); therein, children are in a state of flow, which early 21st century society jerks them out of with its structures, institutions, and limiting [cultural] beliefs - through socialization and normalization to conditions which are aberrant to normal intrinsic functioning.

Through the naturally autonomous act of play, children learn. Community can be designed to facilitate the emergence of systems that maintain a state of flowing experiential engagement with existence, and it does this [in part] through the structuring of meaningful interrelationships between the lives of participating individuals. Everyone has the capacity to learn through play. Play represents a mechanism that we maintain throughout our lives, and through which we can come to verify existence and integrate our experiences into ever greater folds of potential exploration and creation. However, this mechanism can become obfuscated. In early 21st century society it is often obscured through internalization of an external conception of limitation, such as when our autonomy has the appearance of, or has been quite literally, taken away.

Play the near opposite of extrinsic motivation and reward. Extrinsic reward diminishes intrinsic motivation and creative problem solving. (Deci, 2004) According to the research (Pink, 2011):

1. Extrinsic motivators work only in tasks requiring repetitive and regimented mechanical skill. These are technical tasks that could be automated.
2. Once a task calls for even a rudimentary amount of cognitive skill, a larger reward often leads to poorer performance.
3. Extrinsic motivators, which Pink refers to as "if-then" rewards, often destroy creativity and performance. They are likely to create dependence.
4. The key to "high performance" isn't rewards and punishments, but rather it is the individual experience of intrinsic drive - the desire to do opportune things because they have meaning.

Extrinsic motivation, when driven by the classic contingencies of food and financial reward, grades, and arbitrary punishment is often experienced by the individual upon which the contingency is being heaped, as force and control - that is, people feel pressured through the seduction of rewards or the coercion of threats, to do a task. Over time their behaviour tends to become dependent on the contingencies, so they do not do the behaviours if the contingencies are not operative. In other words, when the extrinsic motivator ceases to be present, the behaviour will cease to be present; and, this has extreme consequence in the case of life-long learning. Rewards and punishment in learning (i.e., schooling) essentially de-couple the learning process from desire the natural desire to learn [and couples it to authority]. Wherein, individuals are no longer self-directed and become more obedient to authority.

We do not need extrinsic incentives to develop and "evolve" ourselves. The science clearly shows that extrinsic motivators act destructively toward a host of individually and socially beneficial qualities, not the least of which is that of creativity and efficiency. Extrinsic motivators represent a decrease of efficiency because they are more often than not applied in an environment where information is purposefully withheld or otherwise obfuscated (e.g., schooling).

Unleashing one's passion for their interests is the key to "success", not dangling a carrot and threatening a stick. People are conditioned in early 21st century society to believe that without force there would be no learning and no effortful work toward economic and social "development". Not only does the application of extrinsic motivators show a lack of social intelligence and an ignorance of our scientific understandings of our own motivations, but it concurrently shows a lack of respect and dignity for those to whom it is applied.

Humans will resent the stick, even when it is threatened, but never used. Carrots and sticks lead to short-term gain (i.e., industry profit) for long-term pain

(i.e., ecological stability and healthy functioning). Pure, deep engagement and intrinsic motivation fulfill human beings. Fundamentally, human beings have the potential to enter into a state of fulfillment when they are engaged in activities that are desired.

The harm that a carrot and stick philosophy does is much more impactful than any minor progress it might enforce. It is better to:

1. Put detailed feedback signals in measurement systems (and not in incentives);
2. Focus on what is desired in a way that engenders intrinsic motivation; and
3. Put in place an "approximately aligned" system focusing on fairness, and not on external incentive.

Fundamentally, "toxic external motivators" such as arbitrary threats from authority, financial incentives, grades, or other sticks and carrots, are detrimental to long-term, self-motivated behavior. As Edward Deci concludes in, *Why We Do What We Do*, intrinsic motivation is natural to humans, but it is a fragile flower: it requires an atmosphere that nurtures our needs for autonomy, mastery, and purpose.

As a community, we understand the need for enabling the natural motivation and learning processes of individuals, and thus, empowering their creativity and their curiosity. We understand the need to show each other the tools with which we can all use to improve ourselves. In community we seek to direct our own lives, build deep competency, and develop meaningful connections.

As a society, do we want the things individuals desire and fear used as levers of control, because that is what punishment and rewards achieve. Punishment and rewards teach acquiescence to power, to the idea that "might makes right". Is that a good lesson for anyone? Who says, "you've shamed and punished me into a more empathetic and diligent mindset." None of us enjoy the things we desire used as levellers to control and social engineer our behavior. And fundamentally, rewards are things we desire being used as levers to control our behavior, some with more damaging consequences than others.

**NOTE:** *Intrinsic motivation provides momentum for further learning as well as greater confidence in learning. Wherein, the curiosity of consciousness drives exploratory behavior.*

### 13.3 The mechanistic (behavioristic) perspective

Under the mechanistic perspective, once "objective" data have been collected, theory becomes the process of offering a plausible and testable explanation for the observed behaviors. Mechanistic theoretical interpretations take two forms. In one case, they link one or more primary qualities of behavior to specific

antecedent conditions. For example, the child behaves in a certain way because of the way the parent behaves (i.e., conditioning), and the adult works harder because the company rewards productivity with salary increases (i.e., extrinsic motivation). In the other case, internal mechanisms are hypothesized as a mediating link in the chain between antecedent cause and subsequent behavior. These internal, mediating events are not seen as causing the behavior in the same way as above (the efficient cause), but rather, they are the physiological, neurological, or genetic factors that make the behavior possible (Read: a material cause). In either case, a direct link is made between the cause and the effect.

To the simplistic mechanistic perspective, the secondary qualities of emotions, motives, aspirations, etc., are often of little interest to mechanists, because they are less easily observed or reliably inferred, measured, and located. Mechanists would not argue that people do not experience these things. However, they argue that secondary qualities are best studied and understood by focusing on behavioral change and the efficient and material causes of this change.

This issue is noted here because the systematic reduction of human behaviors to antecedent causes has been attempted by all social sciences in the twentieth century and has produced their dominant paradigms (Skinnerian behaviorism and Prussian schooling, as just two examples). Skinnerian behaviorism and the Prussian schooling model (i.e., the behavioristic approach) focus on extrinsic motivation over any form of intrinsic motivation.

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**TABLES****Table 20.** Value System > Intrinsic Motivation: *The self-determination continuum.*

	Non Self-Determined		Semi Self-Determined			Full Self-Determined	
	Amotivation	Extrinsic Motivation				Intrinsic Motivation	
Regulatory style	Regulation	External Regulation		Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Source of motivation	Impersonal	External		Somewhat external	Somewhat internal	Internal	Internal
Motivation regulators	No intention Incompetence Lack of control	Compliance External rewards or punishments	Ego-involvement Approval from others	Valuing an activity Endorsement of goals	Congruence Synthesis with self	Interest Enjoyment Inherent satisfaction	

**Table 21.** Value System > Intrinsic Motivation: *Intrinsic and extrinsic forms of motivation.*

Source	Type	Accounting	Societal Structure
Intrinsic	Self Motivation	Human needs	Contribution structure
Extrinsic	Coercive Motivation	Punishment	State structure
Extrinsic	Reward Motivation	Reward	Market structure



# The Social Approach of a Community-Type Society

Travis A. Grant,

Affiliation contacts: [trvsgrant@gmail.com](mailto:trvsgrant@gmail.com)

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Last Working Integration Point: *Project coordinator integration*

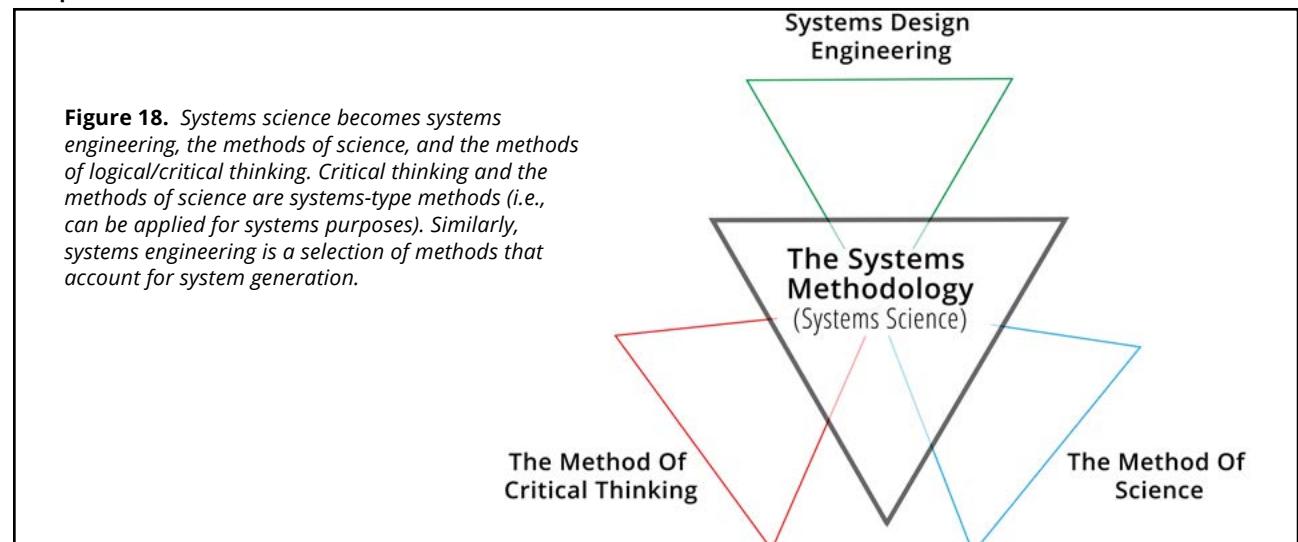
**Keywords:** social approach, societal approach, social methodology, societal methodology

## Abstract

All information with a social reference may be approached in such a way that the result is more information coherence. All directions (solutions) are approached (resolved) through the selection of methods (tools) that are intended to reduce uncertainty and incoherence. Given the totality of the methods available, it seems optimal to select a set of methods that align with a basic patterning language, the systems methodology. There are methods that reduce uncertainty (e.g., experimental science) and there are methods that increase understanding (e.g., rational science). In order to develop a unified societal approach, a unifying set of methods is required. At the individual level there is critical thinking, at the social level there is rational explanation, and at the technical level there is experimental validation. Critical thinking is required to reduce conflict during self-integration; rational explanation is required to reduce conflict during social-integration; and experimental validation is required to reduce conflict at the societal level.

Hence, the necessity to develop and construct a societal-level community.

## Graphical Abstract



# 1 Introduction

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**INSIGHT:** *Through a common, coherent, and verifiable approach humanity can come to better understand itself, and better organize for everyone's fulfillment.*

A community-type society utilizes the following methodology and methods, which are mutually informed and formalized. Together, the methodology and methods detailed herein are known as "an approach" -- they are essentially thinking tools (or, tools for better thinking). (Dennet, 2013) The approach herein describes the way in which a community-type society describes the world and resolves the problems encounter while individuals are acting together within it. This approach is subdivided into three related methodologically understandings (or, tools):

1. The systems methodology (the systems approach)
2. The method(s) of science (the scientific approach)
3. The trivium method of critical thinking (the critical approach)

Together, the approach leads to the discovery and operational integration of patterns of information useful for mutual, global human fulfillment. Wherein, the systems methodology concerns patterns, the methods of science concern discovery, and the critical methods concern integration and unification.

The **systems methodology (a.k.a., systems science, the systems approach, etc.)** is the principal conceptual logical language/linguistic filter through which a population perceives and conceives of reality, and with which it may construct a [creatively synthesized] decision space with the ability to integrate discoveries, deal with uncertainties, and act intelligently upon the real world for everyone's mutual fulfillment. It is through thinking systematically that patterns and relationships appear that allow for an integral approach to action. Systems science is the science of the complexity of a whole in its actual operation; as opposed to science as a reduction of the whole to its parts to see how the parts act in isolation. Systems thinking is the semantic structuring used to communicate geometric thought and manifest geometric conceptions. A systems methodology logically selects for methodical approaches that are systematic in their form - they logically follow systems-based principles. In other words, the two sub-approaches selected for, are thus necessarily, systematic in their form.

The two systemology selected methods are **the method(s) of science** and **the critical method (a.k.a., the trivium method and critical thinking)**, which represent the two primary approaches by which individuals inquiry, acquire, verify, and integrate knowledge [in a systematic form], and through which everyone may all evolve a more accurate and fulfilling semantic structure.

As a population's understanding of the natural world

evolves, so too will its methodologies and methods, and the language through which it perceives and understands itself in the real, natural world. Through the use of these holistic investigatory/refinement processes individuals do not "make their conclusions"; instead, they arrive at understandings by examining the information available, and integrating it in a systematically adaptive and non-contradictory manner. It is this approach that brings coherency, clarity, and focus to a decision space and to action - to how a population designs and re-design systems to fulfill its needs.

Overall, this common approach might be considered an "impartial" approach, for its application diminishes attachment to anyone or anything that emerges as an identifiable diminisher of human fulfillment. When applied as a single unit it may also be said that it is a "person independent" approach, and not an administratively bureaucratic (or "political") approach (i.e., it is apolitical). It is not an approach that relies on a single person or social power hierarchy; instead, it is an approach that maintains an essential alignment with the Community's orientational value system. The approach is basically a universal meta-language that allows people who speak different practiced methods to speak to each other. It is a common ground that allows variation.

The application of inquiry as described herein leads to an accurate clarification of reality, and not attachment to anyone's subjective reality. The methodology and methods represent a means for perceiving greater states of commonality between all individual humans. Here, the population of a community-type society recognizes that clarity is the basis for quality [relationships], in reality. It is with clarity and coherency that one acts with [social] conscience, and without cause for fear, guilt and shame of any kind.

Everyone may live a better life through a better [common] approach to perceiving and shaping the material world. A comprehensive and integrated approach is an essential design element in the re-iteration of a real world community. Humans have been shaping the physical environment on Earth for thousands of years, and have become particularly skilled at it the last 100 years. Humanity can now use what has been acquired and what is known to shape a better and more fulfilling world.

Fundamentally, a community is a lifestyle-based approach [to life]; hence, the totality of the understandings and approaches described herein become necessarily integrated into a life (and lifestyle), which is in part reflected by the organization of a society's social, decision, lifestyle, and material systems. It is always wise to question claims of understanding and utilized approaches, which can be very difficult under some societal contexts, wherein they are [purposefully or otherwise] not made explicit.

The formalized methodical approach described herein is designed to facilitate everyone's fulfillment, while resolving human belief, personal projection, bias and opinion, and conflict through the arrival of

accurate understandings and optimal decision [space] designs that select-out decisions aligned with a stated purpose. The approach detailed herein is a tool for the cooperative creation (i.e., "co-creation") of a regenerative and fulfillment-oriented human community.

There exist a multitude of tools in the world. But, for any given task or situation there are a finite number of tools that will generate a desired outcome (e.g., a higher potential of common fulfillment). Hence, there are a limited number of "right" tools [for any given context or problem]. And, if the right tools aren't in the hands of individuals, then individuals are likely to become someone else's tool, or the tool of authorities. A community needs the right tools in every individuals hands if it is to sustain an environmental system that facilitates the development of individuals' inner higher potential among a community that facilitates or hinders their potential.

Some tools are flashlights and others are maps - some tools help one discover and observe what is there and other tools help one navigate through what is there. Essentially, useful tools provide the ability to navigate freely (i.e., to navigate a territory with freedom because one can see a map). Herein, tools can help to convert even the most painful of experiences into wisdom. And, these tools must be accessible to (or "given to") everyone so that everyone can [literally and figuratively] lift.

Individuals can evolve themselves and self-direct their own lives if they have the appropriate tools. Without tools [and an appropriately designed structural environment] people fall right back into the exact same behavioral patterns to which they had been conditioned and are habituated.

The approach detailed herein might also be considered from one final perspective. It represents the drive toward the state of a clear and coherent mind, a mind without contradictions - a mind capable of navigating a common territory for its own fulfillment. The conceptual-linguistic tools described herein facilitate a state of mind where all the information in the mind is a part of a whole (with little or no contradictions). And, when cognitive dissonance appears a mind must have the tools to investigate it, to open the "gift" [of dissonance] and discover its contents. Cognitive dissonance involves the experience of information that contradicts (i.e., is not / cannot be integrated) with a pre-existing (or "pre-set") worldview. This is why the systems-view is a different type of "paradigm" -- if it is to even be called a paradigm. The systems approach represents a view toward open and active integration through inquired discovery -- it is not a philosophy, it is philosophy.

If a community is to survive and thrive, then these tools must be made explicit. In truth, there are so many aspects to developing as a full human being that guidance facilitates one's fullest fruition (or expression) into a highest potential human. Most people in early 21st century society do not get that guidance, and hence, it is up to them to try and uncover it for themselves. The tools

presented herein provide a structure for informing one's own guidance system so that it points in the direction of one's own, which is ultimately, everyone's, fulfillment.

The approach described herein is ultimately useful in transcending variants of opinion, politics, affordability, or any -isms. Instead, life is understood in terms of living systems that make up an integrated whole. Life is a seemingly infinite regression of nested systems, a seamless unity of which none are "free and independent", patterned throughout nature as [interconnecting networks of information; the "matrix"]. All organisms are systems composed of systems connecting to form systems.

Individuals may follow this approach because they want their internal model of reality to match the actual reality as best as possible. This is important because every belief someone has affects many other beliefs which are also had; hence, the saying, "I want to believe as many true things and as few false things as possible." Herein, individuals need both parts of that statement. Beliefs inform values, which inform actions, which have consequences for oneself and for everyone else [in society]. If society is operated based upon a flawed model of reality, then individuals are going to make bad decisions, and reap the consequences of that across the society.

## 1.1 Methodology versus method

The terms 'method' and 'methodology' are sometimes used as though they were synonyms – they are not. They may be similar in that they are tools in the form of processes and filters through which objective reality is perceived and acted upon. However, the two words carry two separate and distinct meanings:

1. 'Methodology' is the study of methods and is the rationale, philosophical assumptions, veracity, or logic underlying a process and the selection of a method(s). Adding the suffix "-ology" to a word implies the underlying logic or logos of a word. When it is added to the word 'method' it implies the underlying logic and selection of a method. Logos is Greek for "logic of" (e.g., biology, psychology, methodology).
2. A 'method' is a specific process or set of techniques for accomplishing or approaching something. Thus, a method is an ordered way of doing something, a process or procedure. Strategies for gathering data and means of testing hypotheses are methods, not methodologies.

This passage from the American Heritage Dictionary (1992 edition) clarifies the difference:

*In recent years ... "methodology" has been increasingly used as a pretentious substitute for "method" in scientific and technical contexts,*

as in "The oil company has not yet decided on a methodology for restoring the beaches." This usage may have been fostered in part by the tendency to use the adjective "methodological" to mean "pertaining to methods," inasmuch as the regularly formed adjective "methodical" has been pre-empted to mean "orderly, systematic." But the misuse of methodology obscures an important conceptual distinction between the tools of scientific investigation (properly "methods") and the principles that determine how such tools are deployed and interpreted — a distinction that the scientific and scholarly communities, if not the wider public, should be expected to maintain.

## 1.2 The importance of organization

**INSIGHT:** A common ground, consensus reality, must exist for the organization of a community-type society.

Organization creates an infrastructure for the facilitation of individual and social development toward a higher potential state of fulfillment. Therein, organizational tools can facilitate integration and adaptation. In concern to information, organization refers to placing information into a visual structure. It leads to the ability to process data (or experience) in a useful way. This is particularly important at the social level. A community-type society involves everyone in the society sharing a similar model while participating constructively together for mutual fulfillment. Therein, a consistent method[ology] is productive for dealing with and organizing information and activities.

Both a methodology and a method are a type of model. A model is a structured means of storing and working with information. Models are useful for integrating information and identifying connections. Therein, structure aids in handling larger and more complex information sets. Structures with more coherency extend a populations potential. And herein, appropriate tools facilitate in the freeing of oneself from illusion and artificial limitation.

Social organization and re-organization enables effective social cooperation and positive social change. Therein, organizational differentiation is the unbundling and re-arranging of activities within an organization. And, integration is re-grouping and re-linking them. The need for integration arises in the face of environmental complexity, diversity and change. The need for organizational differentiation enables flexibility and adaptation.

Many organizations in modern 21st century society, even those that appear to act beneficially, divert the mind from seeking and understanding a more truthful (Read: real world) position, to instead, support their particularly limited positions. Organizations turn "evil" when the organization starts to serve itself instead of serving all. The most notable examples of these forms

of organizations are public relations firms, political strategists, all forms of advertising and marketing, lobbying firms, charities, special interests groups, the media, etc.

## 1.3 Unity of approach across society

Unity is simply a natural outcome of increased interconnectedness. Having a society that is essentially alike in its social direction, values, and approach is not a good and useful thing, if not a necessary component of a functioning interrelationship. It is valuable to have a common approach to systems that could benefit humanity's common fulfillment in a common existence. Among community, it is possible to observe both the uniqueness and interconnectedness of every individual. And at the social level, it is possible to observe the unity by which socio-technical problems are approached and resolved.

A unified approach is required to sustain a common navigational trajectory across all of humanity. A single way thinking and of approaching information is essential to make everyone more successful across the [societal] team/group. A community-type society utilizes a common structural approach, a common semantics, and common kinds of models. This commonality allows for an efficient means of communication across members, and facilitates the common understanding of anyone's work. When there is a common understanding surrounding anyone's work and its application to society, then work is also traceable back to a purpose or structure.

A systems thinker looks at all of the pieces of an engineered object, and not just one piece. If a system's engineer is wrong, then people may be hurt, and or, die (or at a societal level, people may suffer unnecessarily). It is possible for engineers to produce faulty engineering and to operate socio-technical objects and technologies in a faulty manner. If an engineer does not have the design right, or operation right, or is not really objective to all useful information, then the system that the engineer is building will have a higher likelihood of failing or operating unexpectedly. There is one thing humanity ought to be certain around, and that is the engineered societal system that it has built itself within. A community-type societal approach facilitates humanity's certainty about its societal system as it conforms to a set of expectations about the cause and effect nature of a natural [law/reality] system.

**INSIGHT:** Similarity may be beneficial, and contrast and variety may lead to growth and expansion. Therein, dissonance is acknowledged in its ability to produce a movement toward resonance and change [if approached appropriately]. And, harmony is acknowledged in its ability to reduce conflict and amplify fulfillment.

## 1.4 Approach avoidance

**INSIGHT:** *One will never fully discover who one is, or one's potential, unless one continually re-arranges one's thinking to accommodate new evidence through new experience.*

Procrastination is a form of approach avoidance [complex] wherein someone wants to do something but is avoiding doing it. However, forcing someone to do something, and then, when they become lax in doing it, claiming that they have a "procrastination problem" [and labelling it as such], is disingenuous.

Although identification facilitates contextualization and may lead to greater clarification (and better decisioning), "labelling" can have its own tyranny -- labelling can be disabling. In truth, individual identity is partially fluid and responsive to the circumstances of which it becomes aware. It is a reflection of an individual's experience in and at the moment. Herein, labelling can become a false identity (e.g., "my town", "my county", "my State", my "team") and create layer upon layer of illusion and confusion.

Yet, there is a body of knowledge that views the world systematically and adaptively, and where labels are known to have the great potential for misdirecting people from perceiving and thinking systematically -- for following human constructs out of alignment with truth as opposed to following the further emergence of natural evidence. What is wanted as a mutual approach, is a clear perception that is being dealt with is a system, and not with bits of systems.

## 2 The systems methodology

*A.k.a., The systems approach, systems science, systematic approach, systems thinking, pattern thinking, intelligence thinking.*

The systems thinking methodology (or systems methodology) is a perspective, a specialized language, and set of cognitive tools through which it is possible to view the world and come to comprehend how parts of a whole relate to and influence one another. It is sometimes also called "systems theory", the "systems worldview", a "solution-orientation" and the "systems paradigm". Systems thinking is a way of understanding reality that emphasizes the relationships among a set of parts, rather than the parts themselves. Systems thinking is a set of cognitive skills that can be developed and applied to more precisely understand and create within a real world. Systems thinking enables someone to solve novel problems, identify root issues, acquire comprehensive understanding, and change the world with certainty and mental power. Based on a field of study known as "system dynamics", systems thinking has practical value in describing the natural world, and it is a requirement in the engineering of functional technologies. The systems methodology includes a specialized language and an approach to modeling and problem solving that recognizes that problems cannot be solved in isolation and apart from their impact on the rest of the system; and that the attempt to craft isolated solutions that ignore existent identities and interrelationships only leads to greater problems elsewhere. The systems approach results in a depiction of the underlying knowable information structure driving a problem [involving the system and its environment]. An emergent systems approach facilitates human understanding and development of what is possible, to serve human fulfillment and to caretake the ecological lifeground. Systems thinking is concerned with understanding and interacting in ways that are structured upon the principles and concepts of the systems "paradigm". Every paradigm structures itself along its own principles and concepts.

A "paradigm" is an interlocking set of ideas that seem to support themselves, claiming to refer to the way things are truly ordered and organized [in reality]. A paradigm is represented by the dimensions of a context (or "field"), as limited by parameters that inherently predict one's perception of reality within that context of experience. A paradigm is generally a definition of one's perception of reality according to its limitations. Wherein, perception can be expanded and constrained. Some paradigms exist in a less aware state, a constrained state of perception, and behave in a manner that reinforces that state [of limitation]. In these cases, paradigmatic tools often become weapons for use against one's own true fulfillment. The participants in a paradigm, who do not recognize systems thinking, are unlikely to know and to understand that they are in a paradigm. When

"you" grow up within a paradigm, there are some very fundamental things about that paradigm that become imprinted upon "you". "You" become influenced by and the product of those ideas. Those concepts become the grid – the framework, the reference – through which "you" operate and, at some level, assume to be right.

Systems thinking considers the similarities between systems in terms of a set of common systems concepts, principles, and [contextual] patterns. In systems thinking context matters. The systems methodology is a language, a "mindset", for understanding how things work that extends beyond discrete and isolated elements to look for patterns and underlying relationships. Figuratively speaking, "it is a means of connecting dots". Implicit in this worldview, this rationale, is the understanding that interrelationships form into living and emergent ecological systems, which are responsible for the manner in which the natural world operates. At the planetary level, the level at which humans populate the planet, the systems methodology perceives the Earth as one finite, dynamic and integrated living system-design.

A systems approach to societal problems looks at root causes and resolves an executable solution is a synthesis that intends to model the way the world actually (i.e., factually) works, or could work, and is most likely to produce optimal, global human need fulfillment. Herein, the systems methodology gives a way to see through chaos and randomness, and understand complexity and probability, by exploring the properties, dynamics, and interrelationships of [ecologically] nested real-world systems.

All questions about the universe are asked within the bounds of a set of understanding of the universe's organization. Humanity currently perceives the universe as organized at the highest level, like a system, and thus, the methods that are used to answer questions about the universe, and lives within it, follows a systems-based approach, which is a paradigm (if it is to be called such). When the statement, "Tell me more about the universe and the principles [scientific/technical], concepts, and patterns of which it is composed", is proposed within the bounds of systems thinking, then the response is a series of emergent systematic processes (i.e., the methods of science) by which the observer can come to actually know more about the universe and its principles. Similarly, when the statement, "Tell me more about how the universe may be more approximately and certainly observed", the response is another systematic process (i.e., the method of critical thinking). Critical thinking exists to resolve (or remove) contradiction and clarify discovered relationships, and thus, improve alignment with objective, universal reality. Both of these sub-system methods are selected for by the logic of the systems methodology, and they enhance the predictability of the outcome(s) of decisions - they facilitate a more certain [system] state-dynamic of existence and make everyone more comfortable with any uncertainties. They are applied to increase human certainty of the world and human fulfillment within the world, which is seen as an

emergent system.

Uncertainty often breeds fear, inhibiting an informed response and leading to hasty reactions. It is possible to clarify and remove uncertainties by applying a method(s) for discovery, dissonance removal, and integration. A consistently verifiable method leads to greater consistency of thought and action in life, and eventually to a consistent socio-economic process for organizing humanity's highest fulfillment.

We can only concede to the obvious: that just about everything in the world [where a relationship exists] would seem to be some sort of system. And, this understanding transforms our perception; it becomes a universal worldview. What is the difficulty with having a homogeneous worldview toward everyone's higher potential well-being and human fulfillment in a "universe" of expanding knowledge? This is "big picture" thinking; this is the integration of all aspects of the self; this is thinking "outside of the box" or "lateral thinking"; it is a form of universal creativity and the dimensional understanding of patterns. This capacity resides in everyone, it just requires a [more] truthful (and honest) environment in order to emerge as an approach to the organization of society.

*"Why questions about objects called systems cannot be answered by the use of analysis. Answers to why questions are called explanations, and the product of explanations is understanding. Science produces no understanding, it produces knowledge and verification. Because the product of analysis is how things work, never why they work the way they do, a new way of thinking was needed to provide explanation, and therefore, understanding. Explanations always lie outside of the system being analyzed, never inside it. Analysis has you in the system, identifying how it works and providing knowledge, but not understanding. Synthesis provides explanation to the behaviours of a system."*

*- Dr. Russell Ackoff*

To understand any system, including the system of systems thinking itself, one must understand that an information supra system (or "supra-set") cannot be defined from one of its subsystems (or "sub-sets") -- it is logically impossible. In 'systems thinking' this is an axiomatic principle. The subset does not have the information inside of itself to define the superset; the subset is a creation of the superset. A subset is only a partial component of the larger set.

Systems engineering is the core application of the system approach that focuses on how to design and operate complex systems; systems engineering concerns itself with component parts and also with the whole system in order to ensure certainty. As such, it is sometimes referred to as a holistic approach because it considers the whole.

**INSIGHT:** *The balance between overestimating*

*a problem and underestimating a problem involves systematic critical thought, which requires detachment from belief and presumption about the nature of the system.*

## 2.1 What is a system?

**NOTE:** *A system is unifying by its very nature; a system is a unified structure of parts.*

A system is defined as an interacting or interdependent group of items forming a unified whole to achieve a common goal. A system is a network (set or group) of connected, interacting and interdependent components (elements or parts), including their relationships and qualities, which work together for a purpose, and form an integrated whole. In other words, it is a functional, physical, and/or behavioral related group of regularly interacting or interdependent elements; a group of elements forming a unified whole. Each of the interrelated components of a system has a clearly defined [conceptual] boundary that works toward the attainment of a common [system's] goal by accepting inputs and producing outputs through an organized and structural transformation process. Therein, 'feedback' is data about the performance of a system. And, 'control' (or 'logic') is the component that monitors and evaluates feedback and makes any necessary adjustments to the input and processing components to ensure that a proper output is produced (i.e., an output aligned with the system's goal(s)). A system accepts inputs, over which it has no direct control, and transforms them into outputs. In the simplest terms possible, systems are used to process signals [from an 'environment'] to modify or extract information. The components of a system cooperate for the overall, mutual objective of the whole.

In this way, a system is observed as a triad of [axiomatic] concepts unifying concepts:

1. Interconnectedness (group-ing/ed, collection).
2. Relatedness (purpos-ing/ed, function).
3. Wholeness (complet-ing/ed, integration).

A system is something that can be understood [by consciousness] visually. Here, the system principle for clarification and understanding by consciousness always is:

1. "You" must define; you must always complete the definition step to have a complete definition of a system.
  - A. It is essential to define objects and concepts, comprehensively,
    1. to communicate effectively and efficiently about a goal,
    2. to reduce social conflict and misunderstanding,

3. to reduce the introduction of bias into a design.
4. to develop any skill, or complete any operation, effectively and efficiently.
2. "You" must visualize; you must always complete the visualization step to have a complete understanding of a system.
  - A. It is essential to visualize a system, conceptually and objectively, comprehensively,
    1. to understand and explain a system,
    2. to safely design a system,
    3. to work with a system,
    4. and to adapt and troubleshoot a system.

Systems can accomplish things that would be impossible if the same elements were put into random relationships, or no relationships at all. It is the wholeness, the relatedness, and the interconnectedness of design that the systems approach is recognized and we become capable of modeling our community and our world with greater accuracy and fewer logical [systems] inconsistencies. In our community, we define variables, and none can be defined more than once. Equations must be unambiguous and less capable of being "interpreted". Units of measure should be on both sides of the equation. And herein we see that the benefit of a model is that it can be refined to make the structure of the system that it models more realistic, robust, and in alignment with a goal.

All systems are parts of larger systems, and every system is defined by its function in a larger system [of which it is a part]. Every system is contained in a larger system, and its role of function is what defines it. For example, in early 21st century society a car is part of a societies transportation system. The transportation system is a system for transporting people and resources safely and efficiently from one location to an intended destination; and, it functions in a relationship with the social system (which conceives of it) and the economic system (which produces it) of that society. Systems thinking is a universal process for understanding how component parts relate to each other within the whole. A system is [by part] a whole.

It is from the axiomatic concepts of systems (wholeness, relatedness, and interconnectedness) that a series of systems dynamics forms the basis of every existent system. In the real world, there is a complexity of these relationships.

The concept of wholeness is important. If the forms in the background of the world were not coherent, rational and connected, then the visible, actualized world would be chaotic. But, the visible world isn't chaotic; it is "lawful" (or principled, ruled). It is rational and appears to follow "one discoverable mind". Wherein, reality is an objective absolute that [at least] exists as a whole, and knowledge is gained through resonance and experience of reality itself [without self-delusion]. There is a standard for reality - there is a system of reality. And herein, our

perception of reality can be worked with through the application of logical reasoning to thinking in whole systems.

Every system (or "designed object") can be divided into three high-level, integrated ontological categories. In object design (Read: the design of objects), the three categories are generally: Function (F); Behavior (B); and Structure (S). In systems design, the three categories are generally: Structure (S); Process (P); and Function (F). The two sets of categories are basically equivalent with the noted understanding that 'processes' appear to observation as 'behavior'.

Hence, the design process for a system must involve these three concepts:

1. **Structure:** The architecture of the system designed to transform information for a purpose. The structure is the components of the design object and their relationships. A system is a structured form of organization.
  - A. **Category:** Parts of a system form the base of every system. Categorical thinking mirrors the reality of an [interconnected] static-state system.
  - B. **Ordering:** Parts of the based are connected into a flow visualization, forming the base of a moving (dynamic-state) system.
2. **Process:** The occurrence of an operational transformation (or event). A process produces a behavior [for a specific function]. The behavioral process(es) represents the attributes (or "qualities") that can be derived from the designed object's structure. A system is a form of organization that includes at least one process.
  - A. **Specification standard arguments (design specification pattern statements):** statements descriptive of specific configurations of the movements of objects.
3. **Function:** The objective [purpose or goal] for the transformation within and overall existence of the system. A system is a functional form of organization.
  - A. **Intention functional arguments (directive pattern statements, goal statements, objective statements, value statements, human requirements, human service needs, etc.):** statements of what ought to be complete to complete a need/goal.

As a functional form of organization a system is not just a collection of random things; it is an interconnected set of parts (or "elements") that is coherently organized in a way that achieves or fulfills something.

Every system [as a concept] involves the following four

functional properties:

1. **Property (it is essential):** An essential property of a system is that it cannot be divided into independent parts. Instead, its property [as a system] is derived out of the interaction with its parts and not its parts taken separately. This is another way of stating that a system is a single whole; or, a system inherently involves the concept of wholeness.
2. **Function(s) (it is critical):** Some functions are critical in a system. In an automobile, the functioning of the motor is a critical function to its operation within a transport system. The functioning of the sound system and windshield wipers are not essential to the basic functional operation of an automobile.
3. **Parts/Elements (of the system):** Every system involves three distinct parts: inputs; processes; and outputs. These parts are connected via some internal logic. Systems are surrounded by an environment (a supra-system). And, functional [living] systems include a feedback mechanism for the adaptation of the system to a dynamic environment. Environments form the context within which any system exists, and energy, influence, and signals might be able to flow across the boundary of the system from any environment to alter the balance of any part of the system.
4. **Behavior (geometrically structured):** A system represents a geometric structure [of thought]. Herein, behavioral traits are grown from the dynamic interplay of [systems] states, which are sub-composed of processes known as 'process states'. Buckminster Fuller (1928) defines synergy as the "behavior of whole system unpredicted by the behavior of their parts taken separately" - more recently this has become known as emergence (or "emergent behavior"). Geometry is the study of structure, and the relationship between objects (and points of perception) within space. Fundamentally, the function of a system cannot be fully known until the structure is known; because it is the structure that produces behaviors.

**INSIGHT:** *Systems, which are effectively networks in themselves, can join together to form a network of systems, which is a system in itself.*

In a sense, all real systems are networks for parts, and are collections of [components and interfaces]:

1. **Nodes (a.k.a., entities)** - are objects (e.g., people, places, things) or concepts. A node is a self-contained entity that participates with

other entities. Nodes in a system [network] are composed of matter and/or information, and are connected to each other via linkages of matter, electromagnetism ("energy"), and/or information. Networks are constructed of nodes, which are individual components or elements that have their own individual functions and identities. Nodes have global characteristics, including: identity, functionality, connections (with identities and functionalities themselves), local rules, and states. A network is just the nodes and interfaces. All nodes have:

- A. **Identity** - unique locatable sign and/or attributes that differentiate one from another.
- B. **State** - the current condition, configuration, status of a system at a given time. Nodes have states, a status.

## 2. Linkages (a.k.a., connections, linkage interfaces)

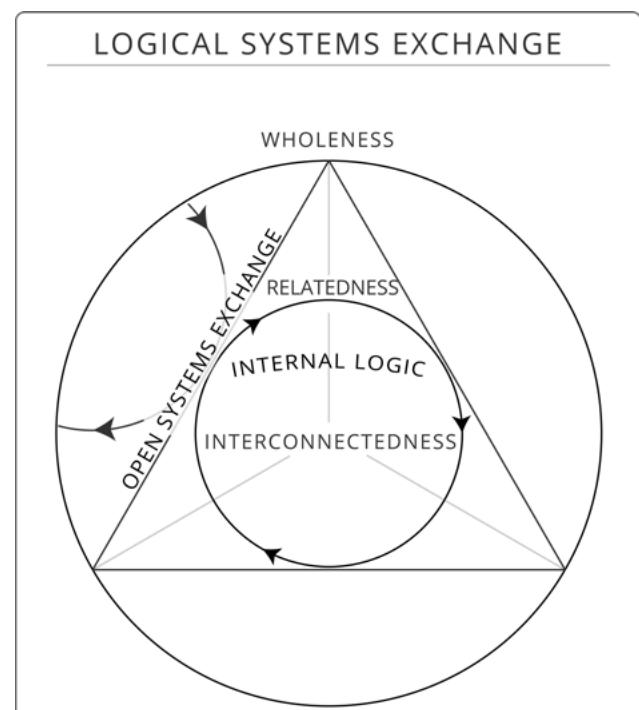
- are the [inter-] connections that bind all of the nodes together. Linkages are relationships. Linkages transmit one or more of the following between two or more nodes; matter, energy, or information (signals). The linkage that transmits (matter, energy, or information) is between two or more nodes. There are one to one linkages and also many to one (one-to-many, centralized) linkages. All the information you consume on a daily basis is a many-to-one connection. You producing a video and sharing on your online social profile is a one-to-many linkage. Electrical utility power generation is a one-to-many linkage. Harvesting fruit from a tree is a one-to-one connection. The connection between a fuel tank or battery and a motor is a one-to-one connection, where the battery wired-interconnection transmits energy directly to the motor and the fuel tank's fuel line transmits matter in the form of fuel to the motor. A complex airplane may have multiple engines and multiple tanks interconnected, forming a several-to-several (many-to-many) interconnection.

## 3. Boundaries (a.k.a., node interfaces)

- are the sphere of influence or impact of a system. Here, at the boundary is some influence that impacts system behavior and changes. The boundary is the domain that has direct (or, the most) influence. In some cases, the boundary of a system is material, and in others, is conceptual (informational). Nodes, linkages, and so do systems, themselves, have boundaries. A boundary is the edge of a [network] system; the demarcation (concept-information or shape-object) that separates a system [network] from the environment. At the interface with the environment, a boundary is where a system's

environmental behavior is expressed from and through. Interfaces are the interconnections between all nodes and linkages in the network. Interfaces have and allow types of connections. Interfaces are connections between nodes in the network. Interfaces are connections and signals between nodes in a network, where nodes are linked. Interfaces have/allow types of connections, have directionality, have inputs and outputs, behaviors, transformations, constraints, and protocols. A system's boundary can change over time to become more or less of any of the following boundary characteristics, and the change could be beneficial or harmful to the system (i.e., the boundary characteristics of systems are):

- A. **Directionality** - indicates movement through an interface (Read: the boundary).
  - i. One direction.
  - ii. Both directions.
- B. **Movementality** - indicates ability to move through the boundary.
  - 1. **Rigid (i.e., inflexible)** - a hard delineation of the boundary that normally takes physical or definitional form.
  - 2. **Flexible (i.e., giving)** - a boundary that can move without breaking. For example, a friend group is a flexible boundary. A flexible boundary is one where the boundaries are constantly being updated.



**Figure 19.** Axiomatic systems concepts.

3. **Fuzzy (i.e., uncertain)** - a boundary that "depends", is vague, or more conceptual, or has a lot of unknowns.
4. **Porous (i.e., permeable)** - is a boundary that allows other system into, and through, it. **Permeability** is the extent to which the elements (of matter, energy, and/or information) can cross a system boundary. For example, a highway system, a State, and a city have many porous boundaries. Cell boundaries can become porous to let in nutrients and excrete waste.
4. **Transformations** - are changes within the components themselves, and between the components, to produce differing emergent properties and functionality, physical and/or information. good be into a deliverable, or in the case of email, it might be encrypted as it moves through. Transformations can be physical or informational; wherein, energy is the calculated transformation of matter or information.

Hence, there are three elements any real-world system may be composed of, and there are three types of potential connections within and between systems:

1. **Information, data** (a.k.a., concepts, meaning) - is a base, axiomatic element, and conveys meaning to consciousness.
2. **Material, matter** (a.k.a., objects, shape) - is a base, axiomatic element, and enables physical movement of consciousness in a body.
  - A. **Energy, light** (a.k.a., electromagnetism, power) - is the calculated transformation of a base, axiomatic element; is the base, axiomatic process [done to objects, *as power*, and concepts, *as intelligence*].

More simply, the three elements are:

1. **Information** (Read: meaning, "conceptuality").
2. **Materialization** (Read: objects and gravity, "physicality").
  - A. **Electromagnetization** (Read: light and magnetism, "energy").

Every living system involves a set of [at least] three conceptual components that form its first principal dynamic. The three components are:

1. **Boundary** - refers to the structure within which a system accesses a resource. The boundary represents the "borders" of the system that define where access, and controlled action, can be taken. In the Decisioning System specification this is referred to as "access rights".

2. **Access** - refers to the use or access of a resource. Access reconciles the relationship between a system resource and a system boundary. Access represents a relationship between the identification of a functionally needed resource and the resources processing through a structure within the system. Simply, an **open system** is "open to access through its boundary", and a **closed system** is "closed to access through its boundary". In systems thinking, open systems maintain processes by which they exchange information with their environment. These processes allow for the adaptation and evolution of the system. In computing, 'open systems' are capable of interoperating so that mutual efficiency exists between them. Mutual efficiency refers to the optimization of energy expenditure by all systems in a relationship. This might otherwise be known as a 'homeodynamic potential'.

3. **Resource/signal** - refers to an element which is available within the system boundary and which enables a transformation in the system to occur -- it is that which has the potential of being accessed by a systems component. It is possible using signaling to request access to some resource, and to inform others of access (or potential access) to some resource, which are messages sent from a system boundary.

A network is a set of interconnected components and their interactions.

1. Interconnected components - nodes (elements) connected through relationships. Because of the interconnection of components, networks typically have complex relationships.
  - A. Networks are constructed of:
    1. Nodes are individual components or elements that have their own individual functions or identities.
    2. Linkages between nodes by which information, matter, and energy may be passed between nodes.

Most complex systems and all living systems involve a series of systems dynamics. All network have [a] complex [of] relationships; in particular, human societal systems have a complex of social and technical (socio-technical) relationships. Complex dynamic (i.e., changing) relationships interconnect parts of a system, which produces an overall [emergent] behavior. For the purpose of iterative modification to, and adaptation of, a community's habitat, these "systems thinking dynamics" are used for the modelling, simulation, and controlling of a complex and living community system. Herein, we model our reality, we test and we simulate to more

greatly align the next design iteration of our community with our highest potential expression of fulfillment. In order to do this as a living system, we need corrective feedback: we must correctly know the full structure of the system, we must correctly understand its behavior, and we must also correctly access signals within our boundary in order to efficiently move resources into positions of greater fulfillment. Essentially, "systems dynamics", as a term, defines those relationships between structures in a system and relates them to the system's behavioral results. Notice here that the axiomatic concepts of systems form the potential for a system dynamic. Broadly speaking, the term 'dynamic' means (or, is a synonym for) the term "active". In a sense, critical thinking represents a "dynamic of thought" that is capable for following (or referentially retracing) an active environmental dynamic (or "active environmental information in a real world").

Technically speaking, a **feedback loop** is a system structure that causes output from one node to eventually influence input to that same node. Feedback loops are a necessary dynamic [principle] of complex, living systems. Such systems have feedback loops that allow for self-renewal, self-correction, and self-organization (in an environment): observed as the healing of a cut or the organizing of organisms in nature. Living consciously requires a willingness to embrace constructive feedback (i.e., critical feedback). We may be born into conditioning, but the responsible thing to do is to learn how to think and discern for oneself, and to come to one's own conclusions. The concept of 'feedback' implies a loop where information of some kind is fed back into the system itself. Wherein, feedback presents the possibility of changing state and "re-orienting" within a larger environmental system; whether it's data in a computer or the sense of a change in the temperature, feedback is a mechanism for responding and adapting to an environment. Feedback allows for the effective re-orientation of a system.

Through access to information about the result of outputs in an environment, a synthesized correction can be made to the structure of the system so that its next output orients the system differently. Feedback maintains the potential for a probability (or possible causality) orientation - the way in which a system (or organism) orients to its environment as it concerns information involving the initiation and regulation of processes, states, behaviors and actions. Functional and living systems are responsive [through feedback] to their environment. This type of feedback is known specifically as 'negative feedback' (or 'corrective feedback'), and it is necessary to stabilize a system for corrective operation in its alignment with a goaled direction.

For example, in , people see a problem, decide on an action, expect a result, and believe that is the end of the issue. The figure illustrates the framework within which most discussions are debated in the press, business, and government. In early 21st century society, the act of voting or buying a product might equated as a good

example of this. Problems leads to actions that produce a result that creates future problems and actions. There is no beginning or end, except for individual physical lives. Humanity lives in a complex system of nested feedback loops. Every action, and every change in nature, is set within a network of feedback loops. Feedback loops are the structures within which all changes occur in nature, and we can come to know these structures and engineer through these structures, or we can do otherwise, unwisely.

In the simplest possible feedback control system there are two symbols/parts - a stock, and a flow. The stock is an accumulation, or integration, or level (to choose terminology from different fields). The flow changes the amount in the stock. The flow is determined by a statement that tells how the flow is controlled by the value of the stock in comparison to a goal. All systems, everywhere, consist of these two kinds of concepts—stocks and flows. Such a statement, that there are two and only two kinds of variables in a system, is powerful in simplifying our view of the world. People in early 21st century society familiar with accounting statements, as in annual reports of corporations, will recognize the two classes of variables. A financial report is presented on two different pages—the balance sheet and the profit and loss statement. All numbers on the balance sheet are stocks representing accumulations that have evolved over time. The profit and loss statement represents the flows that cause the stocks to change. There is no comparably important third page, only the page representing stocks and the page representing flows. That structure of an accounting statement represents a fundamental truth about all systems. Water in a bathtub is a stock; the flow of water changes the stock. When "you" see (signaling information from the environment) the bathtub is full (goal) you change your relationship to the bathtub tap (flow) to shut off the movement of water into the tub-like stock of water ... because "you" see it is full and that is your goal. The system's variables here are the flow of water into the tub and the perceived amount of water in the tub at any moment in time.

The real world is made up of a complexity of nested loops. It is important to recognize that simple loops have serious shortcomings and may be highly misleading. The truths learned from simple systems are often completely opposite from the behavior of more complex systems. The very idea of 'feedback' concurrently puts implies the notion of transience - that life is always changing and that the most important 'probability constant' is change itself (i.e., is the information system's next iteration).

Systems thinking maintains that the reconciliation of these concepts of flow and stock come through the concept of transience (i.e., the iteration of consciousness), that life is always changing and that the only constant is change itself. Our collective practices and outlooks have always undergone change as new awareness and abilities come forward through the recognition of this transience, it is important to be real with ourselves that

present awareness, ability, and outlooks will be altered or entirely superseded to some degree at some point by new knowledge and ability, as our long history of culture and technical changes clearly shows up. By momentarily reconciling we have a space to align our decisions within nature and in the nature of our understandings so that we may more accurately adapt our models and service systems.

A person understands filling a bathtub with water. But, if we go to a system that is only five times as complicated, then intuition fails. As bio-physiological consciousness, we can only hold so many relationships in our mind at a given time ('working memory'); hence, we might quite easily and incorrectly presume a basic feedback loop when a much more complex one is somewhere present and influencing behavior (or "the emergent movement of a stock"). Since the real world is a complexity of feedback loops and our ability to hold relationships is limited in our mind by some degree we do the following: we test and simulate and record and share so that we may accurately model and engineer the emergent orientation of our community. In community, our decisions (and hence, actions) are based on these models. In community, we make models explicit, we seek to discover inconsistencies, we determine future implications, and we feed-back information to improve our models toward our purpose as a community.

Although all living systems follow the foundational principle(s) of systems dynamics, not all systems are equivalent. Individual systems have their own behavioral characteristics as a by-product (or result) of their structure and their interrelated functionality. The principle design dynamic of this relationship says that:

1. There are two axiomatic system structures:
  - A. The system's assembled structure (i.e., the system's structure).
  - B. The environmental system in which the assembled [system] structure exists at a location.
2. Structures create behavior patterns, and structure induced behavior patterns produce results (repeated outcomes). There are three productive results:
  - A. Societal productions: The socio-technical system of an organism/species.
  - B. Functional productions: Technologies (i.e., objects assembled by life, including simple tools, machines, and computers).
  - C. Non-functional productions: Social relations (i.e., the concepts, desires, values and objectives that humans have in their mind when they think and behave around one another).

All complex systems produce these effects. And herein, the dynamics of a complex system form a foundation for the emergence of potential. Knowing the dynamics of a system gives a creator greater creative potential

in the system. By connecting the dots "you" gain understanding; through understanding you can predict results via probability and reduce to the selection of a decision most probably aligned with a set goal. The modeling of these feed-back systems relationships, in our community, into an emergently understood model allows for [formalized] specification of decisioning (i.e., a decisioning system).

The specific information and its arrangement in a system's decision space, once processed into a static state, will produce a probable behavior[al characteristic] -- the structure of a system determines its behavior (i.e., a system's structure causes its behavior). More precisely, the structured processing of information through the system produces a probabilistically [stated] behavior -- information to state, state to a probability patterning of behavior. Understanding these structural interrelationships is necessary to understanding system behavior. To change a system's gross behavior, change its structure. System behavior results from the effects of reinforcing and functionally directing processes. Structure is a (or the) reinforcement mechanism.

System behavior is by definition behavior that is unpredicted by the behavior of its apparent parts; which isn't to say that the behavior can't be understood, but it has to be modelled as a whole [as much as technically possible] to gain a more accurate picture, a more precise map, model, or "territory".

System behavior may be predicted and designed through models and simulation (as in, simulation of the underlying structure and component processes and relationships of the system). A simulation model will simulate the interaction of system elements over time.

Living system's interface and exchange information with their environment; they are structurally open systems. Herein, the system's approach doesn't rely on any one leader or social class; it is open to the emergence of new and more accurate information; it doesn't have an empowered social hierarchy, which would inhibit the adaptive emergence of the Community's systems.

Efforts to alter system behavior without changing its underlying structure (e.g., patchwork) may create short-term improvements, but produce more long-term problems. We must think long-term, strategically (and iteratively) if we are considering problems as structural elements of a system.

Feedback provides information about the effect of changes made in an environment. The 'feedback dynamic' creates potential. That potential means that there is also probability in the [information] system - with change there is a probable effect (or result). If there is a probable (or probably influenced) effect and consciousness is present (as SIGOR), then there is a 'decision'. Feedback is a mechanism by which we adapt our decisions to our environment by choosing the next complete iteration of a state of dynamic design.

Complex systems capable of change have a natural desire to change for their better, to suite their needs and to better adjust to and through their environment (i.e.,

evolution without an end). Evolution is open ended. As a community, we desire to evolve toward states of lower entropy, for we have observed all that it accords, such as a more thought responsive and loving environment. With this understanding, we can create states of the world that fulfill our needs more effectively and efficiently. And, structures that make us more functional, designs that give us a bigger decision space, systems that enable us in the physical world to better survive and thrive, consciousness that is moved toward cohesion and love and away from disorder and fear.

Complex living systems are not chains of linear cause-and-effect, but complex networks of interrelationships involving a spectral continuum of cause-and-effect. Therein, a systems approach is ideal for solving complex, ill structured problems.

In a dynamic there exists the potential for 'synergy' [where there is a plurality of potential directions]. A 'synergy' is the complex behavior of whole systems unpredicted by the behaviors of any of the components of the system (it is another word for the concept of 'emergence'). Herein, 'syn-ergy' is to 'en-ergy' as differentiation is to integration [in the mathematics]. "Syn" stands for synchronization (or "withness" and "togetherness"). "En" stands for "force" [of initiation]. And, "-ergy" is the ability to do something, to do "work". In other words, syn-ergy means to do the work of integration, and en-ergy means to do the work of observing difference[s in a signal]. In figurative terms, through self-initiation we can do the work of integration. Herein, critical thinking [as a component of the systems approach] is a principle tool for integration. Hence, as a tool, critical thinking may help us understand emergent

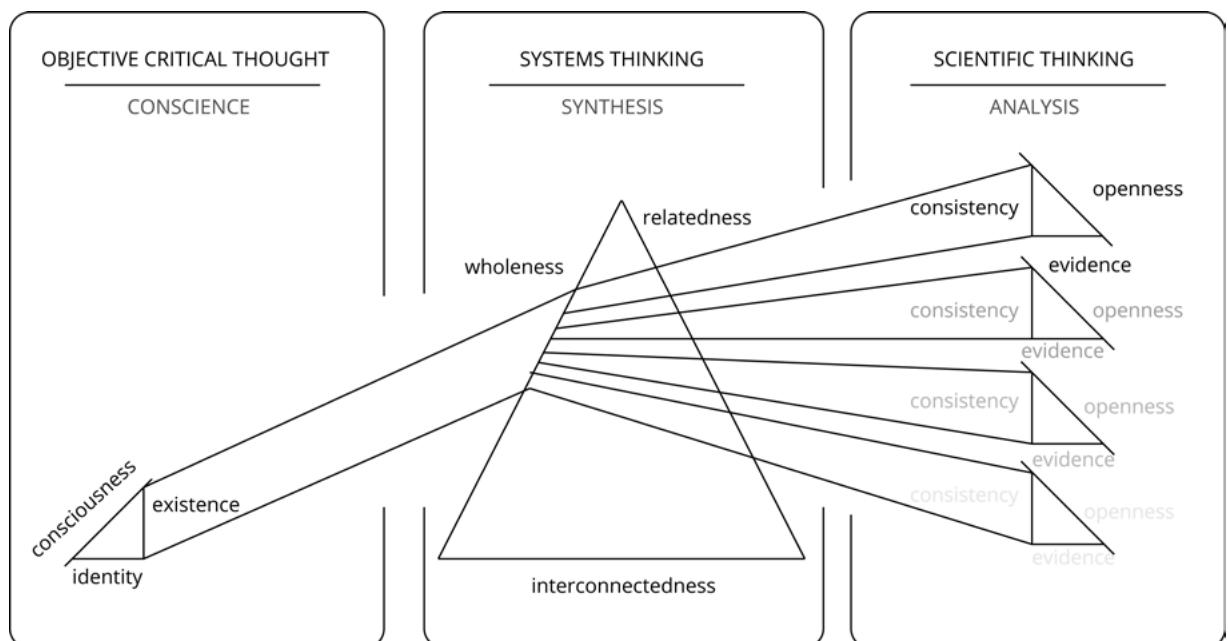
behavior. 'Synergetic capability' is the processing of using a howl to predict the functional "behavior" of the units [of the whole].

Systems range from simple to complex. A high-functioning system continually exchanges feedback among its various parts to ensure that they remain closely aligned and focused on achieving the goal or purpose of the system.

If any of the parts or activities in the system seems weakened or misaligned, the system makes the necessary adjustments to more effectively and efficiently accomplish its intended and purposeful goals. A pile of sand is not a system. If you remove a sand particle, you still have a pile of sand. The sand has no greater decisioning process than to respond to the probably technical principles by which its structure, and hence, behavior is determined. Alternatively, as an adaptive system, consciousness has the ability to modify in response to environmental signals, which provide information about a probability space. In modification by consciousness there is re-orientation by some spatial direction.

The essential characteristics of systems include:

1. A system is made up of related and interdependent parts, which form a [view as a] whole.
2. Systems have boundaries.
3. In a system the input is connected to the output through a process.
4. A process functions for a purpose.
5. A system has order and sequence in its process.



**Figure 20.** Illuminated refraction of systematic, scientific, and critical thought through a prismatic structure.

6. A system cannot be considered in isolation from its environment, its supra-systems and subsystems.
  7. Systems have specific purposes within larger systems.
  8. Systems can be optimized by "economizing" resources, in particular, resources that are scarce.
  9. In the real world, systems are optimized through experience, experiment, verification, and integration.
  10. Inputs and processes can be maximized for optimum value-state generation. In a democracy the authorities manage these things for 'your benefit'. In politics opinions manage these things for "private benefit". The system of the community is transparent for all of our benefit.
  11. A system which is in equilibrium will change only if some type of energy is applied.
  12. A system's parts must all be present for a system to "effectively" carry out its purpose optimally [or at all if considered in terms of 'criticality'].
  13. Systems have a structure, which is a stable parameter of the system. Structures impose limitations on a system's processes, and they generate a probability-determined decision space.
  14. Structures can change. The change of structures can be designed. Designs can be more accurately informed by the fed back [resonant] information from the design's change in effect to an environment.
  15. The structures of a system limit its [functional] capacity. There is only so much that can be done to increase capacity or modify the characteristics of a system from within the system itself, beyond that the structure must be re-designed. In the system there are parameters; and if it is a living or otherwise adaptive system, then there is the ability for consciousness to select a decision within a diversity of probable decision spaces.
  16. A system's parts must be arranged in a specific way in order to carry out its purpose - structure and organization matters.
  17. Systems maintain their stability through feedback and internal structural adjustment to processes. In other words, systems change in response to feedback. Systems maintain their stability by making adjustments based on feedback.
  18. A basic [characteristic] principle of systems is that "you", as consciousness, cannot in full detail describe and understand a supra-system from the knowledge contained only within the components of its sub-system. As was mentioned earlier: there is not the information. This is because complex systems in their whole and related structural form have the characteristic of 'emergence'. An automobile has a different function than any incomplete or otherwise related (i.e., put together) set of its parts. Just looking at the parts in any individual form will not tell you (without a pre-existing model) how the parts of a car come together to perform a useful function, transportation and the extension of our function of locomotion [to a larger decision space].
  19. If you are going to describe a supra-system you have to have at least one assumption that goes out beyond the system until you experience the whole of the system itself. In the real world, individuals have to experience a system to understand the system (or have experience of the system to have a model of it). As others have said of humankind, we will change [our values and our ways], our systems, "when we see and experience a better way". Community represents an opportunity to facilitate life enriching and usefully adaptive experiences [toward fulfillment]. Now, it might be interesting to note here that if consciousness were actually what this reality-system that we are necessarily experiencing was composed of, then we have to experience our own existence (which some people incorrectly equate with 'subjectivism') if we are to adapt and develop the potential of our consciousness. Herein, consciousness experiences limitations in existence, which generates a probable decision space and the ability of a consciousness to change the decision space within parameters. In other words, if the statement, "consciousness is the system" is true, then the statement "we have to experience via our consciousness the system to have understanding" is concurrently true. This is a fundamental understanding of the adaptive behaviors of systems in the physiological sciences -- that we as humans have to experience to understand. Even the adoption of language is an experience.
  20. Designing a system with multiple processes is an engineering challenge and involves the process of engineering inquiry.
- The efficiency mechanism is inherent throughout the systems approach. We might see how a very different economic system might result from the application of systems thinking at the socio-economic level of a community. We are living systems in continuous exchange with life-resource on a finite Earth. Wherein:
1. **Effectiveness** is the degree to which the goals of a system are achieved. How do the results of our design decisions align with the goals of our fulfillment, our common life-grounded needs?
  2. **Efficiency** is a measure of the use of inputs (or

- resources) and processes to achieve outputs.
3. The **performance** of a system refers to the systems effectiveness and efficiency.

## 2.2 Systems projects

At the societal-level, all projects are actionable systems, and all systems are run as active projects. Here, systems science can offer valuable support to structure projects:

1. Listing, modeling, and simulating (visualization): Using 1D language, 2D concept models, 3D object models and 4D simulations of objects (simulate models) of various urban scenarios, predicting and designing the impact of design choices on community fulfillment, behaviors, and resource utilization.
2. Data collection and dataanalysis (cognition): Leveraging (artificial) intelligence and big data collection to understand human and resource requirements, including patterns of movement, socio-technical interactions, and resource consumption within neighborhoods and the global habitat service system.

## 2.3 Technological systems

*A.k.a., Technical systems.*

Every system that is capable of being perceived (or sensed) in an environment has a technical relationship (a.k.a., technological relationship). In a sense, it could be accurately equivocated with a technology (if the system is not just conceptual, but can be verified by experience to exist). Technology can be described as anything with utility and function. The human body, for example, is made up of various technologies, each executing specific functions. A tree is made up of its technologies, its roots pull in water from the soil, channelling it up its trunk to its branches and its leaves, which in turn collect sunlight for energy. Humans are similarly made of organ technologies. There is an inherent technical ordering, and use of technology in nature. Language is a technology, clothing is a technology, molecules that modify human consciousness (e.g., dopamine, tryptophan, dimethyltryptamine) might even be considered a technology.

**QUESTION:** *What is the most important part of any system?*

**ANSWER:** *The part that is not working as expected.*

## 2.4 Dynamic complex systems

*"As above, so below". [What we see at any scale will inevitably show up at another.]*

*- Hermes Trismegistus*

A simple analogy for a dynamic complex system is a single-celled organism. The organism is conceptually distinct from its environment by its shared qualities; we are naming it as a system. What we see in this system is a porous cell boundary that allows the exchange of materials with the surroundings; it is an open, but critical system. The cell consists of many interdependent parts that interact to create the behavior of the whole cell; its parts exhibit interconnectedness, and together they generate an 'emergence' [of behavior]. The parts (as "constructors") have the ability to come together as needed and perform various tasks; it is self-organizing - in an information system the parts that construct might be referred to as 'constructors'. The cell is constantly sensing signals from its environment(s) and adjusting to signalled changes by modifying its internal dynamics (temporally known as a 'state'), which is composed of a set of interrelationships; it is recursive.

Peter Medawar said, "reductionism is the belief that a whole may be represented as a function (mathematically speaking) of its constituent parts, the functions having to do with spatial and temporal ordering of the parts and with the precise way in which they interact." Some people forget that it is not always easy to know a priori [experience] what the appropriate level of reduction is for any given scientific problem. The solving of complexly dynamic problems takes systems thinking and not reductive science by itself.

Methodological reductionism describes the idea that complex systems or phenomena can be understood by the analysis of their simpler components. Conversely, holism is the idea that a complex system can only be understood by taking into account the interaction of its parts, and that by reducing the system down into its component parts "you" will obscure understanding (e.g., emergence and feedback).

Reduction[ism] without holistic observation divorces itself from the observations of those who are afflicted by it, whereupon those who reduce refuse to reconcile their observations with reality. Science without a continued and consistent observation of the whole is to be rejected for it is, itself, a rejection of the logical application of the method in the first place. It is unfortunate that this leads some people to reject science outright without recognizing the necessity of science in-context. Some contexts simply have a probable likelihood of producing science that is untrustworthy, which is regardless, as understanding [for us] requires experience. And, without an observation of the whole [in-context] it is easy to pass blame, and particularly, to blame the "victims" of a larger, systematic problem - ignorance by convention.

Taken together, the properties of *openness* [to an environment], *interconnectedness* [of parts], *recursiveness* [as the flow of information], and *self-organization* [as a function] result in what is called a 'complex adaptive system'. The complexity of the system causes its overall behavior to be "organic" in nature, which means that its behavior unfolds over time; it is emergent. "Emergence" is a phenomenon that only occurs in the presence of

every system. To quote Jaewon Kim,

*"At the core of [emergence] was the thought that as systems acquire increasingly higher degrees of organizational complexity they begin to exhibit novel properties that in some sense transcend the properties of their constituent parts, and behave in ways that cannot be predicted on the basis of the laws governing simpler systems.*

- Making Sense of Emergence (Kim, 1999:3)

Here, we are begged to realize by our experiences within an existent system that we exist because of a larger ecological system, which has a lifeground that services all fulfillment. All ecological systems have a lifeground. Actively acknowledging our lifegrounded needs and essentials, is likely to bring them forward into a momentary decision space where they maintaining their emergence as a central primary focus to our society. We return to these core guiding requirements of what sustains us, and from there, priority resolution becomes clearer, eventually giving way to a more valid life focused social systems. From the lifeground we acquires universal human values in combination with prior lifeground awareness, which stands above all divisions and [subjectively] relative viewpoints to bring a unity to our perspectives, worldviews, and our design (and production) services.

*"The world we have made, as a result of the result of the level of thinking we have done thus far, creates problems that we cannot solve at the same level of thinking at which we have created them - we shall require a substantially new manner of thinking if humankind is to survive."*

- Albert Einstein

## 2.5 The systems approach and the analytic approach

**NOTE:** It is important to adapt understandings to the evidence when it presents a probable certainty of a different information model.

The following is a discussion of the systems approach in contrast to the analytic approach; with the additional note that an integrated approach is necessary for the sustainment of community.

The systems approach is fundamentally different from that of traditional forms of analysis, and analytical thinking. Traditional analysis focuses on separating the individual parts or components of what is being studied; in fact, etymologically the word "analysis" is a transcription of an ancient Greek word meaning "to break up into constituent parts". In contrast, the systems approach focuses on how the thing being studied interacts with the other constituents of the system – a set of elements that interact to produce the emergence [at least] a behavior, of which an element of the system is a part. The systems approach focuses on relationships, multiple outcomes, holism and boundaries, the environment, the

larger system (source), controlling logical processes, and feedback. This means that instead of isolating smaller and smaller parts of the system being studied (a "reductionist" approach), the systems approach works by expanding its view to take into account ever larger numbers of interactions, which are then verified through the controlled analytic approach. Thus, a systems approach accounts for interdependent sets of variables, as opposed to the analytical approach (via reduction), which is more effective at handling independent sets of variables.

"Why" questions about objects called systems cannot be answered by the use of analysis. Answers to why questions are called 'explanations' and the product of explanations is understanding. In the 1950s society became aware that science does not produce understanding, it produces factual knowledge. The product of analysis, of the scientific and the analytical approach, is how things work, never why they work the way they do. The systems approach provides a [universal] contextually related explanation, and thus, understanding. Explanations always lie outside of the system under analytical study, never inside of it. Analysis takes an observer inside the system where knowledge is acquired and verified, but not integrated by its identifiable interrelationship to a larger whole. Understanding involves the integrated accumulation of knowledge through systems thinking.

Analytical thinking is a powerful tool for understanding the parts of a situation; it is just not designed to convey a complete understanding of how those parts work together. Synthetic thinking (i.e., synthesis) is the reverse process of analysis. It is a tool for making sense of and for understanding interactions - understanding how things work together. However, Synthesis needs analysis – how can you find the similarities across [apparently] different things if you haven't listed the "different things" first?

Essentially, synthesis refers to [a conceptually integrating consciousness] seeing how things work and are composed together. "You" take the object "you" want to understand and ask, "what is this a part of?" An individual first identifies the containing whole of which the object is a part. For example, to understand an automobile, you must know that it is a part of a transportation system; it functionally extends human locomotion in some useful manner (it is a part of a society's geospatial service system known as "the transportation system"). An individual must account for the whole system to understand the function of a "car". What is a transportation system? What is the locomotion system [in a human]? Finally, someone disaggregates the understanding of the containing whole by identifying the role or function for which it exists in a larger whole [structure]. It is important to no herein that each part is only of limited value without the other.

A systems approach uses synthesis to combine separate elements in order to form a coherent whole and provide explanations for the behavior(s) and emergent properties of a system. Every synthesis is

built upon the results of a preceding analysis, and every analysis requires a subsequent synthesis in order to verify and correct its results. Without verifying reality and examining it comprehensively, we delude ourselves into fantasies (we might only see basic systems, and not complex ones).

Herein, synthesis into formalization is not a form of socially controlled uniformity. A systems worldview is not a set of taboos; it is a way of organizing an ever expanding understanding of the universe. The systems worldview is an "objective worldview" that maintains information alignment with an emergent understanding of reality, not our perception of reality as seen through an ideology. Systems thinking is not a form of ideological thought; it is not an "-ism".

A complex intentional community requires an integrated, interdisciplinary, and systems-based approach to solving problems. Systems thinking can be defined as an approach to problem solving that observes "problems" as parts of an overall whole system - behaviors, functions, and structures are identifiably interrelated. When individuals are unaware of how things influence one another within a whole they become incapable of approaching problems from an integrated perspective, leading to errors and flaws in their thinking and solutions. Herein, we recognize the value in a systems-based approach to understanding and guiding the adaptation of our total information system (social + economic + ...). We understand that all elements of a system must work together to maintain the whole - whole systems design re-forms community toward fulfillment. The traditional disciplinary boundaries are artificial, and they narrow our focus so that we miss fundamental and systematic connections to the world.

It is relevant to note that systems thinking also goes by several other more contextualized names: strategic thinking, solutions thinking, structured thinking, future and forward thinking, long-term thinking, high-level thinking, lateral thinking, lifecycle thinking, and design thinking. As well as, synthetical thinking and systemic thinking. The term "systems thinning" is simply more comprehensive.

Note that the understanding of 'systems thinking' can be more difficult to intellectually integrate than the method of 'analytical thinking' by individuals in early 21st century society. There are multiple reasons for this, most notably: (1) the modern schooling system only gives a moderate introduction to analysis and often confuses critical thinking with conditioning (i.e., they apply conditioning and call it critical thinking); (2) systems thinking is either not taught or not fully explicated in early 21st century society's institutions and industries which profit profusely off a lack of systemic integration [of services]; (3) the thinker may be dealing with interactions that are not necessarily visible to the eye; (4) in complex systems, particularly living systems, the interrelationships are dynamic rather than static, which makes pattern recognition necessarily more complex - complex systems interactions may change regularly and

affect each other differently each time they do so. Hence, "dynamic thinking" and "lateral thinking" are necessarily subcomponents of synthetical thinking.

**NOTE:** *Systems thinking is highly dependent upon pattern recognition and pattern coordination - being able to identify, organize, and integrate patterns.*

## 2.5.1 Itemized differences between analytical thinking and synthetical thinking

Simplistically, systems and analytic thinking can be replaced with the concepts of compositioning and decompositioning. Wherein, de-compositioning is reasoning from the whole to the parts, and 'compositioning' is reasoning from the parts of the whole to the whole itself.

More completely, the two thinking methods may be differentiated as follows (note, the same concept is conveyed below in three different manners):

1. Analytical thinking **enables an understanding** of the parts of an object. Synthetical thinking **enables an understanding** of how those parts work together to form an emergent behavior (i.e., why they work the way they do?).
2. Analytical thinking **breaks things down** into their component parts. Synthetical thinking **finds the patterns (models)** across those component parts. It connects the dots. It requires a refresh of the model [of the system] to more greatly integrate new and more accurate information, and to remove apparent contradictions of its logic in the process of integrating. There is a *delta iteration* in the system (i.e., the system changes in time and space).
3. Analysis involves the **identification of differences**. Wherein, a 'critical analysis' [in part] involves the idea of "versus" (or "vs.") - to put two ideas in opposition to one another so that you can claim one of them correct. Synthesis concerns the **finding of similarities**. In other words, synthetical thinking is the intentional finding of repeating patterns (or common "themes") across a system (object or situation). Although analytical thinking enables us to find those repeating patterns and common themes too, it doesn't do so directly (or as effectively) as it is more focused on identifying differences rather than similarities.

## 2.6 The forms of systems thinking

While there exists a potential for categorizing different types of systems thinking, these distinctions may not significantly contribute to a deeper understanding. The

terms 'systems methodology' and 'systems thinking' generally encompass all possible variations. These seemingly separate forms of thinking collectively aid in heightening awareness when dealing with systems by integrating information to foster a more comprehensive understanding. They assist in the creation of systematic and holistic solutions, leading to more effective thought processes and actions. Tools that encapsulate these understandings across various scales prove to be valuable resources in this context.

## 2.7 Systematic pattern recognition

*A.k.a., Pattern conception, pattern formula, pattern discovery, logic.*

Every system is a pattern, as an axiom. There are three axiomatic categories of meaning (symbolized/signed meaning) in the context of systems as patterns.

### 2.7.1 Sameness (unique identity, informationality)

The process of recognition the pattern in one or more static objects or concepts:

Shape A = Shape B (or Shape A  $\equiv$  Shape B)

Concept A = Concept B (or Concept A  $\equiv$  Concept B)

This statement asserts that the shapes A and B are equivalent or identical. For instance, if you want to express that one shape is equal to another shape (let's say Shape A is equal to Shape B), it can be represented as a logical statement using the equality sign (=) or an equivalence symbol ( $\equiv$ ) depending on the context.

### 2.7.2 Causativeness (cause and effect, materiality)

The simple formula for pattern recognition of dynamic objects (cause and effect), that is itself a pattern (of cause and effect) is:

If > then > because

- If X, then Y, because Z
- If event A occurs, then result B happens, because of cause C
  - For instance, if a ball is thrown at the wall (X), it makes a noise (Y), because of contact/collision reverberation (Z).

This is the pattern of an entity who is pattern seeking.

All systems, and science in generally, involve this formula. Science, in this way, is an attempt to visualize and formalize natural phenomena via this pattern.

### 2.7.3 Reasonableness (rationality, thinking and reasoning)

Then come the axiomatic propositions of logic (i.e., the axioms of propositional logic) that construct the base of all reasoning:

1. **And (conjunction):** Denoted by  $\wedge$  (or the word "and"), this connective combines two propositions and is true only if both propositions are true. For instance, if proposition A is true and proposition B is true, then  $(A \wedge B)$  is also true. If either proposition A or proposition B (or both) is false, the conjunction is false.
2. **Or (disjunction):** Denoted by  $\vee$  (or the word "or"), this connective combines two propositions and is true if at least one of the propositions is true. In an "or" statement  $(A \vee B)$ , if either proposition A or proposition B (or both) is true, then the entire disjunction is true. It is false only if both propositions are false.
3. **Not (negation):** Denoted by  $\neg$  (or the word "not"), this connective negates a proposition, essentially flipping its truth value. For instance, if proposition A is true, then  $\neg A$  (not A) is false, and if A is false, then  $\neg A$  is true.

### 2.7.4 Directiveness (motivations, goals, and objectives)

Then comes the axiomatic conscious action of step, thinking (intelligence), which allows for engineering (analysis and synthesis; problem>solution ability):

1. **Taking apart intentionally** (disaggregation, disassemble, reverse engineer).
2. **Putting together intentionally** (aggregation, assemble, engineer).
3. **Testing together intentionally** (experimentation, discovery and exploration).
4. **Using together intentionally** (socialization, societal flow and harmony).

## 2.8 The systemic thinking process

**NOTE:** *Creative thinking is a form of systems thinking; it is the relating/creating of things or ideas that were previously unrelated. Systems thinking is not the death of creativity; it is instead, an opening into the flow state of creativity.*

Systemic thinking is the process of synthesis, and it is described quite basically by the following steps:

1. List (identify) the system elements (as part of an assembly, a system). Lists are cohesively structured, clearly formatted and list items based

- upon a pattern, principle, or some other similarity:
- A. Lists of collections of patterns that group similar informational (categories and classifications, abstracts, concepts) and/or physical (concrete, tangibles, objects).
  - B. Lists of procedures that form a functional system of resources, activities, and knowledge-skills; list of work flows, on some timeline, short, medium or longer strategic). A procedure is an ordered sequence of steps or concepts to achieve a goal.
  - C. Search for and collect the elements of the assembly.
2. Group (categorize and classify) similar elements together and describe what each group has in common.
    - A. Find the common theme(s), the repeating pattern(s), the supra-type(s) and sub-type(s).
  3. Model and visualize (see visually) all elements together from one to five dimensions (i.e., from definition to simulation).

The systematic data collection methods are:

1. **Checklists** (a.k.a., check-lists, check-listing) are a type of procedure that accounts for previously identified potential observations of events and/or objects, and allows an observer to record its presence and/or absence over time. A checklist is a tool used to systematically verify or track the completion of tasks or objects (deliverables/conditions). It consists of a list of items or actions that need to be checked, completed, or verified. Checklists are commonly used in various fields to ensure that essential steps or items have been addressed or that certain criteria have been met. These methods are typically more structured and concise, focusing on specific items or tasks to be verified or completed.
  - A. Here, information is gathered from the use of the checklist tool to ensure safety and/or completion of operations requirements.
2. **Surveys** (a.k.a., surveying, questioning, feedback and issue/demand questionnaires) - is a systematic data collection method used to gather information on needs, preferences, opinions, or feedback from a targeted group of individuals or entities. Surveys involve a series of questions or inquiries designed to collect data on a particular subject, topic, or area of interest. Surveys can be used to gather quantitative or qualitative data and are part of the decision system where need, preference, and feedback inquiry processes inform master plans and current socio-technical habitat operations. All surveys are check-lists; they are lists of items that

- some team con-structured, and some coordinator checked were completed, by societal users.
- A. Here, information is gathered from users through their completion of a pre-constructed survey that collects data on needs, preferences, and expectations.
  3. **Technical computers and sensors** - is an electronic computer system that collects and sends on/off signals.

## 2.9 Learning systems

A systems approach entails an environment where learners explore the interrelationships within a system, looking for useful patterns and verifying related identities for oneself, rather than memorizing isolated facts. Functionally healthy young children are naturally good systems thinkers, most likely because their learning has not begun to become fractured. In their eagerness to learn, they bring all that they know to their learning and are willing to explore boundaries in search of understanding. Everything has the potential of being related and relevant. It is unfortunate then that their thinking and learning experiences become increasingly compartmentalized as they progress through the modern schooling system, which is designed to move them into the market as trained professionals (the schooling system's stated goal).

Herein, we realize that the very infrastructure of any community is most effectively sustainable through 'interdisciplinary teamwork' at the systems level, for it is representative of the group dynamics a system "team" at scale: teams are open environments of socially cooperative participants (i.e., teams share and cooperate); teams have functional goals in the application of effort; and they act in common through some form of logical coordination. It is here that we may understand that teams naturally facilitate the learning experiences of others in the team because they understand that they have a functional relationship together and that the structure of that relationship will be improved by any individual members own improvement. By becoming 'interdisciplinary teams' at the 'systems level' we are likely to facilitate each other's self-development in experience of the system itself.

When investigating a phenomenological relationship one might ask:

1. What is the relationship?
2. How does the relationship function?
3. When was the relationship observed?
4. Why is the relationship present? In order to answer why you have to look at the supra-system and ask how.

## 2.10 Modeling, simulation and computation

Through descriptions it is possible to form simulations and improve understanding. To the extent what "you" simulate ends up looking like the real thing "you" can gain tremendous insight into how what "you" see came to be and how what "you" see can be controlled. Through simulation comes greater clarity of understanding and greater potential for control. In large part, the dynamics (relationships, rules) of any physical or conceptual systems can be modeled and simulated. Over time, modeling and simulation allows for ephemeralization (as in, procedures that allow for doing more with less input). More completely, modeling and simulation provide better information, and over time, better information allows for the doing of more [tasks, activities, etc.] with less [resources, energy, etc.].

There is a mental (conceptual) and material (physical real-world that can be understood in meaning:

1. **Concept models** (of conceptualizations) of that world must include concepts in relationship to derive meaning. Concepts have models (i.e., concept models), and are shown in static images or static images with math values (numerical value sets) that are constant or variable. A whole societal system can be conceived of.
2. **Simulations** (of physical objects) must include objects in motion to derive meaning; i.e., to derive understanding with objects. Simulations are object models in motion (i.e., static animations and dynamic simulations). Computation is the computer execution of a mathematical model using numbers (i.e., sequencing) and logical operators (by level); whereas, simulation mimics a process or a system. A whole societal system can be simulated.

**NOTE:** *Simulations and concept models must be used together to completely explain; wherein concept models and definitions describe, and simulations explain (note: both are visualizations for a complete explanation that includes: definitions used consistently, descriptions, and explanations).*

A 'model' visualizes patterns of information flowing through a system. A model is necessary for service design practice, and for the engineering or operating of any system. Much of design practice comes down to two models:

1. A model of the current situation.
2. A model of the preferred situation.

Examples of models include:

- Site maps, charts, application flow diagrams, and service blueprints.

Simulation is the imitation of the operation of a real-world process or system over time. The act of simulating something first requires that a model (or theory) be developed; this model represents the key characteristics or behaviors/functions of the selected physical or abstract system or process. The model represents the system itself, whereas the simulation represents the dynamic operation of the system over time. Simulations are predictions rather than observations. A 'decision space' is a calculated simulation. Science provides observations and the systems methodology generates simulations, which are then re-tested against observation. Processes are simulated to see whether the particular simulation leads to (more or less) the same behavior that is observed in reality (or in experiments). Empirical observation, simulations, and experiments are all valid methods that need to be combined.

Fundamentally, all systems have dynamics (influences and processes) that can be modelled and simulated. Some dynamics are static, and others vary by input. A 'living system' is a system that changes [internally] over time in response to inputs. At each instant of time, a living system is in a specific state determined by the probabilities of prior states. The 'state' describes how the system is at a given time. The 'state space' refers to the totality of all the states the system might "take on" or be capable of "becoming". Alternatively, in a 'memoryless system' (or 'static system'), the outputs depend only on the present values of its inputs. In other words, memoryless systems do not depend on any past input. Whereas, in a dynamic system the outputs depend on the present and past values of its inputs.

A "reason" is the initiation/start of a model of reality. Until you have established that you can learn something about the universe the word reason no concept (i.e., no meaning). One of the functional abilities of the brain is model forming. The brain has a functional ability to form models of the world. Forming models about reality serves a functional purpose, a social purpose, a decision purpose, a material purpose, and a lifestyle purpose, leading to the operation of functional services systems that really work for all of humankind.

### 2.10.1 Real world models and computers

Real-world models are systems, characterized by rules, that capture (mirror or pattern) how aspects of the real-world change. Through the application of a model, rules can be used to understand and to control state changes in the real-world. Using models, rules often describe state changes in the form of 0 and 1:

**0 = Old system state** (prior state; earlier iteration of environment) - how parts were interrelated before applying the rule.

**1 = New system state** (output state; next

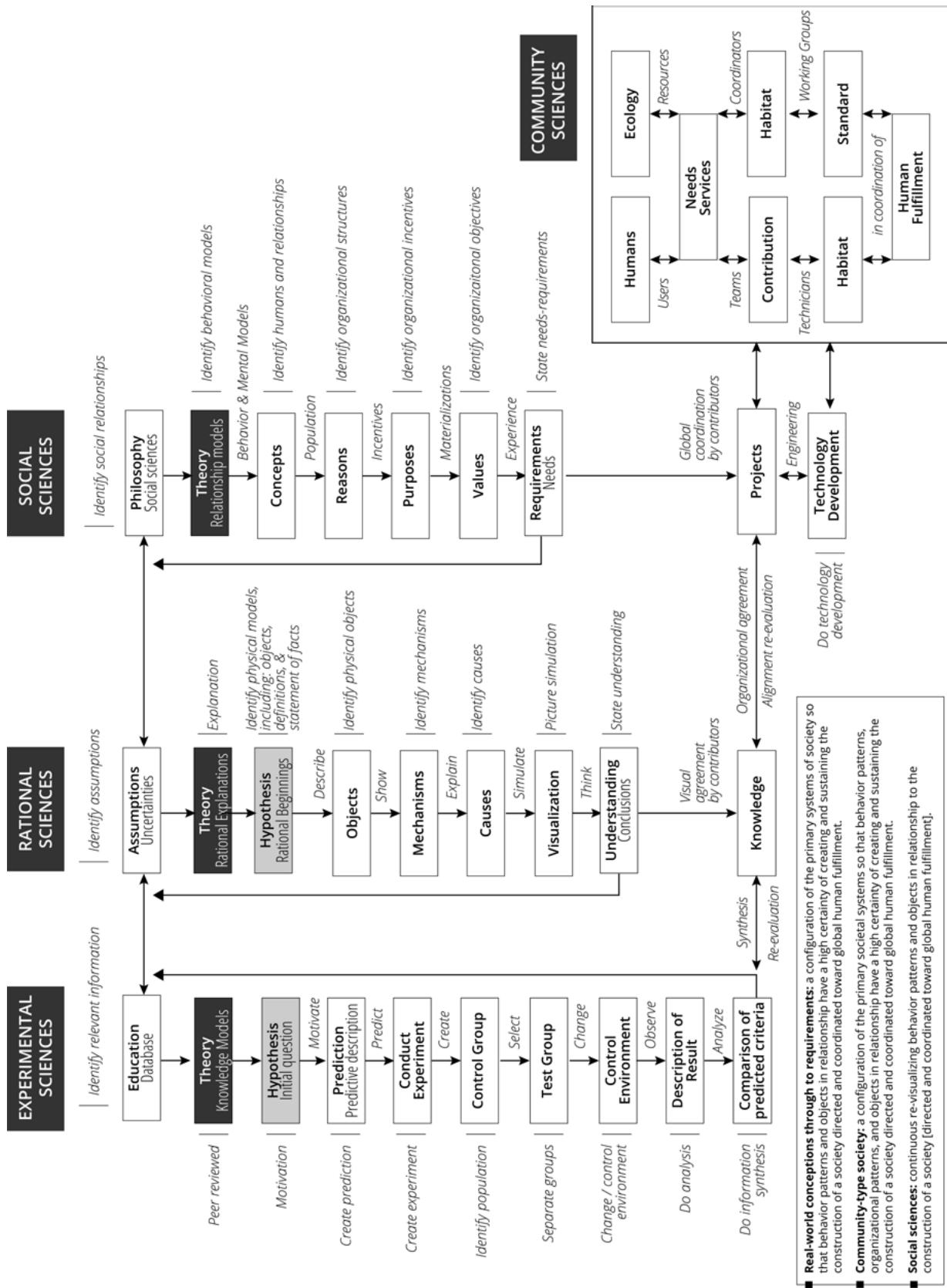


Figure 21. Depiction of three methods of science. Title: model-social-approach-science-experimental-rational-theory

*iteration of environment) - how parts are interrelated after applying the rule.*

*Or, 0 may represent the current state, and 1 may represent a probable (e.g., planned) future state.*

Properties of the world as described in terms of:

1. Observation - Natural[ly observable] units (of sensation). Understood through physical measurements.
  - A. Rules involve observation of sensation.
2. Quality of being useful - True or false, or some degree of complexity therein. Understood through visualization and experimentation, as well as computation and simulation.
  - A. Rules involve logic (conceptual patterns) and arithmetic (mathematical patterns).
3. Direction conceptualization - Value orientations [when/where arranged by humans]. Understood through socio-technical life experience.
  - A. Rules involve socio-technical interrelationships within a given environment.

*Note that these properties are effectively the direct outputs of any societies economic system. Through the economy, services and objects (sensations) become available (accessible) to the population, wherein the arrangement (configuration) of the population in interrelationship with an environment of services and products orients the population toward some definable direction.*

As humans understand more about the world, their models become more unified and integrated. Further, their ability to use materiality to facilitate their understanding and control over the world is likely to increase as models become more accurate and technologies become more capable.

A digital computer, for instance, is a technology that allows for directly automating, extensionally, pattern processes. Digital computers are physical logic machines made of electronic binary circuits that literally embody (are the patterned representation of) rules of logic. Computers directly encode those logic rules that are used for making models and understanding models. In other words, computers perform computations in the form of executed programs. Programs encode rules from models, written in programming language(s). Programming languages are based in logic and arithmetic, and therefore, can be used with computers (informational-material encoding and operating platforms).

## 2.10.2 Real-world modeling

Haber (2015) clarifies modeling as the process of making explicit one's knowledge and assumptions about a certain system through the generation of a representative

replication. By using this replication, instead of the actual system, a model provides users (researchers, etc.) with a synthetic environment that can be used to predict (test, experiment, etc.) without implications on the original system (Drogoul et al., 1994). This is especially important if experimenting in the actual system is impossible or to be avoided due to moral, methodological, or safety reasons (Goldspink, 2002). But, modeling also makes it possible to investigate the working of systems that do not actually exist in the modelled state. Therefore creating models may even allow for predictions about possible system performance (Epstein, 2008; Bandini et al., 2009). Investigating the effects of modeling choices in the replicated system is called simulation. Unlike analytical models, simulations are not solved, but run (executed); and, the changes of system states can be observed at any point in time. This provides an insight into system dynamics, rather than just predicting the output of a system based on specific inputs' (Siebers et al., 2008:1).

### 2.10.3 Real-world computing

A software program maps the logic and arithmetic rules that models are composed of to a form that a computer can use. The execution of the program can extend the modeling abilities of humans and provide more useful data. The iterative systems model described herein, involves: real-world phenomena, the building of models and predicting of behavior, the executing of models in computing systems. Models, programs and computers are all connected by logic, arithmetic, and ultimately, mathematics.

Logic exists for arguing (analyzing or reasoning) about claims (information) being true or false. In mathematics, a proof is a formal demonstration of a formula that is always true (i.e., theorem). Therein, axioms are base true formula. Then, rules of inference prove theorems from axioms and prior theorems.

Calculations can be done on formula. The mathematics can be thought of as computation, and the formula are software. For the software to exist there must be some object, hardware, that does the calculation. Calculation requires a tool to perform the calculation. Note here that tally sticks (notches in stick or bone) are one of the earliest known material encoded calculation tools (they are also thought to be where the Roman Numerals came from). A tally stick is a physical system, the same as a goat herder with a population of goats are a physical system. Each time the goat herder lets a goat into another field, s/he notches a stick. In the end, there are as many notes on the stick as there are goats in the next field. In other words, accurate information about the real physical world has been encoded into the physical world, which may then be shared by those who understand its meaning (i.e., pattern of each notch representing one goat and a different field). This computing tool can then be used to count and check the number of goats transferring in total between fields, and eventually,

a user could use the system to control the transfer of all goats between all fields. Imagine the concept of resources in place of goats and the concept of economic sectors in place of fields. Using highly complex digital computing systems (of which tally sticks were an early version of) it is possible to count, check, and control for the allocation of all resources transferred between all economic sectors at a global level. Tally sticks work as an information processing (calculation tool), just as computers do, because they are all physical systems (i. E., the goats, resources, sticks and computers are all physical systems), which consciousness is capable of understanding through a physical interface. The relationship between the physical system of goats and fields is preserved as an carving (engraving or encoding) on a tally stick. All maths is essentially a matter of making small physical systems or tools that model the world directly (as a one-to-one relationship). Then, an abacus is a more complex and useful computational physical tool. The, a computer is an even more complex and useful computational physical tool. All of euclidean geometry is a set of rules, which may be physically visualized by a physical drafting tools. Even a slate and a chalk in digital or physical form is used to do the operations and show to another that the operation has been done. The process is that a conscious observer observes the state change of an abacus or slate, the conscious observer remembers a rule that causes that state change, the conscious observer then acts to move beads in the abacus, or to write something down in the case of the slate. In this sense, a computer is a unification of maths, memory, and the sequencer in a physical object, or objects. And, prior to the digital computer, this is what a computer meant, it meant a person who knew maths working with a slate or abacus like tool who remembers states and executes rules.

It was realized by Turing and others that machines (i.e., mechanization) could be used to do computations (replacing human mathematicians), if a machine could be built that (i.e.,the following is all that a mathematician does):

1. Could detect some number of [physical] symbols at a time.
2. Have finite internal memory or state.
3. Have a set of rules in read only memory.
4. Has a read write memory to record calculations.

Turing proposed an actual machine that used purely mechanical procedures that could do the same process as a human mathematician. These characteristics are the characteristics for a universal computing device that can perform any computation that anyone can do, including a mathematician. Fundamentally, computers can be applied to computations that correspond to something that exists in the real world, and the real computations are always done with physical devices. The effectiveness of mathematics is always the effectiveness of a computational procedure for modeling some part of the

real world (e.g.,the number of sheep leaving a field, or, the number of resources and their trans-fer/-formations between economic sectors in a habitat). A procedure is a set of rules that are expected when used to lead to the same answer or result.

### 3 The methods of science

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*A.k.a., The scientific approach, scientific thinking, discovery.*

Systems engineering is informed, in part, via the methods of science in their ability to provide validity and to evolve human knowledgeable-understanding and intentional control over the world -- description (mathematics) and explanation (visualization). The methods of science refer to a body of processes (or techniques) of investigation and understanding of natural phenomena and how to control them. This is accomplished through the most modern methods of questioning, observing and learning, measurement, testing and experimentation, visualization and understanding, and integration, applied to the acquisition of information, correcting previous knowledge, and demonstrating the validity of a particular understanding. These iterative understandings may be useful in solving problems involving our common fulfillment. The method(s) can be applied at the social level for the purposes of social concern. The specific purpose of science is to expand our knowledge of our shared reality; it facilitates an understanding of our shared environment. At a practical level, science is a useful standard [tool] for better understanding our real, existent world. And, through more accurate information we arrive at more accurate decisions about global human fulfillment. Science is about model (pattern) creation and model (pattern) validation (certainty). Model creation involves the rational scientific method (visual understanding (engineering), and model validation (observational control research) involves the experimental scientific method.

In part, it is possible to understand the world through individuals' interactions with it and observations of it, of which science is one method of interaction. Science is the intellectual and practical activity encompassing the systematic study of the world through observation, experimentation, explanation (visualization), and intentional discernment (integration). There are many ways to see the world, such as through: politics, belief, tradition, superstition, money, science, systems. When someone looks through the lens of a 'systems worldview' the method(s) of science is not artificially restricted in its application; it can also be applied to the social system, to the economic systems, the material system, the habitat system, the decision system, the learning system, and in its application, more greatly clarify humanity's understanding of itself and control over its environment. There is a natural feedback system built into physical reality, and it is mirrored in the human brain, and in consciousness itself, to inquire (a.k.a, investigate, learn, integrate, create, play, etc.) further.

The methods of science are used to discover more about the natural world and its cause and effect relationships. Science is identifying cause and effect relationships (with objects, concepts, and mathematical descriptions). And, their explanations are tested using

sensed and causally controlled with evidence (certainty) from the natural (a.k.a., real) world; wherein; the explanations are understood through visualization (as visually understandable models). Evidence of a theory ought not convince people of the validity of a theory without accompanying understanding and direct, conscious life experience. Evidence of causality is experienced as conscious sensation, observations and measurements that facilitate the understanding of a natural [law] phenomenon, which are always modeled for [visual] understanding - evidence is contextually sensed data and intentional understanding. Causality is about feeding forward of the awareness of systems so that they may be understood, predicted, and intentionally evolved for control over the environment and engineering of human fulfillment. Here, as opposed to within the social>value>justice-system, a "law" is something that is deterministic (a.k.a., physics-consciousness [absolute] material). Causality takes place in time, so causality is necessarily a temporal process. Scientific causality is that which can be visually and experimentally explained; whereas, engineered causality is that which can be visually simulated and constructed to be operated. In its most general sense, science involves: *observation, identification, description, experimental investigation, and theoretical explanation (visualizations)* of phenomena. Experimental evidence is evident to all observers who have the ability to sense it (process it as a 'signal') and "witness it", and understand and create new visual models of what occurred (as a result) and what could occur (in the future, as a design).

Causality is the means humanity uses to perceptually "source down" (i.e., look down and more closely) to that which is trying to be understand, to the true root origins and causes of human issues and natural phenomena, so that humanity can correct, re-structure and re-orient its systems [toward synthesized patterns that more certainly cause our well-being and overall fulfillment. The courses-of-action we do or don't take are naturally based upon [to a large extent] whatever we establish as the cause of something, so developing a shared working approach (i.e., scientific inquiry) toward the understanding of causality can be influential not only in finding optimal solutions, but in getting on the same direction as a global population. Herein, our effort is directed toward uncovering to the root causes to social and ecological problems, as it is easy to become lost or stop short of where the problems really lie.

The methods of science have their basis in the field of empirical research and rational inquiry. Research and inquiry lead to the discovery of knowledge. It is the way we find out what works best; it is partially how we progress. The scientific method is [in part] about correcting previous "knowledge" using a method based upon gathering measurable evidence via repeatedly tested hypothesis against the benchmark of the natural world to "prove" validity. Ideas are valid to the extent that there is sufficient information and cause for the probable certainty of the idea's validity. We can test our changes

to our environments to see if we get the results we expect; which we add to the base of understanding from which we develop fulfillment. And, by devising better tests we can refine our theories. The scientific method never proposes "truth"; instead, it continually seeks it through empirical observation and measurement upon the benchmark of the reality we all share. Science says, "Statistically, this is highly suggestive of something we would call truth." Here, "truth" becomes a process of factual refinement, a pattern of discovery and creation. Herein, truth is a process - a search for a consistent empirical regularity. The beauty of the "laws of nature" are that they still remain "true" whether you believe them or not. Practically speaking, this is why we must use "nature's laws" to inform and guide our community. Yet, no laws are ever broken when science encounter a new discovery. In science, the "truth" is discoverable and emergently knowable.

The scientific methods have two general purposes of discovering [socio-technical] controls and visualizing [socio-technical] explanations:

1. The use of scientific experimental methods demonstrate, and statistical mathematics to predict with confidence, an outcome with mathematical certainty by testing/experimentation and changing/controlling variables.
2. The use of a scientific rational method is used to explain and visualize the socio-technical conception and material operation of reality (phenomena) and society (in reality).

The scientific approach has gained credibility because of the success in the approach in improving our humankind's everyday lives. The credibility was the result of adherence to a multi-step process of discovery and validation, and data storage. People often mistake the individual steps, the tools or methods of science, as being sufficient to indicate that the approach is scientific. That is simply wrong. You can read all of the scientific literature to come up with an inspiration for a theory, but you have not completed the experimental scientific process until you have designed an experiment to provide reproducible, unbiased data to support the theory. You can do all sorts of calculations with equations and computer models, but you have not completed the scientific process until the results of predictions are verified by unbiased observation. You can do all sorts of clinical and epidemiological observations, but you have not completed the scientific process until you have performed a prospective trial. You can do all sorts of decision analysis and mathematical logic, but the scientific process is not completed until the procedure is prospectively tested.

Nature is fact[ual], it is truth and reality, is real-world certainty about relationships; which, is inherent and objectively discoverable through observation,

experience, and integrated synthetic-information model optimization. "Source dynamics" (or, the technically dynamic principles of which nature is systematically sourced and accessible) are existing conditions that are binding and immutable (a.k.a., "physics"). They are the deterministic components, as "laws", of "creation" (i.e., the creation of potential over a decision space). There are real limitations in this material reality, and there are decisions that can lead to the real world gain or loss of global human fulfillment.

The evidence exists in the real limitations that consciousness bumps up against and senses (Read: identifies sensorially), and visualizes. Hence, there are "design problems" because there are limitations; there are real limitations in this technical reality. Consciousness cannot simply imagine flight and have its body respond to the thought by flying up into the air [as might occur in a "lucid" dream]. Yet, knowledge, in truth and certainty, starts with imagination and curiosity, and it involves a structured process of inquiry that maintains the ability to re-orient toward that which exists. Thus far in known history humankind has been using this thing called 'language'; the language of thought integration and expression has visual properties. These visual properties represent understanding when creating and sharing models, and technology when engineering and constructing new models; for describing that which exists. And, what is society describing with this technology but problems with solutions in our fulfillment [to varying degrees].

Essentially, the scientific method(s) allow us to measure the effects of our models of reality, and to improve them so that we know more about how to fulfill our needs and maintain alignment with our purpose. If we identify our needs and make them objective [to some degree], then science will be able to provide data toward their optimized fulfillment. Essentially, scientific work is about discovering increasingly accurate descriptions of reality and applying the results for mutual technological benefit [via synthesis into a model that we use to commonly orient society toward greater fulfillment]. Scientific models provide information in the coordination of decisions toward all forms of progress. And, all knowledge we gain through the use of the scientific method remains emergent in our modelled understanding of nature. Wherein, nature represents the design patterns of the universe. Essentially, everything is just science to the universe. And fundamentally, we are scientifically reliant on the processes that take place on this planet and provide for our life needs.

Science is an epistemology, it is a way of knowing (or, coming to know). Science is a method that transcends ideology and personal belief in its acquisition of reliable information of how the world really works. It attempts to create predictable models of feedback that are rigorously examined, tested, and replicated until an emerging "consensus" develops and the principles thereof become a part of our technically oriented community. The overarching aim of science is that of

'self-correction' and 'standards of evidence'. Wherein, the "scientific consensus" is about the replication of experiments that agree with each other and lead to an emergent scientific truth that is understood. Science is not done via consensus; consensus is the result of doing science. In science, consensus becomes the emergent expression of a verified logical argument.

The "scientific feedback mechanism" is the experience of observing the results of a specified behaviour or controlled processes. It is a feedback mechanism that all living organisms have to greater and lesser degrees - humans have always had it. Repeatedly controlled evidential observation (scientific knowledge) leads to a pattern of experience re-organized into a model (theory) reflecting the total phenomena. Science may be generally divided into that which is hypothetical, theoretical, and empirical (as in, an objective physical experiment). Science is [in part] the search for [identifiable] patterns in nature (Read: the world around us) through which models are created to help us to understand, to explain, and to design. A model is a structure that depicts an understanding of how something works. It is the way in which we think and talk about something [so that it makes sense].

In application, science involves the emergent discovery of universal principles that may be applied to social concern to create better living and better science [for humanity]. Therein, nature's way provides an example. Science involves a method of inquiry into nature specifically designed to derive predictable technical principles from an existent system while accounting for all known influencing variables that can be accounted for given what is known. Note could be rephrased to state "... to derive predictable laws of existent properties". Principles are synthesized out of experience, which are then used to make a test of an invention that is developed into a comprehensive strategy (e.g., "economy"), which if left uninhibited will alter humankind's patterns [without its awareness]. Within a community-type society, the population considers a comprehensive fabric of mechanics so that individuals, and society at large, alter their patterns with awareness.

Science becomes both a body of evidentially verified knowledge that reflects the current understanding of the world as well as a set of processes for *discovering, verifying, refining, and operating within the bounds (limitations) of what is known* (i.e., knowledge, methods, and resources). Science is the only known way to produce reliable and verifiable knowledge -- knowledge that is verifiable and is accurate to that which has happened, so that better (for human fulfillment) can be built, together.

The application of the scientific method necessitates critical thinking and reasoning. Critical thinking involves [in part] the questioning of assumptions as well as the removal of contradiction through the application of analytical and logical thought to determine greater accuracy in the verification of identity. The questioning of assumptions is necessary for the method to duly fulfill its purpose. Herein, scientific reasoning involves

the concurrent application of abstractions or symbols in formal relationship to variables or dimensions within the context of probability and proportion.

The purpose of science is not that of duality, or "paradoxical non-integration". To say that science is "true" or "false" is a mistake of language, since it is not the sort of thing that can be true or false, but a set of methods for testing ideas against how things really are, not a claim, a belief system or an ideology. Black and white thinking eventually turns into belief. Belief is the enemy of adaptation because a belief is a self-imposed limit (on individual- and social-fulfillment); not necessarily an actual limit. There is something fundamentally different about being "open to a possibility" and "believing in it". When "you" believe "you" are no longer open to new information. If you "believe it", then you are no longer open for "it" to be different, and you don't have to collect any more data on "it"; essentially, you have become attached to "it" [without evidence for it]. Science is void of arbitrary restrictions to the acceptance of a set of results as evidence; it does not have attachments in its transparent usage. In science, everyone is on the same side. In science, if someone corrects your thinking, then they make you a better individual, a better "scientist". And yet, it is important to remember that science, as a tool, is always applied in-context.

In any society, the question must be asked, What is the environment within which "science" is said to exist? Is the environment within which science exists conducive to arriving at the best conclusions and the most accurate information? Therein, does information about the world have a monetary cost? Is information in society potentially useful for competitive advantage over others? If you want to understand anything will it cost you something? Fundamentally, the cost of information (i.e., information costing money) has social consequences, the principal of which is as a structural limiter on human potential for social understanding and cooperative development. Some forms of social and economic organization incentivize the skewing, manipulation, and obfuscation of data.

In scientific discovery, argument and progress come from a place of openly inquiring. Thus, those who hold beliefs will be frustrated by science because they are not open to questioning and discovering more accurate understandings.

The scientific method presents an opportunity for us to discover through our individual senses the "laws of nature", the technical principles of reality, for ourselves. Scientific discoveries discover more about the rules of the larger system of which we are a part. And, a systems methodology has the potential of telling us *why* the "laws" are what they are. In community, we use the technical principles of nature as a template for our adaptation [to the total environment]. Our [in simulation-encoded] designs are based on our emergent scientific understandings, that which has been demonstrated [to facilitate and align with our fulfillment].

Effectively, the systematization of scientific understanding comes from:

1. **Methodification** - creation and selection of a method ("being methodical").
2. **Rationalization** - visualizing objects and identifying their conceptual relationships ("being rational").
3. **Experimentation** - controlling [testing] and reporting observations ("being experimental").

Science requires a context for its definition:

1. **Research/experimental science** - Science is a systematic method that builds and organizes knowledge in the form of testable explanations and predictions about the universe. This science is all about data discovery by experimentally controlling systems, and observing and analyzing results. Experimental science discovers causes of effects. After analyzing the results, that data is then used to build (engineer) new technologies. In other words, research science experimentally control phenomenological systems and applied scientists (a.k.a., engineers) use that data to build technologies.
  - A. In in sense, society is the science of engineering how human and biospheric systems work together for global human and ecological fulfillment.
2. **Rational science's critique of general definition**
  - If science cannot explain in a rational manner, how can science test the explanation? What many scientists are testing is a description; they describe, but do not explain. Rational science is rational explanation; explanation of the real-world where there exist objects that occupy space in a real-world. Rational science explains causes via mechanisms through visualization of objects.
3. **Engineering production (technology development, technic engineering) applied science** - the sum of techniques, skills, methods, and processes used in the production of goods and services or in the accomplishment of objects. To develop technology someone does not have to understand the fundamental underlying mechanism, they simply have to work through trial and error. Simply because a technology is developed doesn't mean the developer understands the underlying mechanism. The creation and presence of a technology does not mean that the fundamental underlying mechanism is understood; it nor or may not be.
  - A. **Technology** - Technology is developing usable material systems that perform functions) by trial and error.

4. **Science engineering** - Certainty development (knowledge for socio-technical understanding) - is the data discovery by experimentally controlling systems and using that data to build technologies.
  - A. Society is the science of engineering how human and biospheric systems work together for global human and ecological fulfillment.

Summarily, science exists to describe, explain, and understand the natural world. Engineering exists to take these discoveries and construct a more fulfilled and thought-responsive environment.

**INSIGHT:** *The constituent parts of every system exist in a world of cause and effect.*

### 3.1 What are the methods of science?

There are two primary scientific methods (i.e., the methods of science):

1. **The experimental-mathematical scientific method:**
  - A. Science is interventional and descriptive of results. The results of this type of science are based on mathematics, including statistics (i.e., every scientific paper is based on statistics). Note: technically speaking, reviews of science (scientific literature reviews) are not science. Herein, science is interventional and experimental. In the early 21st century, many literature reviews are actually opinion pieces.
2. **The rational-visual scientific method:**
  - A. Science is rational explanation [of physical phenomena] through visualization (through images of objects and animation of objects, simulation) using objects to name and convey understanding. The real world requires rational visualization of objects understood.

**Table 22.** Simplified comparison between experimental (mathematical) science and rational science.

Experimental Science	Rational Science
Mathematical description and statistical analysis (statistical explanation)	Conceptual definition, visual naming, and visual explanation
Reasoning with math	Reasoning with objects
Experiment, evidence	Point to, draw
Describe, predict	Explain, define and visualize
Show math results	Understand
Formula knowledge, proof (and fact)	Objective causes, mechanisms
Mass	Objects
Observations, measurement	Existence
Numbers, units, number-lines	Dimensions, coordinates, vectors

Experimental Science	Rational Science
Displacement/distance travelled	Distance/separation
Energy, force, charge, field	Physical [object] mediators
Time	Location

Science uses mathematics (Read: universal pattern language) as a fundamental tool in order to have the ability to do the processes of:

- 1. Quantification (Read: counting, numbering):** Mathematics provides a precise way to quantify and measure (count) natural phenomena, allowing scientists to describe and analyze them with accuracy.
- 2. Predictive power (Read: controlling):** Mathematical models enable scientists to make predictions about the behavior of physical systems (i.e., their patterns), allow for the testing of hypotheses.
- 3. Communication (Read: defining):** Mathematics provides a universal language to communicate quantitative findings and pattern descriptions.
- 4. Application (Read: technology development):** Mathematics allows scientists to apply their findings to technological creation. Equations and formulas describe and facilitate the analysis of real-world situations using mathematical principles (i.e., the principles of patterns, logic).

Science uses visualization (Read: to see objects and the movement of objects) as a fundamental tool in order to have the ability to do the processes of:

- 1. Objectification:** Visualization requires identifying what exists (object with location).
- 2. Understanding power:** Visualization enables someone to point to an object and name it, and to understand how it moves (or, how multiple objects move).
- 3. Communication (Read: defining):** Mathematics provides a universal language to communicate quantitative findings and pattern descriptions.
- 4. Application (Read: technology development):** Mathematics allows scientists to apply their findings to technological creation. Equations and formulas describe and facilitate the analysis of real-world situations using mathematical principles (i.e., the principles of patterns, logic).

The experimental scientific method uses experimentation, mathematical descriptions, and statistical explanations. The scientist observes/studies the results of an experiment, and then, describes the observation. The question of understanding then arises: If "you" observe something does that mean "you" understand it? The scientific method is often stated as,

"the study of..." Yet, someone may study something all week, and still not understand it. To study something does not mean that it is understood. Studying itself does not give "you" understanding. The rational scientific method is about explanations. The scientist thinks through visualization of what is occurring or has been observed. Further, predictions can be done with equations. But, the fact that something can be predicted does not necessarily convey an explanation. For example, it is possible to predict the location and amount of light given off by the moon, but that doesn't necessarily mean someone understands orbital physics. An equation is a description, not an explanation. Instead, a visualization/simulation must be included to form a full explanation.

Experimental science is a description of the way the world works, and if someone doesn't know the way the world works, then s/he is not going to be able to correctly describe some things occurrence. Herein, it is important to remember that experimental science is a method for sampling reality in controlled environments. Experimental science is about the building and organizing of knowledge in the form of testable explanations and predictions, and statistical analysis on results of controlled experimentation, from which objective visual understanding is "rational understanding". Scientists use outcome statistics from data sets to communicate. Experimental science is the systematic nullification of hypotheses until a hypothesis is discovered that "scientists" can't yet nullify, and then it moves to a "theory" (Read: best working model). A "theory" is the current best guess/model for how the universe works until something disproves it. In this way, science is a practice for creating better and more usable models.

Rational science is a rational explanation for the way the world works, and if someone doesn't know the way the world works, then one is not going to be able to correctly understand some things occurrence. The language of rational physics is illustration; the proposal has to be able to illustrate a mechanism (a rational physical interpretation; something that can be visualized). Alternatively, the language of experimental physics is statistics, math. Certain aspects of reality can be symbolically defined in mathematical terms. Therein, calculation is a mathematical process of comprehension.

It is important to note here that science (experimental or rational) is not the reality system itself. Science is not reality itself, and therefore, may not be capable of being used to fully explain reality (if it is a larger system). Instead, science supports consciousness in discovering more about the system within which it exists. A system can only be understood by its existence in a larger system. And hence, science by itself cannot lead to the full understanding of consciousness; instead, that requires first-hand conscious experience.

Why are experimental science and rational science different? Because, experimental science uses predictions. A prediction is a description. If a prediction comes true, then the description is accurate. However, the description is not the explanation. Rational science

uses visualization (concept and object) to convey understanding. Together, experimental [mathematical] science and visualization [rational] science form systems science.

**MAXIM:** *Things are of scientific interest mainly based upon their capacity to be observed repeatedly. Therein, to observe regularities, "you" might have to look through something regular.*

### 3.2 Experimental-statistical science

*A.k.a., Maths science, the experimentation and statistical explanation method, experimental science, the scientific research method, the experimental-statistical scientific method, research science, the scientific process, the scientific research process, the scientific research method, the experimental scientific method, the experimental scientific process, the experimental method, the experimental scientific method, controlled observational research and statistical analysis, interventional science.*

Experimental science is the systematic study of the universe through experimentation and statistical analysis. An experiment is reproducible if experimenters can run the same experiment and get the same results at a later date. If an experiments is truly revealing some fundamental truth about the world, then that experiment should yield the same results, under the same conditions, anywhere and at any time. Interpreting results through experimentation and observation. The scientific method calls for the elaboration of a predictive model of the system under study. The model should reproduce the existing experimental results and should be predictive regarding future experiments. By performing these experiments we validate the model, or refine it to a better model that captures more facts about the system. Science works by studying problems in isolation. In science, if you want to show that a model is wrong (i.e., doesn't describe reality). All you have to do is make a prediction from that model, and then show that it doesn't accurately describe reality. Reality is the ultimate judge.

**NOTE:** *Experiments involve controlled testing and statistical analysis of the results.*

Science exists to help us predict so that we can design the improvement of the quality and fulfillment of our lives. Science is self-regulating because studies are repeated. Experimental science is working out what is likely and probable to happen.

In experimental science, correct prediction means that there may be some degree of understanding.

In experimental science, theory is a framework of testable predictions that accounts for all known evidence and can account for more evidence that is not yet known. The essential process of science is to duplicate the science and try and find something wrong with it.

Falsifiability means that there has to be some way of proving it wrong in order for it to be right. To be falsifiable in a physics viewpoint there has to be a physical experiment that shows (or verifies) the model, and could possibly show that the model is wrong. Experimental science often misses the assumptions that rational science is the foundation of rational science.

In an experimental scientific paper, the author is supposed to state:

1. What information was available.
2. What was done.
3. The results/conclusions from what was done.
4. What are the limits and the problems still left to be resolved.

More completely, an experimental scientific paper (a.k.a., scientific research paper) involves the following data categories and concerns:

1. An introduction to what are the numbers being collected.
2. What is the dependent variable?
3. What is the independent variable?
4. What was the population?
5. How long did it go for?
6. What were the controls?
7. What are the results?
8. What are the statistical procedures, statistical outcomes, and statistical inferences?
9. Be careful with conclusions because that is primarily where the researchers biases will show (conclusions are unnecessary).

The fundamental assumptions are:

1. The universe/reality exists. Currently we cannot have an observation independent of an existing universe/reality.
2. We/individuals can learn something about reality.
3. Models with predictive capability are more useful than models without. Here, there are two categories: models that have predictive capability, and models that do not have predictive capability. Science asks, does a specific model have predictive capability? If it does, then it is "robust". If it is highly robust (i.e., highly predictive), then it is called a theory. Theories are things with a high degree of predictive capability.
4. The brain is a pattern recognition, model forming system.

Science can only explain why things are the way that they are if there is an observed causal progression, a "history" (an information trace in an environment) that caused them to become the way that they are

- an iteration. Hence, scientific explanation requires verification and necessitates hypotheses that are vulnerable to falsification. Notice that the concept of falsification is based on the assumption that all facts are physical, because a physical experiment is required. A 'theory' is not a 'theory' if it cannot be tested. There must exist some experimental signal that can be triggered and observed.

The [experimental] scientific method assumes that a system with perfect integrity and optimization yields a singular extrapolation within its organization that one can test against observed results. Where the results of the test match the expectations of the scientific hypothesis, integrity exists between the cause and effect of the hypothesis by way of its methods and measures, which create a space of probable certainty. Where the results of the test do not match, the exact causal relationship delineated in the hypothesis does not exist.

The scientific method cannot accomplish anything if the phenomena being explored with it are not consistent by means of 'reliability' and 'verifiability'. It is important to bear in mind that validity and reliability are not an all or none issue, but a matter of probable degree. Fractional measurement is an important part of the scientific process, and therein, the two main measures in science are 'reliability' and 'validity':

**1. Reliability** - a measure of the internal consistency and stability of a measuring device. Measurements are reliable to the extent that they are repeatable and that any random influence which tends to make measurements different from occasion to occasion or circumstance to circumstance is a source of measurement error.

**2. Validity** - an indication of whether the measuring device measures what it claims to. Validity is the extent to which an instrument measures what it is supposed to measure. The question to ask is "how valid is this test for the decision that I need to make?" Or, "How valid is the interpretation I propose for the test?" We can divide and classify the types of validity into *logical* (or *non-empirical*) and *empirical*. Scientists distinguish among different types of validity, and different disciplines refer to the same type of validity using different names, which sometimes can create confusion about what type of validity is being assessed.

A. The validity of ideas is not subjective. The question of validity will be valid until the end of time, because the emergent nature of knowledge causes consciousness (and the information systems it creates) to change its understanding of every phenomena, given newly available information.

Science is not based upon the consensus of others' opinions. Our values and beliefs do not exist in a vacuum,

and as such, they have consequence on the rest of the world; therefore, it is of paramount importance that we continually update our values (and beliefs) as our abilities allow us using the tools available to us. Science is one of those tools that allows us to see past opinion to create more reliable and valid models which we may use to more greatly orient ourselves toward a higher potential of fulfillment.

The scientific method is a common systematic procedure used in science. Science is procedurally implemented. It consists of 4 tasked actions (or "steps") [performed by a "procedural construction entity"]:

1. **Observe reality:** Making any kind of measurements about a particular behaviour or effect within reality.
2. **Generate hypotheses:** Coming up with several different theories about why this behaviour is observed. For this the scientist looks for similarities between known phenomena and this newly observed effect.
3. **Extrapolate:** The most likely hypothesis is selected, refined and a blueprint for an experiment is designed which can be used to verify predictions on what kind of behaviour is to be expected under a particular set of initial conditions
4. **Verify theory** in a repeatable experiment: In order to verify the hypothesis an experiment is performed in order to check if the expected reaction to certain inputs fits with calculated output of the theory. It is important that these experiments are repeatable.

Herein, "labelling" improves (or, allows) for probing capability within a navigable environment. The right kind of strategy will prevent "you" from missing things as "you" navigate with the tool as 'science'. "Labelling" is a navigation strategy that is necessary for the facilitation of integration [at scale]. However, the labels themselves must be corrected for by [the integration of] evidence. Although "labelling can be disabling", it is also necessary to subject that very thought to integration.

The methods of science involve a systematic process of inquiry by which we "prove" or "disprove" our perspectives and evolve our knowledge and eventually our technologies. Fundamentally, the function of science is to produce better explanations - the drawing of increasingly appropriate connections, and information validation. The methods prevent aimless wandering that occupies time and resources without validating anything for its benefit.

The scientific reasoning process has been used in combination with other "naturalistic knowing processes" (e.g., shamanistic and other intentionally and introspectively mindful communication forms) used by many types of organizations across historic time to develop knowledge bases and build up an understanding of their environment.

The scientific method enables progress in a desired

direction by discovering and clarifying phenomenal regulations in reality. When engineers design systems-based solutions they desire the most updated scientific view to work with so that they have the information to arrive at optimal design decisions, to generate the most informed solution for a specific function. Engineers design for ‘function’.

We recognize the emergent nature of knowledge, and therefore, any knowledge we gain through the use of the methods of science is also in emergent in our awareness. Findings as a result of following scientific methods are always subject to review, replication, and scrutiny. And, as logical ideas emerge they are accepted or rejected on the basis of empirical evidence. Yet, not having evidence for something doesn’t mean that it isn’t relevant or unimportant. Even the definition of a human being has changed over the centuries and is still changing as we learn more.

We understand that things do not have to be shown by science in order to be true. Many things were obviously true and real before science discovered, modelled and questioned them. Science is simply an effective and natural way of collecting knowledge, testing theories, and discovering how things work. Yet, without questions (i.e., inquiry) there is no science. If questions are not asked, then scientific knowledge does not advance.

Nonetheless, is not “the only way”. At a personal level, direct conscious experience and observation, void of science, and engaged in pure mindfulness, are other valid means by which we gain personal knowledge of our world. Therein, ayahuasca and DMT (as biochemical information technologies), like science, are a structural tool for confronting one’s own presuppositions about oneself, others, and universal reality. Fundamentally, experience provides the potential for verification and greater certainty. Self-verification and re-verification are excellent (even, necessary) filters for accuracy.

Science, however, involves rules of alignment. It is a more socially specialized tool of investigation than just observation and direct experience (which are also part of science). Science is a designed investigation into the rule set that we are all bound by. Scientific thinking will emerge and flourish naturally if a conducive environment exists. Even children do have the ability to think scientifically as evidenced by Cook et al., (2011) and Mcshanahan (2011).

Scientific theories are not necessarily absolutely true, but they are by far a closer approximation to reality than speculation. If a measuring system is inconsistent it cannot be used as a working hypothesis. The very fact that computers and smartphones work as well as they do is because the scientific system has functional usefulness to humankind.

Science is not about “proof”, science is about evidence. Instead of using the term “proof”, one might say that the evidence is so far beyond chance, and very likely not to be artifacts or mistakes, that for all intents and purposes, the phenomena are real and the theory has a high degree of verifiable accuracy. Science is fundamentally

based on evidence. Proof is for mathematics and logic, which science uses as tools. The filter of logic describes a phenomenon and the scientific method provides independent verification. The scientific method depends on reason to deduce some conclusion(s) about the experiments and discoveries that have been made about how nature works. Herein, abstraction leads to reason, without which we cannot explain how a discovery may be useful or dangerous.

Mathematics is a fundamental means of description Statistics is all about finding statistical patterns in the form of regularity. A fundamental concept in statistics is that of correlation, not a minor concept but actually the heart of statistics in a sense. in the universe. Scientists use tools (mathematical and physical objects) to establish probable associations (or relationships) between variables in the real world. Statistics is one of these mathematical probability tools.

Alternatively, the basic mathematical structure used to model [networks] is called a graph. The graph is a fundamental concept in discrete mathematics (a.k.a., object versus statistical mathematics). Informally, we may view a graph as a structure consisting of a set of points and a set of lines joining these points. Such points are called vertices or nodes, and the lines between them are called edges or links. In principle, a graph is a pair  $G = (V, E)$  comprising a set  $V$  of vertices and a set  $E$  of edges, which are 2-element subsets of  $V$ . Graphs are very easy to represent and understand, and can be easily processed by computer programs. An edge between vertices  $u$  and  $v$  is given by the set (or unordered pair)  $\{u, v\}$ . Here,  $u$  and  $v$  are called endpoints of the edge. In the interests of simplicity, we may relabel an edge  $\{u, v\}$  as  $uv$  by identifying its endpoints. An edge whose two endpoints coincide is called a loop.

Many real world systems can be represented as graphed models [networks]. In a biological network, nodes and edges can represent different things. A node can be a protein, peptide, or non-protein biomolecule. Edges can be biological relationships, interactions, regulations, reactions, transformations, activation, inhibitions. One can construct bipartite or tripartite networks, for instance, between genes, proteins, and drugs. A dynamical system (i.e., a system that changes over time) has two aspects, a state space and a function, and is described in terms of them. Let us see what they are. Each change marks a state, and a change to values in the model, or even, the model itself.

Logic and mathematics require proofs. Experimental science has a requirement for evidence. And, science uses logical identification and integration, which involve logical proofing. However, the concept of ‘evidence’ leaves room for uncertainty and probability. Proof does not (i.e., deductive logic does not). In science there is always uncertainty. We haven’t discovered every aspect of reality, so we are left with probabilities of that which exists and “probable futures” of that which may exist.

Science involves the idea of theory - the idea that not everything is yet known, emergence. In all

scientific results there is room left for uncertainty and probability. Asking for proof in science is silly. It is nearly impossible to "prove" anything. Science does not produce proof(s), it produces and requires evidence. That "my" conclusion could be wrong is 1 in 10000, an assessment of error in an experiment. The assessment of the error is the bounds around the problem. Science does not come from observation (i.e., empiricism) by itself, for alone observation cannot demonstrate causation. Observation shows spatial proximity, but not causation. Causation is revealed through the integration of evidence from controlling (or "focusing") experimental inquiry (i.e., the scientific method) into usefully universal (or "fulfilling") theoretical models.

It is important to point out here that even the most objective and unbiased scientific research can have inaccuracies (or "be wrong"); human researchers are not infallible. Scientists track their identifiable errors (or even, potential errors). They identify statistical values that highlight the reality of an occurrence as opposed to chance. In statistics, this is called "significance". There are 'significance values' that facilitate the credibility of the results of an experiment.

Science asks fundamental questions about what are known as 'phenomena' - a fact, occurrence, or circumstance observed or observable:

1. How does a phenomenon emerge, develop, and disappear? (≈ the Aristotelian "material cause")
2. What form does a phenomenon take and why? (≈ the Aristotelian "formal cause")
3. What is the system within which the phenomenon operates? (≈ the Aristotelian "efficient cause")
4. For what purpose, goal, or intention does a phenomenon function? (≈ the Aristotelian "final cause")

Abstracting from Aristotle's writings, the four questions above generally fit his notions of material, formal, efficient, and final causes (or causation). However, they are not meant to be strict interpretations. In order to achieve progress in a discipline, one should always go beyond (i.e., develop, extend, build upon) the writing of others (not treat them as completed works that require the strictest adherence).

What matters in scientific research is:

1. Whether the conclusions drawn from an investigation are appropriate for the methods used and outcomes reported.
2. The quality and coherency of the research, not where it is published.
3. The cogency and import of the criticism, not where it is published.\*

\*Many peer review associations receive funding

*from industry and/or States, and have less than transparent ties to industry and/or States.*

A hypothesis is a proposed explanation (Read: reasoned guess) for a phenomenon. It is a testable proposition explaining the occurrence of a phenomenon or phenomena, often asserted as a conjecture to guide further investigation. In science, a hypothesis allows for the focus of attention (and inquiry). It is a tentative explanation derived from limited evidence in order to start another investigation to explain an event, phenomena, or mathematical model. It is also known as an "educated guess", as there is no assumption of truth involved. A hypothesis can be a single proposition or be made up of several propositions which will trigger a set of scientific experiments to provide evidence. If a proposition contains some component that defies testing or detection, then the proposition is not a scientific hypothesis. A hypothesis must also be 'falsifiable'. That is, there must be a possible negative answer (i.e., it must be possible to disprove or refute with evidence). Socially intelligent humans can consider a hypothesis and withhold 'belief' for 'evidence'.

For a hypothesis to be a scientific hypothesis it must be testable via the scientific method. In other words, falsifiability defines the inherent testability of any scientific hypothesis. Scientists generally base scientific hypotheses on previous observations that cannot satisfactorily be explained with the available scientific theories.

Hypothesis are subjective. That is why they must be tested against objective evidence. The only interpretation of the evidence is whether or not it contradicts the hypothesis. Any subjective implications based on the experimental data would require further testing.

Hypothesis testing is the critical thought process in the scientific method; assumptions must be tested. And, the two potential errors when testing an assumption are: first, rejecting the null hypothesis ( $H_0$ , original assumption) for the alternative ( $H_1$ , #1 assumption), and second, not rejecting the null hypothesis.

Even though the words "hypothesis" and "theory" are often used synonymously, a scientific hypothesis is not the same as a scientific theory. A scientific hypothesis is a proposed explanation, a 'hypothetical model', of a phenomenon that still has to be rigorously tested. In contrast, a scientific theory has undergone extensive testing and is generally accepted to be the accurate explanation, or 'theoretical model', behind an observation. It is a coherent set of propositions that explain a class of phenomena, that are supported by extensive factual evidence, and that may be used for prediction of future observations [through the restructuring of information based upon their principles]. It is formed out of a statistical preponderance of corroborating evidence. A 'working hypothesis' is a provisionally accepted 'information set' proposed for further research. A 'theory' usually includes several different hypotheses - each of which must have withstood all attempts to prove them "false". A scientific

theory explains observations and laws by providing the mechanism [of action] that makes them work.

Every experimental scientific theory begins with certain premises or assumptions; from that conclusions are derived or deduced, and then, experiments are designed to test the conclusions or predictions of the theory in a real world. If conclusions match theory expectations /predictions, then the theory remains, and if not, the theory changes. If, however, the conclusions are not deduced from the premises validly (as in, they don't contradict), then the theory is wrong (partly or completely). Also, the conclusion could happen to be right, but the process of reasoning that gets to that conclusion is wrong. Theories are either rejected or corrected. A correct theory accounts for what is observed.

A theory must also be falsifiable in order to be valuable. If a theory is not falsifiable, then it is not scientific. A theory is only as good as what it able to predict. Someone has to be able to do a controlled experiment to show that what is being claimed is or is not going to happen (is certain to happen).

A scientific theory is the confirmation of not only that which is known, but also of that which is unknown. All theories maintain the claim that, "this theory is what we know under these conditions up to this point in time". Theories leave open the idea that at some point in the future one might discover new information, new realizations, and new conditions that one is currently unaware of. A scientist speaks the truth when saying, "Maybe we don't know everything, but this is what we do know up until this point".

A 'fact' is an undeniable observation intended to accurately describe an object or event. Facts add up to theories. In other words, theories make use of facts. Theories tell us not only what will happen, but why. They're created to describe facts and relationships between facts. They're used to predict facts and to explain facts.

Take note if you do not know this already, but there are no longer any "laws" in science. All the things they told you were "laws" in school, scientists now use the word "theory" for them. "Laws of nature" are now "theoretical descriptions of regularities" in nature. No laws are ever broken when a new discovery is encountered.

A theory is a model that identifies, as accurately as currently understood, the patterned regulation of phenomenological space. The application of the concept of patterning, as a "representation of something simpler", to phenomena is a useful way to model the world. Objectivity makes no claim of permanence. The only thing science presupposes is the existence of coherent, consistent, and continuous relationships.

Every scientific model principally involves the questions of whether the model is accurate and enables the prediction of what is going to happen: does it explain all the things you know that happened, and does it explain everything that people knew in times past? If the model works, then it is a good theory, but it is always

provisional. As soon as you start to believe you know everything and you have "all the edges tied down", you will [if open to it] discover a new or contradictory relationship. Good scientists always leave their models "open ended" and are always open to learning more, so that they might improve their models.

Scientific results are only limited by the questions asked and the universal boundaries in which they are asked. No matter how strongly a theory is supported by empirical evidence, it is always theoretically conceivable that one day, some data will come in that will force the scientists to modify or even eliminate the theory. Even if the scientists are 99.99% certain that the theory is "true", it is philosophically incorrect to say that it is 100% true and to call it the Truth with the capital T.

Yet, 'truth' is that which has undergone the actuality of occurring. It is that which has occurred and is occurring. Scientifically speaking, it is the collapse of the wave functions of possibility into actuality. There is possibility that exists in the present moment and in some future moment that wave function of possibility, of all the things that are possible in the now at some future point will collapse to become that which actually has occurred in the past and are occurring in the present.

All individuals with common sense instruments and conceptual minds have the potential of observing the same existence. Two people look at the color red: One person can point to it and the other can say, "that is the color red". Hence, science is based on the correspondence theory of truth, and it is why the scientific method works. The correspondence theory of truth is the view that truth is correspondence to a fact. Truth is concurrent with that which is. That which is can be verified to be so through experiment. Science relies on repeatable experiments for verification. And, when an controlled experiment is completed all observers to that experiment observe (or sense) the same actions and relationships (or at least they have the potential if their own sensory and cognitive instruments are functionally operative). In other words, all who see the experiment can correlate that observation; so that is "true".

Experimental science in its most pure form is the unbiased search, the open inquiry, for natural explanations for all phenomena (i.e., all behavioral signals); and as observational sensory evidence it has the following attributes:

1. **Descriptive of phenomenological relationships (predictive)** - has written text, and mathematical-counting, descriptions that are predictive.
2. **Statistical** - has had statistical methods applied.
3. **Consistent** - internally and externally consistent; unifying conclusions. Something is more likely to be true if scientific experimental control situations (Read: experiments) are consistently predict correctly.
4. **Repeatable (replicability)** - the same types of situations/actions lead to the same results.

5. **Correctable** and **dynamic** (re-evaluation)- changes are made as new information discovered.
6. **Empirically testable** and **falsifiable** (falsifiability)- based upon controlled and repeated **experiments** and **evidence**; includes observations, predictions, and controlled verification.
7. **Parsimonious** - careful and sparing in proposed entities or explanations; Occam's razor. Note that being parsimonious can be useful, but it can also be an impediment to understanding a complex and dynamic system. There is also the saying, "Be careful with Occam's razor, for it can cut you".
8. **Progressive** (integratable) - achieves all that previous theories have and more; accurate and non-contradictory integration.
9. **Tentative** (emergent) - admits that there may be more to know rather than asserting certainty, emergent.
10. **Useful** (applicable) - describes and explains observed phenomena with a rational mechanism, and may be applied toward function optimization and human extensionality (i.e., technology).

The constants of nature are precise and knowable, or at least probable approximations of them are, and the universe is clearly highly self-regulating or we wouldn't exist. This scientific method is primarily an analytical approach to the acquisition of knowledge and to problem solving. A correct analysis, and eventual solution, requires accurate and factuality (a.k.a., certainty) of information (i.e., data with knowledge certainty of the result of a controlled situation). The analytical approach separates a whole into its constituent parts in order to study the parts (name them, observe them, and their relations independently).

**MAXIM:** *Things are of scientific interest mainly based upon their capacity to be observed repeatedly. Therein, to observe regularities, "you" might have to look through something regular.*

Science is unique in that it involves the statistical verification (a.k.a., "PhD" academic level, which stands for doctor of philosophy) of its own methods. The methods of science are transparently fed into the new refresh of our current model of reality, which represent an unbiased approach to the most developed theory. Once we experience a signalled frequency, then we can begin the process of isolation. The more we can control the isolation of the signal, the more closely we are targeting the source of the signals frequency.

The application of the scientific method involves controls - controls on the conditions of the experiment and under which a given phenomena takes place, in order to conduct research and results analysis. Manipulation of the environment in an experiment provides a way to minimize the number of alternate explanations for the data and increases the likelihood of arriving at the

correct conclusion, prediction, in the future (for further inquiry and for technical engineering purposes). In many experiments, a "control group" is a form of such control [about the source of a signal and intentional control over it]. Herein, it is relevant to note that 'observational studies' find *associative descriptions* only. Non-controlled observational data generates *correlational descriptives* (description) as opposed to *causative visualizations (causation)* descriptions, and this type of category of data cannot be used to draw scientific [rational-visual] conclusions; yet, such data can be used to facilitate the formation of a hypothesis. Highly controlled studies can be used to draw resulting statistical [predictable control] conclusions. And, if results show that there is no correlation; that provides evidence ("proves") there is no causation; because, there has to be at least correlation if there is a cause and effect relationship.

Controlled research science demands significant sample groups, peer analysis ("peer review"), independent repetition of results, and double-blind experiments to filter out anomalies as well as honest human error. There no scientific study or experimental design in which individuals can learn anything of scientific value without a control group, certainly not about safety and efficacy.

**APHORISM:** *The science of today may be disproven by the science of tomorrow.*

The more general purpose of science is to create hypotheses, but also to destroy them, to discover, and to learn. Science is explanation so that other people can understand, so we can evolve and fulfill together. In the literature, the word science has many definitions. Those definitions include, but are not limited to:

1. Science involves observation, identification, description, experimental investigation, and theoretical explanation of phenomena.
2. Science is the systematic study of the structure and behavior of the physical and natural world through observation and experiment.
3. Science forms predictive, and hence, useful models of utility about reality.
4. Science is the systematic building and organizing of knowledge in the form of testable explanations and predictions about the universe.
5. Science is understanding objects and mechanisms in a physical environment.
6. Science involves conscious experience in a spatial environment and creation in a spatial environment.

In science,

1. There are things which exist, and have been verified.
2. There are things which exist, and have not been verified to exist.

### 3. There are self-contradictory entities, which cannot exist.

In general, science is a process for discovering and codifying an understanding of how objects function and interact with one another. Those objects must exist somehow in the real world (i.e., they must have some real embodiment). Science is referred to as an objective process, in part, because science is concerned with real world objects that may be commonly sensed and understood by humans. Fundamentally, in science, there is a lot to be learned from investigating all possibilities; though all possibilities may not be capable or desirable to be explored.

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Science is about modeling and predicting the behavior of nature, not what nature is, essentially, because science is a method in the system of nature. By modeling and predicting nature, inside the natural system, organisms can create technology that extends their own functionality. Science is a method for predicting and modeling behavior. Modeling appears innate to entities with the capability of integrating an adaptive response to an environmental stimulus. As a process of discovery and integration, science may inform the construction of models and tools that facilitate the efficiency of self-directed creation within a physical "thought-responsive" space. When we do science, through discover to self-integration, our understandings lead to new creations.

Scientific facts are determined by evidence (in experimental science) and visualization (in rational science), not consensus. Both evidence and visualization are a form of verification. Science is the way we know how nature works.

Science is a self-correcting process (the self-correcting process for the systems engineering). And yet, It is possible during scientific discovery to build inaccurate findings on previous inaccurate findings, compounding the inaccuracy. Full retraction of inaccurate findings is easily to reduce this effect.

Science, done properly, is bounded by a set of rules and practices that help to distinguish reality from fantasy, objectivity from subjectivity. The rule-set that composes this physical reality does not change with time (i.e., the laws of physics do not change with time). However, our understanding of this reality system may change with time as we discover and learn more about it. The laws of physics remain the same across all frames of reference. Physics [as a source of knowledge] is the fundamental modeling and understanding of reality. The laws (Read: rules/principles) of physics, and engineering therein, work whether humans believe in them or not.

The world operates via rules, which means it is predictable to some degree; it is independent of culture and language. If people share a blueprint or standard, it has uniform interpretation among those people. There is no cultural way of building something to technical specification, there is an engineered, mathematical and technical way. Science is about learning about the rule-set, and unless someone thinks s/he knows everything there is to know, s/he is going to learn something new in time and have a change of mind.

In the early 21st century, there is huge amounts of [research] money, prestige, power, and social influence associated with scientific publishing and consulting. When there is socio-economic vested interest, there is highly likely to be manipulation. Further, amid valid science, it is easy to create an environment of confusion by paying off just a few spokesmen.

Humanity can use scientific study (i.e., the scientific study of the world) to harmonize humanity's behavior with nature. Science is an important part of an emergent social system. An established system is unlikely to see a value in science, because one of the advantages of using science to approaching humankind's problems is that it advances humankind. Those who apply science without market and authoritarian filters are unlikely to hold onto old, outdated, falsified ideas and concepts. Established systems do not seek advancement or evolution. In an emergent system there are no final frontiers. Science necessitates the rejection of the appeal to authority.

#### 3.2.1 The experimental scientific method

The method of experimental/research science:

- Through observation, experimentation, measurement, collection of data, calculation, and statistical analysis, experimental scientists reveal progressively better answers to how the universe works.

The data classifications of experimentally controlled research are:

1. Participant and non-participant observations.
2. Structured and unstructured observations.
3. Controlled and uncontrolled observations.
4. Measurement ordering and numbering (mathematical, statistical, and spatial coordinate) observations.

Therefore, the experimental scientific method can be generalized to:

1. Make observation.
2. Describe behavior.
  - A. Describe observation and recording of the behavior of individuals for the purpose of describing such behavior.
3. Ask a question and state assumptions.

- A. Inquire after description of individuals for the purpose of discovering new [existent information] relationships.
4. Form a hypothetical question (hypothesis) and testable description (of actual relationships).
  - A. Design a [technical engineering] way of controlling the relationships [intentionally]; model and inquire.
5. Make prediction based on the hypothetical model. Predictions, as statements of what will occur as described by the visualized model; are the results of the experiment aligned with the predicted model, and with what certainty?
  - A. State the assumptions of what will occur (a.k.a., opinion, position, etc.).
6. Test the prediction.
  - A. Run the controlled experiment to make a new measurement-observation.
7. Iterate the whole analytically descriptive method, and use the results to make new hypotheses or predictions; repeat the controlled experiments, analysis, and assumed predictions (certainty of knowledge) about the real-existent world. Repeated research clarifies the certainty of information. Observations lead to further investigation; further research (into technical existent relationships).
8. Revise conclusions (theories, models, and new hypotheses) based on all available data.

**NOTE:** *Herein, a hypothesis is only "true" (with some certainty) if it can be tested by repeated experiments.*

A more complete stepwise view of the method of research is:

1. Observe.
2. Make a prediction (hypothesis).
3. Run an experiment (to confirm and verify, or disconfirm and disprove a prediction, behavior and/or description).
4. Measure.
5. Collect data for evidence.
6. Describe with an equation (quantitatively)
7. Discover a novel behavior.
8. Present evidence (to persuade/convince peers).
9. Result = knowledge.
10. Repeat the process to confirm knowledge (increase certainty of knowledge).
11. Invention of a technology by means of the application of knowledge.

Herein, if someone cannot test it, then it is not science. The experimental scientific method can be viewed in greater detail:

1. Observation and description of phenomenon. The observations are made visually or with the aid of scientific equipment.
2. Formulation of a hypothesis to explain the phenomenon in the form of a causal mechanism and/or a mathematical relation.
3. Test the hypothesis by analyzing the results of observations or by prediction and observing the existence of new phenomena that follow from the hypothesis. If experiments do not confirm the hypothesis, the hypothesis must be rejected or modified (i.e., go back to Step 2).
4. Establish a theory based on repeated verification of the results.
5. Develop new technology based on the theory.

Herein, what scientists are most often looking for is a layer of efficacy in their procedures, and for many scientists, efficacy means [an emergent] truth.

Experimental scientists do the following:

1. Plan and design experimental interventional programs to inform on aspects of cause an effect in the real world.
2. Conduct experiments and make observations under discipline and control.
3. Report what was observed.

It is important to note here that science is not occurring when the "scientist" adjusts the observations so that they report something other than what was observed.

**APHORISM:** *Absence of evidence is not evidence of absence.*

### 3.2.2 Evidence

**MAXIM:** *What can be asserted without evidence can be dismissed without evidence. Therein, denial without evidence hinders scientific inquiry.*

Science is decided by the empirical data, and not by anyone's opinion of it. In a community, the veracity of claims to knowledge cannot be determined by whether something is told to all, many, or told to none. The community must use at least unbiased evidence and corroboration, logical reasoning, and complete transparency with the scientific methods of observation and analysis.

What is the alternative to accepting a claim on the basis of sufficient evidence in support of it? Two logical alternatives exist: (1) accepting a claim with insufficient evidence supporting it; and (2) accepting a claim without any evidence supporting it whatsoever.

All technical truths about our common reality have the potential for eventually being verified or demonstrated. If a truth cannot be reliably demonstrated, then this is solely due to our current limitations. A truth may also

be an element of a greater truth, a larger system [of understanding], so the realization of truth is always evolving.

The question then becomes: is there anything that demonstrates or tends to prove that evidence is necessary for rationally accepting claims of truth? And, what evidence is there for supposing that claims to knowledge need evidence in order to be rationally viable as a factor in orienting and deciding? The evidence is three-fold:

1. The nature of human consciousness.
2. The nature of knowledge.
3. The nature of reason.

Let us examine each of these individually, keeping in mind the definition of 'evidence'. According to one common online dictionary (2012), evidence is "that which tends to prove or disprove something; ground for belief; proof." The Oxford English Dictionary (2012) defines 'evidence' as: "testimony or facts tending to prove or disprove any conclusion". Social proof is evidence so strong that someone can't statistically or reasonably deny it, because it is commonly/equally computable, visualizable, and/or able to be pointed at.

In regard to the nature of human consciousness, the very fundamental fact that consciousness is consciousness of something [a self-evident] has pervasive importance to the present area of inquiry. It means that consciousness needs an object, and it is this object which conscious activity beyond the perceptual level of cognition (i.e., conceptualization) identifies and integrates into this grand phenomenon known as knowledge. The objects of awareness inform consciousness so that our consciousness has content, has awareness of something. Without content to be conscious of, there is no consciousness. Consciousness with nothing to be conscious of is a contradiction in terms. Since consciousness needs an object, any activity which consciousness performs must have an object – whether it is in the form of direct perception or inference based ultimately on direct perception. The object(s) of awareness inform its activity with the content it requires to act on in the first place. Consciousness is conscious of its surroundings [by degree] and it can discover the nature of reality and identify it by an objective process (if such a process is revealed and selectively integrated by the conscious). Consciousness inquires into and discovers evidence of a true existence.

In essence, consciousness refers to the phenomena of awareness, irrespective of who/what is being aware of who/what/when. Imagine for a moment, trying to study anything, without implicitly acknowledging the existence of the phenomena of awareness. Imagine trying to explain the causes of **sensation** (which is merely the awareness of a stimuli), or **perception** (the awareness of not just individual stimuli, but of other existents based on the integration of multiple stimuli), and finally **concepts** (let's just call this awareness of complex patterns among

many existents), without first integrating and using the concept "consciousness" (which identifies the fact that awareness exists, has as its object an existent or more, and is dependent on time - but that's it, it identifies nothing more). Here, it is through mindfulness and introspection that we develop our self-awareness.

When we know ourselves, then we may exchange information with "other" selves, accurately (i.e., *usefully*; through *precise* coordination and through *knowledge*). Through the accurate exchange of basic information about objects in the surrounding environment, we can come to more coherently create toward our fulfillment (as opposed to individual achievement at the expense of our fulfillment).

In regard to the nature of knowledge, we must keep in mind that, just as consciousness is consciousness of something, knowledge is also knowledge of something. Knowledge of nothing at all is likewise a contradiction in terms. Knowledge must have an object, and it is ultimately our awareness of objects which provide the basis of knowledge as such. In reality, knowledge is earned by the cognitive effort of the mind which possesses it. The content of objective knowledge is the facts of reality. This ties in directly with the proper understanding of the concept of objectivity, which is defined by objectivism: "To be 'objective' in one's conceptual activities is to volitionally (i.e., through will) adhere to reality by following certain rules of method, a method based on facts and appropriate to man's form of cognition" (Peikoff, 1993:117). If what one claims to "know" is not based on facts gathered by "a method based on facts and appropriate to man's form of cognition," then it is not legitimate knowledge. Facts that inform knowledge are the evidence that provides knowledge with its objective content. Consequently, without evidence to inform one's knowledge, what someone may call "knowledge" is not fact-based, and thus it is not really knowledge at all.

In regard to the nature of reason, consider first of all what reason is: "Reason is the faculty that identifies and integrates the material provided by man's senses" (Rand, 2011:20). Without "the material provided by man's senses," there is no content for reason to identify and integrate. Reason is a conceptual activity, and conceptual activity requires input (i.e., evidence) from reality, beginning with perceptual awareness. Concepts are formed in part by isolating and integrating objects which a knower perceives in the world around him or her. Thus, evidence is a non-negotiable part of rational knowledge – knowledge with a logical connection to the real world.

As a concept, reason is defined as the neuro-cognitive processes that identify and integrate the material provided by a human's senses. Reason integrates perceptions by means of forming conceptions or abstractions. The ability to reason provides the human organism with a larger decision space than other organisms on the planet; a decision space that has the potential to include knowledge of the complexly systematic and technical nature of reality, which provides

the ability to consciously caretake an environment. This "faculty", reason, allows for the emergence of strategic planning and other survival-oriented process[ing] strategies.

Since reason is a distinctive tool of survival for the human organism, a process or method is needed to discover when reason is being utilized "properly" or "improperly", in alignment with reality and with verifiable human fulfillment. The concept of logic provides for this. Logic is the nested central process and method of all proper reasoning. Logic is defined herein as the process of non-contradictory identification. It is a creative process by which a consciousness identifies and relates to things [interfaced with] in reality in an integral (as unifying) way. For example, A is A, A is not non-A. A thing cannot be itself and not itself in the same way in the same respect for that would be a contradiction. Logic provides the potential for identifying non-contradictory relationships in a unified reality. And, there are no contradictions in a unified, objective reality; there are just errors in understanding and integrating the perceptions of this reality. Thus, the task for individuals, for our minds, depending upon our level of development, is to understand reality in a non-contradictory way [through the process of logic] so that we can commonly devise ways of deciding and creating that accord with the reality of our existent needs, rather than opposing them.

To integrate and effectively explore reality individuals must examine the real, relational conceptions that drive their behaviors. Logic, as the artistic expression of non-contradictory identification, is a way to understand concepts as they are related to each other and to reality; and hence, as they relate to the fulfillment of real human needs. Evidence is gathered in the form of data

In all three cases, the nature of human consciousness, the nature of knowledge and the nature of reason, evidence (i.e., factual content gathered from reality by an objective process) is vital to accurate human cognition and fulfillment. These are the evidences, as intimate to the human mind as they are, underwriting the epistemological proposition that evidence is necessary for rationally accepting truth claims. Starving the mind of evidence will not produce knowledge of reality. On the contrary, it will only scramble the mind and turn it loose in a fantasy-world of its own partial creation as it surreptitiously borrows from the very realm it seeks to reject.

Something which must be borne in mind is the fact that an arbitrary claim is one for which there is no evidence, either perceptual or conceptual. (Porter, 1999:64) Such a claim has no tie to reality and "has no relation to man's means of knowledge" (*Ibid.*). Evidence ties knowledge to reality, making what we know, "knowledge of reality". Our only cognitive contact with reality is perceptual awareness. Conceptual structures are informed by the evidence of the senses, and ideally formed according to the strictures of an objective process, and consistent with the norms of rationality, are objective. The only alternative to this is to abandon objectivity in preference

for faith and belief, which lead to the bypassing of reality systems that are unpredictable in their orientation toward human fulfillment.

Today, emotional thinking often drives the beliefs that people hold. What is a belief? The word 'belief' represents a concept. This concept has the distinguishing characteristics of a mental process by which someone has integrated something, with an element of faith that may or may not be based on the facts of reality. It is something for which there is not sufficient evidence to accept as true[ly in alignment with existent reality]. There are overwhelming multiplicities of beliefs in people's minds today that are not based upon the facts of reality. The same applies to opinions. Fundamentally, to achieve a world where people treat each other with conscience and maintain an authenticity in their communication, then we must begin to view our world from a logical and objective perspective [and which may be tied with empathic language, such as non-violent communication (NVC)].

Without the proper understanding of the nature of concepts and the process by which they are formed, all these points will be lost, and those who follow such fractured thinking will continue to press divisive debating schemes as though there were no alternative because one has not stopped long enough to examine such matters objectively and according to a rational and informed understanding of how the human mind operates.

### **3.2.2.1 Scientific evidence and decisioning**

**MAXIM:** *Seek to encompass the paradoxical until you see that it isn't paradoxical. There is no trick in the universe; we only trick ourselves.*

Science is about re-calibrating ideas to reality to produce knowledge with some certainty. Therein, not all information is useful for decisioning. Repeatability is one of the criteria for determining whether a test is useful. If scientists and engineers can't repeatedly get close to the same results, then the information cannot be relied on it for taking decisions. Evidential information has some associable certainty, and is the primary type of information used in decisioning.

However, it is important to note here that certainty can be a barrier to open mind exploration of ideas and experiences; certainty without some degree of openness to new information, blocks someone from seeing and observing the real. When someone has certainty s/he may fail to test and visualize reality, which would otherwise reveal his or her misunderstandings about reality.

The types of evidence (Read: information useful for decisioning) include, but may not be limited to:

1. Pattern language (systems logic, rational reasoning with a visual mechanism)
  - A. The rational scientific method (rational science)

2. Sensory observation of object or process  
(experimental control, differential reasoning with a statistical/mathematical mechanism)
  - A. The experimental scientific method  
(experimental science)
3. Visual survey of object, object motion, or the result of an informational operation:
  - A. Identify user demands (user issues with fulfillment, user accounting).
  - B. Identify evidence of available resources (resource accounting).
  - C. Identify evidence of knowledge, skill, and technology (team capability accounting).

All experience occurs within consciousness, and consciousness can have awareness of itself and its surroundings in a physicalized reality where socio-technical interconnection is possible, and therein, self-discovery and evolution. Evidence provides useful certainty when constructing individual and social vehicles to navigate a common and emergently discoverable environment. Evidence is necessarily experiential by consciousness. Conscious can derive inaccurate conclusions from the experience of evidence; evidence can be misinterpreted. Yet, nothing is more powerful at delivering "proof" than first-hand, conscious experience.

If an individual's experience is the method of proof, then reality can be:

1. **Understood and communicated between**
  - A. Conceptually - for example:  $2+2=4$ ; a dog's fur is white.
  - B. Visually - for example: those two objects together; that dog's fur is white.
2. **Experimented with**
  - A. Experientially - for example: I am experiencing more of that type of object [of which there were initially two]; I am perceiving that a dog's fur is white.

### 3.2.3 Statistical analysis

*A.k.a., Statistical studies.*

There are two designs of study upon which statistical analysis of data can be performed:

1. **Experimental studies (Read: controlled studies, research controlled studies, experimental science, interventional studies)** - shows likelihood of causation. Experimental is where "you" control certain variables and try to determine if there is any causality. These studies involve interventions or manipulations by researchers to study the effects. Here, the scientist observes/studies the results of an experiment, and then,

describes the observation. Experimental studies are used to determine the predictability of a factual cause.

- A. The results of statistical analysis with experimental data are causal statements (causal assertions) with a "certainty" value.

2. **Associational studies (Read: observational studies)** - shows likelihood of association only. Observational is where "you" observe certain variables and try to determine if there is any correlation. Here, the "scientist" observes/studies, and then, describes the observation. Associational studies are used to show and determine the significance of associations.

- A. The results of statistical analysis with associational data are correlational statements (associational assertions) with a "significance" value.

#### 3.2.3.1 *Associational studies*

*A.k.a., Observational studies, correlational studies, co-relational studies, epidemiological studies, survey studies, observational trials.*

Associational studies, also known as observational studies, examine relationships between variables without intervening or manipulating any factors. These studies include cohort studies, case-control studies, and cross-sectional studies. Associational (observational) studies will show co-incidence, but specific causative attributes (e.g., risk) cannot be ultimately determined. Incidence is the simple occurrence of something; it does not inform on cause and effect. Incidence are correlational, and not causal. Causative inference cannot be drawn from observational (epidemiological) studies. It is only possible to correlate, and correlation is not causation. Associations cannot establish causation/causality (i.e., association does not and cannot establish causality). There is no way to identify a percentage of causality by looking at associations [in a multivariate analysis]. Associative studies show markers of [co-] incidence (only); they show co-incidence between factors (co-incidence relationships). Associational studies co-related (correlate) data only. Unlike experimental research in controlled laboratory settings, observational studies involve the collection of data in natural contexts. In an observational study, the allocation (assignment) of factors is not under control of the investigator. Associational studies are inferential, which should be used to guide scientists (who do controlled/interventional experiments) as to where to look and where to do the actual science. Importantly, associational studies can give scientists who run experiments a clue as to where to look to run their next experiment to investigate causation.

**NOTE:** *Observational studies involve statistical studies.*

There is only one form of scientific evidence -- experimental, interventional, controlled research undertaken by qualified scientists according to the scientific discipline. Science involves properly designed, controlled, and randomized observational-interventional research studies undertaken by qualified personnel according to the scientific discipline, to establish cause and effect. The only thing that is important is the data (e.g., the numbers), and not the opinion (which may be the scientists' themselves). Scientists control in the design of their research and they collect data according to their disciplines.

**CLARIFICATION:** *In science, either a connection between two things is causal or it is not causal. If a connection is causal, it must always associate. The purpose of science is to identify causal connections. Herein, to do so, scientists must report what they have observed under control.*

There is only one form of evidence [that can convey high certainty], that is experimental (Read: interventional) evidence. If the definition of evidence were to be broadened to include epidemiology, then it could be said that epidemiological (associational and observational) studies provide evidence of association/co-incidence only. If a study is just observational (i.e., just watching what happens and not intervening), then, technically speaking, science is not being done.

The data from purely observational studies are: relative outcome statistics. The statistics are relative to the selected population, the situational context, and confounding variables (i.e., uncontrolled variables). There is a signal to noise ratio with all observational only studies. Some will have more noise and less signal, and others will have more signal and less noise.

**SCIENTIFIC APHORISM:** *If you do not have reason and cause to state that you have knowledge of a causal relationship between two variables, then you should refrain from stating that you have knowledge. Scientists make statements that are supportable and unambiguous, because they have the data collected according to the right disciplines, to support those statements (assertions).*

### 3.2.3.2 Experimental studies

*A.k.a., Experimental trials, experimental research, scientific research, etc.*

In comparison to associational studies, experimental scientists plan an investigation where they will control everything, except for one variable which they will allow to vary. And then they will make an observation of the outcome variable of interest and see if there is a relationship between the outcome variable and the moderated variable (or, experimental variable). And then, they report what they actually observed. Experimental scientists will only use associational studies to guide research into potential cause and effect mechanisms of

"significance": if a study shows the change in incidence ("significance") between populations in the range of thousands of percent, not tens of percent.

#### 3.2.3.3 Meta-analysis statistical technique [set]

Meta-analysis is a statistical technique used to combine and analyze data from multiple independent studies (trials) on a particular topic or research question. It allows researchers to systematically review and synthesize findings from individual studies to obtain a more comprehensive and significant estimate of the effect size or outcome of interest. Meta-analysis is a set of statistical (mathematical) techniques applied to data that can encompass a wide range of study types, including both associational and interventional studies. Meta-analyses can synthesize data from multiple studies to draw associations and assess the strength of associations between variables.

It is important to recognize that it is easy with meta-analyses to be fooled (i.e., for the reader/user to be reading manipulated data). A reader must look at every single trial in extreme detail, especially to determine the trials efficacy and if it was adequately controlled. Forest plots and pooled risk ratios can be easily manipulated. Trials with inadequate controls are inappropriately, though frequently, included in forest plots to manipulate the substantiation of a claim. Often, there are clear flaws in trials that may be included in forest plots to substantiate biased false narratives.

The meta-analysis method is:

1. **Identify studies:** Discover and include all well-disciplined studies (only).
2. **Data extraction:** Collect all appropriate and relevant data and organize it into a table record.
3. **Effect size calculated estimation:** calculate effect sizes for each study. Common effect size measures include: Cohen's d, odds ratios, risk ratios, correlation coefficients, or others based on the nature of the data.
  - A. Standardize the effect sizes to a common metric if different studies use different measures.
4. **Statistical analysis:** Perform a meta-analysis using statistical software. Different models like fixed-effects or random-effects models can be applied. Create forest plots to visualize the effect sizes and confidence/significance intervals for individual studies and the overall effect.
5. **Assessing heterogeneity:** Evaluate heterogeneity among study results using statistical tests (e.g., Cochran's Q test, I-squared statistic). Explore sources of heterogeneity through subgroup analyses or meta-regression if applicable.
6. **Sensitivity analysis:** Conduct analysis of study and of the potential bias(es) of the researchers.

The primary goal of meta-analysis is to pool data from multiple studies and integrate it (using statistical operations) to produce more useful information (with which to take better decisions):

1. Identify the effect size.
2. Assess the consistency of findings across studies.
3. Potentially, uncover patterns or relationships that might not be apparent in a single study.

### **3.2.3.4 Epidemiology**

*A.k.a., Epidemiological studies.*

Epidemiology, as a field, is closely related to meta-analysis because it deals with the study of disease patterns, causes, and effects within populations. Epidemiologists use various study designs and statistical techniques, including observational and interventional studies, to understand the distribution and determinants of health and disease. Epidemiology is statistical analysis applied to interventional (controlled) and associational (non-controlled) studies concerning the health and medical situation of humans. A more common usage of the term is, "epidemiology is the study of how often diseases occur in different groups of people and why". Epidemiology can be useful. For example, it can trace the source of a toxin in the environment. Which is a useful and sensible use of the tool.

Epidemiology is medical statistics, most often used to assess the health and medical environment of people. In a strict sense, epidemiology is not science as experimentation, because it does not control and is not interventional. Some epidemiology uses observational studies only (without intervention). Where there are no interventions there is no function[al control] to draw causative [control] inferences. Epidemiological studies that are solely associational studies are incapable of informing on causes and effect -- associative studies (i.e., non-interventional studies) cannot inform on cause and effect. If a study infers cause and effect, the study method must be capable of relating that information to some control[led] variables.

Epidemiological analysts need to be aware of the two types of common sources of bias:

1. **Evidence level** - the highest level of controlled evidence, for example, in experimental epidemiology is sufficiently sampled and appropriately designed randomized control trial.
2. **Con-founding variables** (a.k.a., confounders, uncontrolled factors) - variables in the study that cannot be controlled for. Confounders in observational studies are always possible, which completely remove any possibility that observational studies could inform on causality.
3. **Researcher bias** - the biases of the analyst, opinion. In concern to epidemiological studies,

when the context and surrounding cultural narrative are different, often, epidemiological results are different. In other words, the observed relationships become different when there are different cultural narratives.

4. **Reductionism** - is looking at the totality phenomena in isolation to the context in which they are found, and leading to vastly false conclusions.

In general, no [statistical] correction(s) should ever be applied to raw data. If corrections are applied to raw data, then the likely result will be false or biased data. Often, data adjustment is another name for data fabrication. Often, the word adjustment is a euphemism for data fabrication (or, manipulation).

A scientist should not adjust the incident observations and call oneself a scientist. Adjustment is based on the fundamental fallacy that association can inform on causality. A single variate regression cannot inform on causality. Hence, multiple variate regression is similarly unable to inform on causality. A scientist ought not correct out the influences of any factors; because their causal contributions to the [hard health] outcomes (e.g., death, diagnosis of disease process, etc.) have not been determined. Instead, to make cause and effect statements [about risk] there has to be a mechanism established with experimental science and corroborated with experimental science (properly applied under the required discipline) to collect such data.

Epidemiological studies frequently use the statistic method called "multiple regression analysis". While this method is generally accepted as statistically appropriate, it is not scientifically appropriate. In general practice, it is a means by which to report some outcome other than the actual outcome that was in fact observed in a given study. It is frequently used as a technique for the misrepresentation of outcome statistics. Using multivariate regression analysis (multivariate adjustment), data is adjusted (i.e., changed relative to what was actually observed/reported). It is a fallacy to use relative statistics in the absence of giving absolute [baseline] outcome statistics. Outcome statistics should not be adjusted (manipulated) to fit hypotheses, beliefs or opinions. Scientists report what they observed.

What is actually occurring during multi-variate regression is that someone is taking a group of associations and superimposing them one upon the other, and then, claiming to be able to discover the causal influence of each one mathematically, which is impossible. Multivariate regression also makes an assumption that the various factors being put into a sum do not share co-linearity.

Multivariate regression [analysis] is a procedure used to produce a trend line with much lower residuals than should be reported (Note: The lower the residual, the more "accurate" the predictions in the regression are). This inflates the power of the result, but more importantly, it can completely change the result from

what was actually observed, thus departing entirely from reality and potentially even fabricating outcome statistics. Scientists look at relationships and report what they observed. Scientists don't look at relationships and then estimate what they might have observed if they had actually introduced a control, when there was no control in the science. Adjustment of a data set can easily lead to outcomes that are diametrically opposed to what was observed.

**INSIGHT:** *Absence of evidence is not evidence of absence.*

### 3.2.3.5 The "Bradford Hill" epidemiological investigation criteria

*"All scientific work is incomplete. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time."*

- Bradford Hill

The "Bradford Hill" epidemiological investigation criteria are a set of nine principles for establishing how certain epidemiology should be for an inference (causal inference; inferring that the relationship is causal). The list of criteria are:

1. **Strength (effect size):** A small association does not mean that there is not a causal effect, though the larger the association, the more likely that it is causal.
2. **Consistency (reproducibility):** Consistent findings observed at different times and in different places with different samples strengthens the likelihood of an effect.
3. **Specificity:** Causation is likely if there is a very specific population at a specific site and disease with no other likely explanation. The more specific an association between a factor and an effect is, the bigger the probability of a causal relationship.
4. **Temporality:** The effect has to occur after the cause (and if there is an expected delay between the cause and expected effect, then the effect must occur after that delay).
5. **Biological gradient (dose-response relationship):** Greater exposure should generally lead to greater incidence of the effect. However, in some cases, the mere presence of the factor can trigger the effect. In other cases, an inverse proportion is observed: greater exposure leads to lower incidence.
6. **Plausibility:** A plausible mechanism between cause and effect is helpful (and, knowledge of the mechanism is limited by current knowledge).
7. **Coherence:** Coherence between epidemiological and controlled findings increases the likelihood of an effect. However, Hill stated that "lack of such

[controlled experimental] evidence cannot nullify the epidemiological effect on associations".

8. **Experiment:** Controlled study, laboratory, evidence is optimal.
9. **Analogy:** The use of analogies or similarities between the observed association and any other associations is possible, but should always be considered weak (because analogies can become belief traps).

**APHORISM:** *Correlation is not causation, but when there is substantial amounts of evidence of correlation, in some cases, there may be the real possibility of causation — or at least, interrelation — with significance. In other words, when you have substantial amounts of evidence of correlation, you'd better take the possibility of causation — or at least, interrelation — very seriously.*

## 3.3 Rational science

*A.k.a., Rational physics, the rational scientific process, rational science, the rational scientific method.*

Rational science is defined as rational explanation. The only precise form of explanation of spatial objects is visual, so a rational explanation must be visual (at least). Visualization starts with 'objects', wherein properties, relationships, and motions are "concepts". There has to be the seeing of an object, first, before motion of objects can be watched. In physics, what would there be to study without an object? In order to do physics rationally, there has to be an object, as a premise (an axiom). Only objects can perform motions. Concepts, which are not objects, cannot perform motions. When objects move, concepts describe motion (a.k.a., verbs). When objects are perceived, concepts describe perception (a.k.a., adjectives, adverbs, articles, adpositions). Rationalscience (rational physics) is about explaining, not studying. The rational scientific method is about explaining rationally using objects and concepts. Scientists don't just study, they must explain. Herein, all definitions are descriptions, and all explanations are rationally understandable visualizations. In rational science, science is rational explanations. In other words, the purpose of rational science is to give rational explanations (i.e., to be rational while giving explanations). Hence, rational science is a body of rational explanations, and a rational method, which is itself an explanation. (Gaede, 2014) Rational science is explaining physics rationally. What does "rational" mean? It means that science involves:

1. Science involves the motion and states of 'objects' in relation to one another as "concepts".
- A. Only objects are reified (i.e., physical) and can be moved. Concepts cannot be reified/moved (i.e., concepts cannot be made physical as 'objects')

- and moved around).
- B. The only way to move an object is to have it come into contact with another object (Read: cause, mechanism).
1. Science involves an objective explanations of mechanisms (a.k.a., causes). What is objective is presenting a visualization (a.k.a., movie, animation) made to explain a mechanism with objects motions/relations labeled as "concepts". Objectivity and not subjectivity is engaged by someone doing science rationally:
  - i. **Objectivity (object-ive):** Free of subjective interpretation (i.e., free of belief or opinion), because there is a clear visual explanation. A context in which a "claim of cause of change" (causative theory) is presented visually, and everyone clarifies until, it is understood.
  - ii. **Subjective (subject-ive):** Includes belief/opinion. A context in which a "claim of cause of change" (causative theory) is not presented visually, and/or is not clarifiable, and therefore, it is not commonly understood.

A mechanism is an objective cause of an action. Each mechanism is a complex assemblage of objects that can cause a specific motion/action. To "understand" a mechanism means that its functioning can be explained and visualized. If a mechanism cannot be visualized, then it has not been explained. A mechanism may be described informally with natural language, or formally with math.

1. Objects can be assembled [by life] to have a complex function (e.g., human engineering mechanisms).
  - A. Objects have functions (to life).
    1. The final function of the assembly has a concept that labels the function.
2. Objects have natural phenomenological, physical functions (i.e., natural physics mechanisms).
  - A. Objects have real physical attributes/properties.
  - B. The object's attributes have conceptual labels.

In rational physics, every word in the dictionary can be classified as either an object or a concept. There are only two categories of words (Read: two word categories) in any dictionary:

1. **Object(s)** - a word that embodies that which has shape. Objects are pointed to and named. Objects are not defined. Objects, their names, are identified with an 'object-label', an object's name, a 'noun'. All objects can be pointed to and named as 'nouns'. We show objects to one another statically in a

pictorial, and visualize the movements of objects in a animated film (a.k.a., movie). Objects are only those "we" can point to. In physics, only objects can be 'nouns'. Herein, it is important not to confuse 'objects' with 'objects' in motion. A kangaroo is an object, a jumping kangaroo is an 'object' in motion. No verb can be included as a criterion for the definition of object.

- A. Objects are presented in pictionaries (i.e., collections of imaged and named objects). Objects are visualized by drawing the object.
2. **Concept(s)** - a word that embodies two objects, or two words treated momentarily as objects. Concepts are defined in a dictionary. Concepts are not pointed to. Concepts are identified with a "concept-label", a concept's name. Concepts are only those that "we" can define. There are no concepts that are 'nouns'. No concept is a 'noun'. 'Nouns' are not concepts (neither static nor dynamic concepts). A 'noun' is the name of an object. The only things that can serve as nouns are objects (as that which has shape).
- A. Concepts are presented in dictionaries (i.e., collections of named and defined concepts). Concepts cannot be visualized like objects (i.e., they cannot be drawn); however, concepts can be modeled in a concept model. A concept model is a diagrammatic or symbolic depiction of concepts and their interrelationships.

Anything that has shape is an object. If "you" define it, then it is a concept, if "you" point it, it is an object. Objects are pointed to, and concepts are defined. All objects in rational science are presented by pointing and naming -- point to something not moving and say its name. All concepts are presented in rational science by naming the concept and giving the definition. Object is to one [1] as concept is to two [2], and nothing is zero [0]. Objects cannot change "time", because "time" is a concept; concepts do not have motion (i.e., motion cannot happen to concepts, only to objects). However, objects can be imagined in the past and future (tenses), and accessed in the present (tense).

Every word in the universal information system (a.k.a., universal dictionary) is either an object or concept; there is no third category. The rational scientific method has two sets of categorical information about the real-world; the primary real-world (a.k.a., ontological) societal information sets. Every word in the [universal] dictionary [of rational science] can be divided into these two categories only.

It could be said that there are two branches of rational science, physics and philosophy. Physics is about rational physical interpretations, and philosophy is rational explanations of purposes and reasons (i.e., why people act and behave the way they do). Philosophy asks science questions about values, reasons, and purposes

(standards), and physics asks science questions about objects, causes and mechanisms:

1. **Philosophy** is concepts, reason, and purpose.  
Philosophy requires a concept.
  - A. Is the language of meaning in signed form.
  - B. Explanations in philosophy: Interpretation of the reasons and purposes behind an organism's action (organismal phenomena).
2. **Physics** is objects, causes and mechanisms. Physics requires an object.
  - A. Is the visualization of a shaped object form.
  - B. Explanations in rational physics: Interpretations of the causes and mechanisms underlying a physical phenomena.

**CLARIFICATION:** *Societal systems science combines physics, philosophy, and mathematics.*

### 3.3.1 The method of rational science

Rational science involves the presentation of a visually workable model and the "destruction" (a.k.a., elimination and loss) of observably-visually false explanations/models. The method of rational science is the method of defining concepts and visualizing objects and their motion for rational explanation. An irrational explanation is the movement of concepts. A rational explanation. Rational science starts with objects and definitions, and what follows is object[ive] explanations of causes and mechanisms. Rational physics begins with objects; there has to be an object to do physics. A rational explanation provides conceptual definitions and shows objects as causes/mechanisms of action between matter.

A simplified view of the strategy for the method is:

1. Objects have shape, point and name them.
2. Because objects have shape, objects can be pointed to; objects can be visualized (visually express and communicate in dictionaries and simulations).
3. Objects [that exist and can be counted] have location (local and non-local coordinates, coordinate systems); conceptualize the attributes (relative to other objects) and express the concept's definition in dictionaries.
4. Objects [that exist and can be counted] will move; conceptualize the motion and express the concept's definition in dictionaries. Motion [of any and all objects] always has 2 or more locations (local or non-local coordinates).
  - A. For motion via a local coordinate system, an object is 'moving' in relation to one, or more, other objects.
  - B. For motion via a non-local coordinate system, an object's location is expressed as a [mathematical-physical] equation/formula,

and in order to move, the object's new location is replaced the old location in the equation/formula.

The method of rational science is:

1. **Step 1: Hypothesis** (synonym of assumptions) - a document containing all objects and conceptual definitions. Herein, a hypothesis is not "true" or "false", it is simply an initial model with a set of assumptions.
  - A. Assumptions - an assumption means "you" concede it in order to understand what the theory/explanation.
  - B. Objects - all objects must be named first and pointed to.
  - C. Definition - all terms/concepts must be defined first.
  1. Initial scene/first [static] frame(s).
2. **Step 2: Theory (explanation)** - a theory is only an objective explanation, for the purpose of understanding:
  - A. Mechanisms (show static and dynamic concepts).
  - B. Causes (show movies).
    1. A "theory" is an [objective] explanation of action.
    2. "Mathematics" is a description of motion of objects.
3. **Step 3: Conclusions** - a synthesized result of the integration and association provides valuable results for decisioning:
  - A. Understandings (individual "does" or "does not" understand)?
  - B. Interpretations.
  - C. Corollaries.

Herein, if there is not visualization and explanation, then there is not [rational] science occurring.

The three elements of a rational form of science are:

1. Image of object with contrast.
  - A. 1 Frame of the "universal movie" (stillness, static concepts only).
2. Animation of object.
  - A. More than 1 Frame of the "universal movie" (memory of motion; dynamic concepts in relationship with static concepts only).
3. Philosophy [of science] to explain a fulfilled human life.

### 3.3.2 Visual explanation (visualization) via the universal movie

All explanation in rational science necessitates

visualization. There are two ways to visualize objects: single images and animations of multiple images:

1. **Image (a.k.a., single frame with contrast):** Static single frame showing object with contrast (a.k.a., nothing). One frame of the universal movie shows a photograph/static image (a.k.a., frame) of an object with contrast (temporarily treated as a second object). Static images (picture snapshots) with contrast around the object (contrast treated as secondary object). There is nothing moving in a single snapshot, frame. The static image of an objects must be shown prior to defining anything related to motion (i.e., changing or visualized). The contrast around the object becomes a temporary object for naming in the static image. In a static image, an object rotating around itself may be shown. A true [spatial] object has to stand alone and is made of a single, static visualizable piece; it is then pointed to as an object and named.
2. **Animation of images (a.k.a., film, universal movie):** Multi-frame animated movie (showing object moving in relation to self and to other objects. More than one frame of a universal movie shows animation shows motion and change of an object(s). Animations (universal movies) are a tool for visualizing moving objects. Objects are visualized in a universal movie where their individual position changes in spatial relation to other objects. An object in motion is visualized using animation.

The "universal movie" is a tool to observe objects and invent real-world and fulfillment-relevant concepts. An observer looks at a single frame of the movie, sees and names objects, and invents static concepts. The observer then looks at more than one frame of the movie and sees objects change location, and composition, whereby inventing concepts to facilitate in understanding and engineering objects in motion. The universal movie is a sequence of all snapshot of everything in the universe at a given location; and when one snapshot is looked at, it is as if the universe was frozen. There is no motion in a snapshot; there is only what [object(s)] exists. The universal movie is composed of snapshots of objects in locations in series, and it allows a user of the cognitive tool to look at the universe as a series of single snapshot frames, frame-by-frame. Each frame in the movie is a single snapshot/frame. There is nothing moving in a single snapshot, frame. Looking at a snapshot of an object allows the user of the universal movie/film tool to separate static concepts from dynamic concepts. All dynamic concepts require at least two frames (of the universal movie); because, there is motion, and all motion requires at least two frames. The universal movie [tool] has one frame for every location of every object in the universe. Every frame has only static concepts. Dynamic

concepts require at least two frames to conceptualize. Time is two or more frames of the universal movie. Time is a synonym for "interval", wherein, there is an interval between frames of the universal movie. Motion is two locations, two frames of the universal movie. An object has one location in one snapshot of the universal movie. If it is an object, then it can be moved. If it is a concept, then it cannot be moved; concepts in rational physics cannot be moved like objects.

The "universal movie" is a tool that is composed of:

1. Objects (nouns).
2. Frames (static concepts of state).
  - A. The states of objects.
3. Animation (change of object composition and/or location).
  - A. The motions of objects.

A universal movie may be used to account for:

1. Length = surface to surface.
2. Continuous = made of a single piece of surface.
3. Sense = motion of a surface.
4. Time = a comparison of two motions.
5. Motion = a comparison of two locations.
6. Locations = have object position.
7. Object position = have conscious qualities.
8. Objects with qualities have quantities.

### 3.3.3 Rational science dictionary definitions

Concepts are defined in dictionaries in symbolic language, which has shared meaning among a population. All language is conceptual. All words in a (pic-)dictionary are either concepts or objects. The word "object" is also defined in the dictionary. The second word defined in any dictionary is "concept". Objects are physical, some exist and some do not, and all concepts are in the mind and are not an object with location. A descriptive explanation of a word states its place as an object (i.e., noun) or concept (e.g., verb, adverb, etc.). One or two numbered statements describe the word. Many words have synonyms (also known as, a.k.a.). Many words have antonyms (a.k.a., the opposite of).

**Definition (scientific) :** *symbolic limitation placed on the extent or usage of a word for logical thinking and communicating.*

The initial dictionary words and definitions of a rational science dictionary are:

#### 1. Object

*noun*

*1. That which has shape.*

*2. Something is that which has shape.*

*Synonyms: noun, something, shape, surface, thing, anything, matter, figure, finite, material,*

resource, form, body, boundary, structure, entity, subject, medium, article, spatial, physical, gizmo, widget.

Antonyms: no-thing, nothing, space.

### CLARIFICATIONS:

All objects in the universe have shape. Shape is a universal property of all objects. There is no object that can be imagined that does not have shape. An object is what 'it' is; an object is that which has shape. Shape is the only universal property (or attribute) that all objects have.

An object is an identifiable shape [of matter], which is constrained by an identifiable shape [of boundary]. All objects are static objects made out of a single piece, or an object assembly.

A supra-object made from many single-piece static objects. An object is enclosed all around; it is shape[d] all around. If it has shape, then it is physical (spatial, material); if it is physical, then it has shape. All objects in the universe [of potential objects] have shape. The only condition for the word 'object' is that it has shape. Shape applies to every object and it is the only property or attribute that all objects in the universe have -- shape is the universal property of all objects. Objects may be added to a pictionary to share named objects. An object has a defined boundary that distinguishes it from its surroundings or other objects -- an object has a boundary.

### 2. Concept

verb, adverb, adjective, article, adposition

1. Evokes or embodies two or more objects, or two words treated momentarily as objects; is a relation between [two or more] objects.

2. That which has no shape.

3. Category is that which has definition.

Synonyms: abstraction, comparison, contrast, change, idea, mental, cognitive, notion, relation, thought.

Antonym: no-thought.

### CLARIFICATIONS:

A concept is what is happening to 'it', what 'it' does. Concepts are a relationship between one or more 'objects'. Concepts state how objects move and/or could be moved. Concepts do not have shape. Not a single concept has shape. Concepts do not have physical presence.

Concepts have meaning; objects have shape. All concepts are relations. All properties (attributes) and categories of motion and function of objects are concepts. The word "relation" is a synonym of the word "concept". It cannot be said that there is a stand alone concept, because a concept is a relation between two or more objects. Concepts do not have shape; there is no concept that has shape. Concepts have no shape, no length, width, or height dimensions. Concepts cannot be pointed to, only objects can be pointed to. Simply, concept is motion (or that

which associates motion). A concept can mean that an object is changing shape, changing the location of its shape, or changing the properties of its shape. Examples of concepts include, but are not limited to: energy, information, space-time, intelligence, field, plasma, wave, hologram, electricity, charge, torsion, love, color, motion. In logical order, the definition of the word 'object' precedes the definition of the word "concept". Concepts do not exist (existence in the real-world is physical presence = object + location). Someone may or may not have awareness of a particular concept in his/her mind. Human individuals have awareness of what a concept is, and have awareness of many concepts, in their minds.

### 3. Exist

noun

1. Physical presence as object + location.

1. Physical: that which has shape (1 object).

2. Presence: that which has location (distances between 2 or more objects; the set of distances).

2. Existence is an object that has location; matter are objects that exist.

Synonyms: matter, existence, presence, real, reality, actual, objective. physics (science of existence), materials.

Antonym: nothing, vacuum.

### CLARIFICATION:

There has to be distance between one object and another for something to exist. If there is no distance between a claimed object and someone (or, some other thing), then the claimed object does not exist.

It is not possible to say that a "concept" exists in rational physics. Exist is object + location. A concept is not an object + location. To have existence, there must be an object at a location. In rational physics it is irrational to say that a concept exists. There is no such thing in rational science as a concept existing. Concepts do not exist, only objects can be said to exist. The word existence embodies objects; only objects can be said to exist. Concepts do not exist; humans have awareness of concepts, and can think using conceptual language (a.k.a., abstract language).

Object does not equal exist, because some objects exist and some do not exist. Objects can exist and objects can be imagined to exist. It is possible to imagine, draw, and name objects that do not exist. Not all objects exist, there are some objects that do not exist. To say that some thing exists means that it has location. Not all objects have location. 2D objects and imagined objects do not have location.

### 4. Reality

noun

- 1. Physical presence of an object (i.e., object + location).**  
 Synonyms: *exist, real, actual, possible, objective, interface.*  
 Antonyms: *illusion, fantasy, cult, indoctrination.*

#### CLARIFICATIONS:

*There is no need to put physical in front of reality (as in, physical reality), because reality is physical. What is only real to a person is subjective, but what is real to all persons is objective.*

*When there is an object with location, then there is reality, existence. It is then possible to say, "that object is real, or that object exists". In other words, reality is not what someone visualizes or images; instead, it is an object in some physical real-world location.*

*Clarification: Reality can also mean the combination of: (1) what exists (or has existed), with (2) what any given individual (or group of people) has as encoded as concepts, in their mind and mental model, about how the universe/reality works, has worked, and could work.*

#### 5. Nothing

*noun*

1. *That which does not have shape.*
  2. *Nothing is that which has no shape. Space is nothing; space is without shape.*
- Synonyms: *space, vacuum, void, emptiness, nothingness, no thing, no-thing, Torr.*  
 Antonym: *something.*

#### CLARIFICATIONS:

*'Nothing' (space) is that which doesn't have shape - nothing (space) is that which has no shape, and is measured in Torr of atoms. In contrast, a thing (object) is that which has shape. That which does not have shape is 'vacuum'. 'Vacuum' is measured in Torr of atoms [of real, physical shape]. Space cannot be pointed to, only objects can be pointed to; there is nothing (no thing) there.*

#### 6. Physics

*verb*

1. *The understanding of objects.*
  2. *The study of that which has shape.*
- Synonym: *rational physics.*  
 Antonym: *Irrational physics.*

#### CLARIFICATIONS:

*Physics is the study of objects, and it cannot be done without objects. Physics is the science that explains how the world works. In physics objects are pointed to (pointed out) and concepts are defined (Informationally bounded). Physics is the explanation of physical causes and mechanisms*

*[by spatial objects]. Physics only studies objects that exist. Physics is the science of existence, of existing objects. Exist is a word circumscribed to objects. Physics cannot be done without objects, and specifically, objects that exist. Physics is the discipline that deals with what an object is. Here, causes only have objects as mechanisms.*

#### 7. Universe

*verb*

1. *That which contains all objects, space (nothing), and consciousness.*
2. *space (treated as physical object, unified contrast object) + matter (physical object, shape).*

#### 8. Motion

*verb*

1. *More than one location of an object.*
- Synonyms: *verb, movement, animation, action, vector, displacement.*

A high-level conceptual breakdown would show the following logic:

1. **Objects are pointed to point and named in a dictionary with other objects.** Someone can point to:
  - A. An existing physical object that exists in the real world and has location
  - B. An image/photo of the object.
    1. A collection of named objects is a dictionary (like dictionary, but for objects).
  - C. A universal movie is a visualization of the movement of objects. Someone can point to and name moving objects:
    1. In the real-world with changing location.
    2. Within the replaying of a recording of the objects moving in the real-world sometime in the past (i.e., a recorded video).
    3. A simulated animation of the objects moving using a computer.
2. **Concepts are named/labeled and defined in a dictionary with other concepts.** Every concept is either static or dynamic:
  - A. Static concepts are seen in a single image (i.e., single video frame) of one or more objects. Use a single frame of the universal movie to define static concepts and name objects. Static concepts include, but are not limited to:
    1. Distance (separation of two or more objects).
    2. Location (set of separations).
      - i. Conceptually, location is a cross-section of time, whereas an event requires an interval of time. A cross-section of time consists solely of static objects.
    3. Condition (state of object at location; in a single frame of the animation).
    4. Instant (a.k.a., existence) - all objects at fixed

- location with respect to each other.
- B. Dynamic concepts are seen over multiple images of an object in motion.
1. Use multiple frames of the universal movie (process), including:
    - i. Position (recorded graph measurement).
    - ii. Motion (delta position; i.e., change of position).
    - iii. Animation - the visualization of the motion of objects consists of objects on a timeline (number-line; counting).

More operationally speaking, objects have motions and humans have decisions:

1. Object (noun) - point to and name.
  - A. Item category or one of (article).
  - B. Descriptor of object (adjective) - point to and describe.
2. Motion (verb) - name of motion/change.
  - A. Definition of motion (adverb).
3. Decision (adposition).
  - A. Position (modifier).
  - B. Location (qualifier).
  - C. Time (tense).
  - D. Construction (engineering procedures).
  - E. Allocation (identifier; role).

Summarily,

1. Objects have shape.
2. No concept has shape.
3. All causes only have objects as mechanisms.
4. All concepts are relations, comparisons between objects.
  - A. All critiques are statements of potentially better fulfillment by a new configuration of objects (e.g., community habitats).
5. Objects, we point to and [commonly] name. Objects can be pointed to, because there is shape there to point to.
  - A. Objects have 'contrasts'.
  - B. Space is the contrast of all objects. In other words, space serves as contrast to all objects. Space also happens to be the antonym of the word object. The word space is unique and falls into both categories.
1. Nothing (space) is true and different than Something (object). When you point to space (dark "stuff" around an astronomical object, e.g., the moon), you are implicitly treating space as an object. Space may be temporarily treated as an object to provide contrast to the actual (target) object.
6. Concepts, we define and describe in a dictionary.

Concepts cannot be pointed to, because there is no shape there to point to.

- A. Concepts have 'antonyms'.

Simply,

1. Objects - names, nouns.
2. Static concepts - defined states. A state is a cross-section of time with static objects therein.
3. Dynamic concepts - verbs, action-states. Action is motion of objects over a countable timeline. Generally end in "-z/-t/-ion", and continuous present actions end in "-ing".
4. Values - orientational adverbs.
  - A. Orientational adverbs: end in -ent/-ly
5. Approaches - conjunctive adverbs
  - A. Conjunctive adverb (subordinating conjunction): often, -ly, but no standardized suffix in the English language.

**NOTE:** A state does not include anything about its (a system's) history. The 'path' concept of how an object got from point A to point B is not a 'state'. State is the condition of the system at a given time (i.e., at a given frame of the universal movie, where objects can be pointed to). Transitions are distinguished from states; transitions include motion and states are single frame-no motion. State is a static concept. A phase is a transition, necessarily, with motion, and hence, a dynamic concept. Phase/transition is a dynamic concept involving motion, time, etc. Consciousness has to have two frames of the "universal film" (universal movie) to compare before and after, to show the transition.

**Table 23.** Table shows an example list of objects (presented in photos) and associated (concepts in movies).

One [1] Object [photo] What it IS	Two [2] Concept [movie] What it DOES
air	wind
clock	time
hand	force
atom	mass
person	run
bird	fly
fish	swim
water	wave
gas	plasma

### 3.3.4 The characteristics of objects

*A.k.a., The attributes/properties of objects.*

Objects have the following characteristics:

1. All objects have shape (a.k.a., visual pattern, occupied space).

2. Objects are depicted, named, and communicated in one frame (a.k.a., photo) of the universal movie.
    - A. Objects are visualized and/or pointed to, and named.
    - B. To communicate about an object, point to the physical static object and/or the snapshot visualization of the object, and give its name[d understandable category]. Objects are pointed to and their name is said. All objects can be pointed to or visualized, and named. The object being pointed to should be static, not moving, when pointed to and named.
  3. A noun is the 'name' of an object; it is not a concept.
    - A. Nouns exist within a taxonomy (hierarchy of categorical labels).
  4. Some objects are real (exist) and some are not.
  5. All objects that exist are three-dimensional (3D), having the three [spatial] dimensions of: length, width, and height (of object). In other words, all existing objects have the property of length, width, and height. 3D is required for an object to exist. Everything that exists is 3D, but not everything that could exist is currently 3D. 2D objects that only have two dimensions cannot exist.
  6. Objects can become accessible and inaccessible (to subjects) in the real-world.
    - A. Objects can exist.
    - B. Objects can be imagined and come to exist.
    - C. Objects can be imaged and do not exist.
    - D. Not all objects can be seen or touched, or exist.
  7. The axiomatic properties of objects include:
    - A. **Position** - the volume of space that an object takes up. The region of space occupied by an object. A hypothetical or imaginary volume of space occupied by a real object; the object itself. Position is seen in a single frame of the universal movie, is the object (named) in position (static concept). Here, the static concept, "position", could be replaced with the object itself.
      1. **Length** - what an object has, continuous matter, from one end of an object to the other end.
    - B. **Distance** - separation between two objects. Distance only exists between two or more objects. There is no distance between concepts. Distance refers to that which lies between the lengths of two objects. Note that distance and location are essentially synonyms. Distance is one example of a concept. The space separating the surfaces of any two objects is called distance. Simply, distance is spatial separation between two objects. Distance is seen in a single frame of the universal movie, is a static concept.
- C. Location** - the set of distances from one object to all others (the set of objects; set of distances). A set of distances. Location is a set of distances from one object to the rest. The set of distances from the test-marked object to the remaining objects. For location to have meaning, two or more objects must inhabit a single frame in the universal movie.
- D. Itinerary** - more than one location; route (e.g., a trajectory or orbit).
- E. Matter** - set of objects that exist.
- F. Event** - location with human involvement, or relevance.
- G. Motion** (a.k.a., change, verb, animation, action)
  - two or more locations [of an object]. Motion is change; motion refers to two or more locations, a change of locations. Motion is a category of change (e.g., run, conveying, flying).
- H. Time** - comparison of two motions.
- I. Mathematical equation** - description of motion.
- J. Material** - the material composition of the object; the makeup of the object.

An object is not:

1. A concept: What doesn't have shape is a concept.
2. See and touch: An object is not that which we can touch and see; an object is that which has shape. Some objects cannot be touched or seen by human eyes (e.g., electric and magnetic disturbances, EM waves, EM ropes). An 'object' is not a "force" (a.k.a., concept). Some objects can be detected by the senses, and some objects cannot. The [consciousness] senses are also an object. Organisms interact with spatial (real-world) objects through their physical body. Some objects cannot be detected by the human sense (i.e., they are invisible to human senses).

All objects can be categorized in society by physics/ phenomena and habitat service (i.e., all objects have these properties):

1. Matter type (intrinsic property; e.g., solid, liquid, gas, etc.) and chemical composition. The intrinsic property of an object categorizes what it is (e.g., mass, spin, charge, chemical composition, phase of matter, etc.). This includes geometry, surface and body composition.
2. Functional service usage type (extrinsic property; e.g., life support, cultivation, power production, etc.). Objects in a habitat may function as use/ service in a category of support (e.g., life, technology, exploratory). The extrinsic property categorizes what an object is doing, what it is

- supposed to do, or what it did. (e.g., wave, wind, fall, production, fulfillment-service, destruction, advertising, etc.). For human benefit, objects can perform one or more types of interaction:
- See: Humans see the object in real life, and/or see a picture of the object. Humans see objects; they see nouns.
  - Watch: Humans watch the object move in real life, and/or watch an animated movie with the object. Humans do not see verbs; they watch verbs.
  - Interact: Humans touch, hold, and take in and take out.
  - Actuate: Humans extend their physical abilities through machines and devices.
  - Invisible to (no interaction available): Humans cannot interact with these objects directly, except via electromagnetism (EM).
3. A property/quality is a comparison of one object to another in a category/phenomena (e.g., color, texture, etc.).
- Scientific adjectives (e.g., color, texture, surface tension, etc.).
    - Yellow color is a relation. It is a comparison to other colors; "color" has a nm measured range. For instance, a wall is an object that can be a yellow color. In such case, the wall has an attribute of color, and that specific color is yellow at a set nm measurable range. Similarly, a crayon is an object, but the colors of all crayons are not an objects.
  - Human value adjectives (e.g., beauty, love, like, etc.).
    - Deep love is a relation where one human feels a deep connection with another.

At the material-physical (behavioral) level, everything made of atoms has shape, because atoms have shape. If there is a first shape, then the [hydrogen] atom is the first shape. The first atom that has shape is the hydrogen atom. Anything that has matter (i.e., atoms) has shape. For example, a bat is an object, a ball is an object, a tree is an object, a table is an object. The following are also objects: a rock, tree, dog, circle, leprechaun, angel, water, air, Zeus, unicorn, horse, sun, and rope.

### 3.3.5 The characteristics of concepts

*A.k.a., The attributes/properties of concepts.*

Concepts have the following principles:

1. A concept is a relation between objects that has meaning [to consciousness]. What doesn't have meaning is an object itself; objects can only be pointed to and have shape.

2. The axiomatic properties of concepts are: definition, property, usage, and data.
3. A single concept stands alone and represents a unique thought (a.k.a., meaning, thought pattern, thought "object").
4. Concepts are expressed in the following ways:
  - Vocal (talking).
  - Write (writing, texting).
  - Draw (visualizing).
5. Concepts may reference other concepts or objects.
6. Organisms interact with concepts (conceptual objects) through their mind (mental body) and communicate their thoughts to one another through their physical bodies (e.g., voice, writing, etc.).
7. Concepts are defined with language and [universal] movie production.
8. There are only two types of concepts, which are together representable by a conceptual tool known as, the "universal movie" of individually sequenced snapshots.
  - Static concepts - one frame of the universal movie.
  - Dynamic concepts - more than one frame of the universal movie.

**Table 24.** Table shows an examples of static concepts (shown in a single frame) and dynamic concepts (shown in more than one frame).

Static Concepts Photo (single frame)	Dynamic Concepts Movie (>1 frame)
distance	meter
direction	forward
perpendicular	breadth
parallel	tandem
surface	perimeter
that	love / economy / intelligence
here	infinity
me	people
stand	walk
location	motion
exist	living

#### 3.3.5.1 Word classes in rational physics

**CLARIFICATION:** English has four major word classes: nouns, verbs, adjectives and adverbs.

Simply, in rational physics, the following word classes apply to objects, the description of objects, and explanations of their motions:

1. **Objects (nouns)** are that which have shape.
2. **Adjectives (static concepts)** are used to qualify/ describe objects in one frame of the universal

- movie. Adjectives cannot be used to qualify motion; they only qualify nouns (objects). Adjectives cannot be turned into nouns.
- A. If qualifying an object, or another concept, then call it an adjective.
  3. **Verbs (1st level dynamic concepts)** are the motion of objects.
  4. **Adverbs (2nd level dynamic concepts)** are used to qualify motion (i.e., to describe the motion of objects).
    - A. If qualifying the motion of objects, then call it an adverb.
- 3.3.5.2 Static concepts ("object", adjectives, and functional words)**
- Static concepts are present in only one frame of a universal movie of snapshots (state concepts) -- **what is in a single frame of the universal movie**. A static concept (single frame of universal movie) is a state; it is not a verb. Static concepts are revealed in a single frame of the universal move, only.
1. **Static concepts are concepts embodied in 1 frame of the universal movie.** Static concepts are concepts that can be invented (imagined) for a single frame of the universal movie. Static concepts are seen in static/stationary images (a.k.a., photos). Nouns (objects) and the static concepts of "state" are shown through one frame of the universal movie. Static concepts are invented in a single frame of the "universal movie" (static concepts; state). A static concept is one frame of the universal movie. The word does not involve two frames of the movie. There is no motion. In that single frame, every atom in the universe has a certain distance from every other atom in the universe. Nothing is moving in a single frame of the universal movie. All static concepts are in only one frame of the universal movie. Static concepts must always be defined before dynamic concepts. There is no motion involved in a static concept. A static image is a photo showing objects that don't move. A static concept is a single, static visualization that includes two objects, for which there is a distance present (a distance between two or more objects).
    - A. A noun (object) is shown (and pointed to) through only one frame of the universal movie.
      1. Adjectives add observed metadata (attributes of objects) to states.
    - B. There is nothing moving here; there is no object in motion.
    - C. A static concept is illustrated by means of an illustration of two or more objects (and a description of the relationship between the objects).
1. Static concept for a reified object (e.g., "money"). For instance, "money" is a static concept wherein what must be shown in the static image for "money" is: two humans with a "priced" socio-technical relationship between them, and owning static property. Money is an abstraction that humans give value to. Herein, "trade" is the dynamic concept describing the exchange of money for money, money for object, or object for object.
  2. Static concepts for an actual/visual object:
    - i. Static concepts for an actual object in a static image (i.e., adjective). For example, shape, distance, location, exist, existence, standing, orientation, sitting, position, pointing, facing, perpendicular, straight, dimension, coordinate, parallel, angle, etc.
    - ii. Static concepts for an object in motion (i.e., adverb). For example, static-orientation, current speed, other relative object speed (e.g., fast, slow, meandering), temperature (e.g., hot, cold), etc.
- D. Static visualization (a.k.a., state visualization)** - creating a single-frame image of the object statically.
1. Matter type [of object] - either solid, liquid, or gas (i.e., the state of matter of an object).
  2. Imaged shape [of object] - lighted single-frame shape of object.
  3. Located shape [of object] - position of object.
  4. Density [of object] - density of object (i.e., mass).
  5. Spectra [of object] - spectra of object (i.e., light).
    - i. Intensity [of light].
    - ii. Color [of light].
    - iii. Gradient [of light].
- E. Primary static-concept word [language] classes:**
1. Adjectives and adverbs:
    - i. Adjectives are qualitative (grammatical category) of objects.
    - ii. Adverbs are qualitative of verbs (qualify motion).
  2. Functional words:
    - i. Articles and adpositions.
- F. The primary static-concept object identification classes** are (static concepts represented by a single frame photo, such as, distance, direction, perpendicular, parallel, surface, that, here, me, stand, location, exist, now, present, color, etc.):
1. The "object" static concepts:
    - i. Object (shape).

- ii. Distance (number line, magnitude from zero). Distance is separation between two objects. It is a static separation.
  - iii. Dimensions (orientation).
    - 1. Length.
    - 2. Height.
    - 3. Width.
  - iv. Location (coordinate).
    - 1. Longitude.
    - 2. Latitude.
    - 3. Altitude.
  - v. Existence (object + location).
2. The qualifier [static] objects:
- i. **Adjectives:** A qualifier/modifier of nouns/objects. A word that qualifies an object; and, may only be used in the context of objects. Adjectives describe what an object is like. Adjectives must be defined unambiguously and before use. The usage of an adjective must qualify a physical object.
    - 1. An adjective is a conceptual word that is:
      - a. Motion-less, and
      - b. Time-less.
    - 2. Shape is an adjective (static concept), because it describes an object (Read: a named object).
    - 3. For example: straight, curved, bent, finite, infinite, continuous, bound, flat, warped, perpendicular, segmented, inert, exist, 2D, 3D.
  - 3. The mathematical static concepts:
    - i. All words in mathematics are exclusively quantitative adverbs; mathematics is a language exclusively of quantitative adverbs. Mathematics has no use for adjectives such as straight, continuous, or flat.
2. **Fundamental static concepts are:**
- A. **State (a.k.a., condition):** the condition of a thing at a cross-section visualization (single-frame of an object(s) in time (in the universal movie)). State is a static concept; it is, conceptually, a cross-section of "time" in the analogy of a "universal movie"; it is a static image (a single frame in the "universal movie"). There is no motion embodied in a "state" (i.e., in a single frame of the "universal movie", there is no motion). There is no time in a single frame of the universal movie. A state (static concept) is motionless. A state/condition is a particular mode of being, configuration, status, etc., of a thing; its existing state, probable state, future state, current state, etc. The particular condition that someone or something is in at a specific time.
  - 1. State is a condition at a specific location:
    - i. The condition of a thing.
    - ii. The condition of existence of a thing.
  - 2. State = stat+ic concepts:
    - i. State = single frame.
    - ii. State = motionless.
    - iii. State = existence (if has location).
      - 1. Existence = location (of an object, a real-world shape, with a distance to all other objects in the universe).
      - 2. Matter = solid, liquid, gas.
    - iv. Location = shape + distance.
    - v. Present = now.
      - 1. Location of every atom in the universe.
      - 2. Single frame of the Universal Movie.
  - B. **Exist:** object + location.
    - 1. Exist: physical (<-object) presence (<-location), is in the real-world.
    - 2. Exist = static concept (because, the definition of 'exist' contains no provision for motion).
    - 3. If the object has no location, then it doesn't exist.
  - C. **Location:** set of distances (i.e., set of separations between objects). Location (a.k.a., without inertia) consists of the set of distances from one object to the remaining ones in the system. Simply, location is set of distances. Objects can change location (i.e., re-locating).
    - 1. Location is determined by coordinates. If it is an object without a location, then it doesn't exist (i.e., the object doesn't exist if it doesn't have location/position). Object without location equals an object that doesn't exist; because exist equals object and location, and location is a set of distances between real-world separated objects.
      - i. Location is set of distances (set of separations). 'Distance' is separation, and 'location' is set of distances.
    - 2. **Extinction:** lack of any present existence of a given object category (e.g., species); where there was once, there now is none in that object category. An individual of the organism can live and die, but when a whole species does (i.e., all objects in the category), it can be said to be extinct.

### 3.3.5.3 Dynamic concepts (verbs and adverbs)

Any thing/object in motion is defined with/by a dynamic concept. And, dynamic concepts are revealed in many frames of the universal movie, only. Dynamic concepts are present in more than one frame of the universal movie (process/phase concepts) where an object(s) must

be present. Dynamic concepts cover what is happening over more than one frame of the universal movie. A dynamic concept (more than one frame of universal movie) is a process/phase; it is a verb. Adverbs add calculated metadata to processes.

### **1. Dynamic concepts are concepts embodied in more than 1 frame of the universal movie.**

Dynamic concepts require more than one frame of the movie. Dynamic concepts are concepts that can be invented (imaged) for more than one frame of the universal movie. Over more than one frame, there will be motion, position, field, energy, time, wave, electricity, plasma, orbit, force, work, charge, line, point, numberline, number (counting), vector, position, love, fulfillment, society, etc. There is motion present in a dynamic concept. Dynamic concepts are "verbs" (a.k.a., process, phase, dynamic concept) is shown through more than one frame of the universal movie. A dynamic concept is a description of a relation involving motion (all mathematical concepts are equations that describes motion). A dynamic concept involves more than one visualization (i.e., requires a video), because there is motion. A dynamic concept is invented because there is more than one frame (dynamic concepts; process/phase). There is motion between the objects, which is showed as change over consecutive visualizations (i.e., over multiple video frames).

- A. An acting/moving object (verb) is shown and pointed to changing shape, separation, or attribute over more than one frame of the universal movie.
  - 1. Adverbs add observed metadata (about changes in relationships) to processes.
- B. There is something moving here; there is one or more objects in motion.
- C. A dynamic concept is animated by means of a video of objects in motion.
  - 1. For example, trade is a dynamic concept; trade means that something is being exchanged. Other examples of dynamic concepts include, but are not limited to: running, jumping, energy, mass, field, wave, time, equation, function, vector, spin, orbit, orbital, space-time, tunneling, vortex, electricity, fire, etc.

### **D. Dynamic concept qualifiers:**

- 1. **Adverbs:** A qualifier/modifier of verbs/motion/concepts. A word that is used to qualify motion or alignment. Adverbs describe what an object is doing. Adverbs cannot be used to qualify objects. Adverbs may only be used to modify a series of objects or displacement of one object.

- i. For example: deflected, diverted, swerved, incessant, ceaseless, perpetual, constant, curvilinear, rectilinear, dead, alive, living, being, 4D.

### **E. Dynamic visualization (i.e., a visualization that embodies motion)** involves the use of dynamic concepts, including but not limited to:

- 1. **Process:** action of an object or interaction between objects.
- 2. **Phase:** varying modes or conditions.
- 3. **Phase:** a stage in a process of change.
- 4. **Phase:** series of events, process of change.
- 5. **Phase:** a process of change. Phase equals motion, for example, ice turning into water.
- 6. **Stage:** a single step in a process; a particular phase, period.

### **2. Fundamental dynamic concepts are:**

- A. **Process:** motion of object(s). Process is a dynamic concept. Process (a.k.a., phase, time, etc.) does not equal state. If a process is to be presented, then a movie must be accompanying the presentation. A process cannot be put in a photograph. A process requires animation (more than one frame of a movie). Time, like motion, requires at least two frames, showing more than one location. Time cannot be defined without motion and memory. Neither time nor motion are synonyms of state, they are synonyms of phase (a.k.a., process). State is neither motion nor time, its location, distance, and existence.

- 1. Process/phase (dynam) = dynam + ic.
- 2. Process/phase (dynam) = more than one frame.
- 3. Process/phase = action of existent.
- 4. Process/phase = motion.

- B. **Motion:** two locations of an object (i.e., more than one location; two or more locations). Motion is a change of position/location over time. Motion (a.k.a., with inertia) consists of the movement of objects relative to one another. Motion occurs (is recorded) in/with time (Read: number line counting). Hence, motion means the change in location of an object (in time), and its visualization/explanation can be animated. Objects are observed and/or imagined along a number line called time.

- 1. There are three perpendicular directions (vectors, directions of motion) any given object can move in:
  - i. Depth (x motion) - downwards motion.
  - ii. Breadth (y motion) - sideways motion.
  - iii. Elevation (z motion) - upwards motion.
- 2. Motion can be visualized through animation

- of an object, showing the object relative to others in sequential frames:
- Location (L) 1 / Frame (F) 1 > L2/F2 > L3/F3  
> ...
- Plasma, for example, is always in motion; it is ionizing, it is a dynamic concept. Plasma embodies motion whereas solids liquids and gasses do not.
- C. **Distance:** separation between two objects.  
 D. **Location:** set of distances.  
 E. **Time:** more than one location [of an object].  
 F. **Number:** to count objects (locations) and concepts (data).  
 G. **Dynamic visualization:** creating a series of images of one or more objects in motion (animation).
- Position [of object].
  - Direction [of object].
  - Speed [of object].
- H. **Function:** an equation that represents motion.  
 I. **Navigation:** controlling where a object is going over time.
- Direction - object with a vector target/goal.
  - Orientation - object's alignment with surroundings.
  - Approach - manner or method for moving object to the goal.

In concern to the engineering (Read: development) of society, there are relevant static and dynamic concepts:

- Human value/static concepts include, but are not limited to:
  - Money - only given value/usage because people believe in it.
  - Need - describes the process of completing human requirements for physical objects (and services inclusive of objects) in order to sustain human survival and achieve human flourishing.
  - Freedom (is defined based on societal configuration type).
  - Justice (is defined based on societal configuration type).
  - Efficiency (is defined based on societal configuration type).
- Human interaction/dynamic concepts include, but are not limited to:
  - Trade (a.k.a., exchange) - describes the process of exchanging two objects, or information treated as an object.
  - Violence - describes the process of using verbal or physical aggression sufficient to do harm to the psychology or physiology of another.
  - Collaboration (cooperation) - describes the process of working together and using common

- resources to produce and/or use assemblies of objects for a common purpose/direction.
- D. Work - describes the process of using the body or mind to assemble, disassemble, use, or monitor some socio-technical system.

### 3.3.6 What is the axiomatic chain of understanding in rational science?

**CLARIFICATION:** *Objects have motions and humans have decisions.*

All rational statements in physics have at least an "object". The only universal property of all objects is that they have shape. An object is not that which someone can touch or see; it is that which has shape. The sensations of see and touch require a second object (sensory organ), as well as the principle object itself. See and touch involves two objects, something that is seeing and being seen, or something that is touching and being touched. Hence, the see touch criteria can't be used to construct a hypothesis of what exists. In other words, an object is that which has shape; an object is not necessarily that which can be seen or touched. Object does not equal see or touch. An object is that which has shape, only. However, if someone can see or touch an object, then the object being referred to is an object that exists. All that is seen or touched are objects that exist. However, shape is the only universal property all objects have.

Physics works with objects that exist, three dimensional (3D) objects that exist. All objects that exist are 3D. Two dimensional (2D) objects do not exist, but you can draw a table, which is an object. Someone can imagine or visualize a chair. That chair doesn't exist, it is only imaginary. Imaginary objects don't exist, and neither do 2D objects. Someone cannot see or touch a magnetic "field" around an object, yet that "field" has shape. Air cannot be seen, yet it too is an object that exists. The only universal property of objects (things) is that they have shape. Some objects (things) have thickness and weight. Some things are three dimensional (3D) and others are two dimensional (2D). Hence, an object is not that which has weight, thickness or 3D, because only some objects have these attributes.

For clarification of an object in the context of dimensions:

- 1 Dimension (1D meaning):** Definitions are 1D and provide conceptual-linguistic clarity. Definitions provide linguistic clarity.
- 2 Dimensions (2D object / concept vision):** Not all objects are 3D, some are 2D (i.e., there are 3D and 2D shapes). 2D visualizations provide visual concept model (schema) and object model (image) understanding.
  - Plane model (plane shape, 2D shape)** - is a 2D concept (e.g., circle, triangle, polygon, etc.).

- B. Concept model (concept shape, mental model, schema)** - is a 2D concept composed of many 1D concepts.
- 3. 3 Dimensions (3D static object vision):** All existing objects are 3D (i.e., have length, width, and height). 3D visualizations provide visual recognition of the objects (i.e., a static frame in the universal movie).
- A. **Surface** is a 3D concept (e.g., skin, enclosure, etc.).
- 4. 4 Dimensions (4D dynamic/motion object vision):** All existing objects can move in 3D (i.e., have potential elevation, breadth, and depth vectors). 3D visualizations provide visual recognition of the concepts (i.e., the universal movie).
- A. **Simulation** is a 4D concept (e.g., simulation engine interface).

**NOTE:** Some shapes are not 3D (i.e., not all shapes are 3D). For example, a triangle is not a 3D shape. A 'table' that exists in the world is 3D, but a 'table' imagined in the mind is not yet 3D. A triangle is flat. Flat means 0 thickness (Read: flat). Flat means 2D. In geometry, a 'plane' is flat.

An object (figure) is that which is contained by any boundary or boundaries. A boundary is that which is the extremity of any thing. An object (shape, figure) is that which is contained by any boundary or boundaries. That which has shape is that which has boundary. In other words, a shape (figure) is that which is contained by any boundary or boundaries. Boundary is that which surrounds a shape. Shape is an enclosed boundary within space (Read: within no thing). Shape is what is encapsulated by space (i.e., the region within the boundary).

All objects are finite; and thus, have shape [within space/nothing, which provides contrast to the shape]. Space has no shape. Therein, space provides contrast to the shape; space has no shape itself.

This means that objects have the following characteristics:

1. Only one universal property (Read: shape).
2. Objects are standalone.
3. Objects are independent.
4. Can point to it.
5. Sole object in the universe when it is presented.
6. Motionless.
7. Timeless.
8. Can be named.
9. Occupies a single frame of a movie (show slides and object with contrast is one slide of several, other movie real slides are white blank)... If the background wasn't there the object would be infinite, and there, it wouldn't be an object; because

an object is that which has shape.

**QUESTION:** How do we communicate the identification of an object? Point to it. Name it. Whatever is being pointed to, draw/illustrate it. Objects are described only after they are pointed to.

Mathematics applied to the universe includes the following definitions:

1. **Space-time** - four dimensional space whose points are events.
  - A. Three dimensions (Read: measurements) of distance (sometimes called, space vectors):
    1. Forward-back vector.
    2. Left-right vector.
    3. Up-down vector.
  - B. One dimension of time (Read: timeline, sequencing).
2. **Event:** a point in space-time, specified by its time and place (location).

Thereafter,

1. **Volume** - region occupied by an object.
2. **Mass** - the process of weighing an object. Mass is a dynamic concept. Mass is determined through weighing.
3. **See and touch** - these invoke another object (i.e., these invoke a sensory system, which is another object).

Objects all have the associative information attributes of:

1. Length is the distance between points (i.e., a number-line count, vector).
2. Time is the distance between events (i.e., event-line count, magnitude). If mass is present in time "now", then the mass "exists".
3. Mass is the amount of matter in an object (object quantity count, mass).
4. Location where mass takes up existence as an object (volume location).
5. Area is top down view of object taking up volume at a location.
6. Temperature is vibration of matter (thermal and radioactive quantity count, heat and fission).
7. Weight is mass relative to gravity.
8. Objects are at set angles to the vector pull of gravity.

None of the following emergent criteria of an object can be used to define the word, "object" (because, none of these criteria equal a standalone shape):

1. See - Tangible objects can be seen, but there are also intangible objects that cannot be seen (e.g.,

- magnetism). Some objects may not be see-able.
2. Touch - Touch is a verb (motion, a change in sensation). Touch requires two objects to come together and "touch" (the external object and the sensory system). Some objects may not be touchable.
  3. Mass - amount of atoms. Some objects may be visualized and not in existence.
  4. Volume - total area of atoms occupied in a vacuous space. Some objects may be visualized and not in existence.
  5. Motion - movement, force between objects.
  6. Made of - object composed of elemental objects.
  7. Temporal - sequencing and change counting of objects.
  8. Subject - phase of matter of an object as solid, liquid, or gas.
  9. Noun - the name of the object.
  10. Color - surface properties of the object, specifically visible light properties.
  11. Exist - the location of the object.
  12. Three dimensions (3D) - the potential creation, or existence, of an object.

That which has physical presence is that which has shape and location [relative to all other objects in the universe]. In science, the questions must be asked, what exists independent of the observer? If the observer is removed, what exists? Fundamentally, object and locations exist independent of an observer.

It is only possible to talk about the existence of objects in rational science. It is ordinary speech it is possible to talk about the existence of concepts. For the purposes of physics, it cannot be said that 'information', 'love', 'intelligence', or 'effect' exists. Rational physics is the science of existence.

The word 'exists' belongs exclusively to physics:

1. Exist: physical presence.
2. Exist: physical [object] presence [location].

That which exists (i.e., is in existence) is anything that is physical; anything that has physical presence. Something which is physical cannot be a concept; it has to be an object. Per this criteria, something which exists must have shape and location the set of distances to all other objects in the universe for it to exist as a tangible object.

There are intangible objects also. Not all objects have location. There are objects, like triangles, which have shape, but not location. Hence, those are objects that do not exist, because exist is object + location. The only property all objects in the universe have is shape. That which is physical, is that which has shape. That which has shape may not be visible or touchable by an organism. Shape is what characterizes an object, not seeing

and touching. Intangible objects are physical objects, but cannot be touched. Tangible objects are physical objects, but can be touched. The noun is the object, the thing. Shape is the first pattern(s) of universality. There must be a physical interpretation, and to understand a correct physical interpretation there must be a physical mechanism.

For the purposes of physics, a noun is that which has shape (only). If it does not have shape, then it is not a noun. For instance, orbit is not a noun, privacy and anonymity are not nouns; instead, these are verbs. A noun is only some thing that has shape, which is the definition of an object. Only objects can be nouns in rational physics, because only objects can be visualized as having shape.

**CLARIFICATION:** *Anyone can study and not understand or explain. Science is about explaining, not studying.*

### 3.3.7 Definitions and rational science

Definitions must be used consistently. There should be no undefined words in definitions. Definitions should not contain antonyms, synonyms, or double negatives. Words must be defined in terms that are not synonyms; otherwise, the logic is circular (irrational, not rational). When an antonym or synonym is used in a definition, then it becomes a circular definition and the word/term has not actually been defined. For example, definitionally speaking, a "thing" or "object" cannot be defined as "no nothing" (as in, "thing: no nothing"), because an antonym is used. If "thing" is "no nothing", then what is "thing" or "object", is it "no nothing"? No it is not, because using double negatives, antonyms, and synonyms is not appropriate in definitions. Hence, it is irrational to state that "nothing" is a word used to define the absence of a thing. "Nothing" may mean the same thing as "no thing", but that is not a definition, that is only an synonym. For example, it is not logical to define a "horse" as "not a dog, cat, owl, etc." Similarly, it is not logical to define "intelligence" as "not love, energy, mass, etc." Circular definitions are no definition at all.

Rational physics has different definitions for words that appear in both math and rational physics:

1. Position in math = ordered pair (x, y).
  - A. Here, position refers to a specific location for which there are geographic or other coordinates (e.g., the global positioning system, GPS).
2. Place in rational physics = the volume a body occupies.
  1. Position in rational physics = place.
  2. From a physics perspective, place and position are synonyms, because they both refer to the object itself. A fish in the ocean displaces water. The exact volume displaced is the place and position. Therein, the ocean is space.

3. In rational physics, there is no need for place or position (i.e., there is no need for those two words), because it is the object itself.

### 3.3.8 Describing

*A.k.a., Description, mathematics.*

A description of physical phenomena contains:

1. A listing of attributes/properties of a physical object or concept.
2. In science, adjectives describe objects and adverbs qualify or characterize motion.

Descriptions (grammar) are different than explanations (mechanism, cause). Descriptions precede explanations:

1. A description is a listing of properties.
  - A. A concept is a description. A description is a listing of properties. A chair has four legs, is brown. It fell at a 9.8m/s. Explanation reveals causes and mechanisms for phenomena. In other words, something happened and you are going to understand, say how it happened and why.
  1. A mathematical equation is a description, and not an explanation.
2. An explanation is revealing causes and mechanisms for phenomena.
  - A. Something happened, and the explainer says how it happened (meaning, not a description, but why did it do what it did and not something else).
  - B. The best way to explain any mechanism is with language, visual or verbal/textual.

There is a difference between technological advancement and comprehension (i.e., wisdom). Individuals, and society, can advance technologically, but not advance equally in comprehension. For instance, a society could have the knowledge to produce magnets, but not comprehend how magnets function. A society could produce something highly complex as seen in nature, but that doesn't mean their (1) explanation of it and comprehension of what it is, and (2) how it works, is accurate or even close.

**INSIGHT:** *Rationality is understanding, evidence is experience.*

### 3.3.9 Explaining

*A.k.a., Explanation, objective explanation, theorize, theory.*

Explanation is the fundamental purpose of rational science. Before causality can be established scientifically,

a mechanism [of action] must be established. Rational science is explanation of a mechanism (and not, description solely). In rational science, a theory is an explanation (and, an explanation is a theory). Here, mechanisms must be explained (at least) visually by showing images of objects and animations of objects in motion. A mechanism cannot be explained without an object. Explanation comes from visual reasoning (Read: visualization + spatial-pattern logic). Spatial-pattern logic refers to the identification objects (as patterns with sub-patterns), and understanding how objects interact and fit together, including how they may be perceived from different spatial oriented perceptions.

In rational physics, everything has to be connected by a[n object] mechanism, which can be visualized, and thus, understood (by individuated consciousnesses). Intelligence (here, navigation) requires understanding, otherwise one could not say, "it is intelligence". And therein, understanding needs awareness, otherwise one could not say, "it is understanding". Where awareness is blocked by belief, there is a filter/lens narrowing a complete understanding and perception.

Explanations are not descriptions. Explanations can be visualized as moving objects (physicalization), concepts relate two or more objects and cannot be moved (in the sense of navigation), unlike objects. Concepts are not entities, physically separated and moved around some physical location set. An object is that which has shape (physical, and hence, visual, and hence, understandable), and a concept is that which does not have shape, and thus, must be definitional/descriptional. Concepts cannot be reified. An entity either has to have shape, or it does not have shape (and is a relationship). It cannot be both at the same time, except for in the context of consciousness.

The language of rational physics is illustration; the proposal has to be able to illustrate a mechanism (a rational physical interpretation). Alternatively, the language of experimental physics is statistics, math.

An explanation of physical phenomena contains:

1. The causes (Physics) or reasons (Philosophy) underlying a phenomena.
2. How (mechanisms as physics) or why (purpose as philosophy) a consummated event happened. An explanation deals exclusively with the past.
3. A theory is an explanation, and a hypothesis is an assumption. In experimental science, a hypothesis is a theory that has no evidence, or it's a speculation, a speculative theory. An explanation in rational physics must include an object as a physical mediator. The mediator has only 1 criteria, and that is, shape. Vacuum, space is a synonym for nothing (i.e., that which does not have shape). The antonym to vacuum is shape (i.e., something). Illustration (visualization) ensures there is no mis-interpretation. Objects can be visualized, and

through visualization, clearly understood and communicated among a population.

The rational scientific method does not use the senses (i.e., does not use vision, hearing, smell, taste, or touch). Instead, it uses the brain and intellect (i.e., individuals have to use their own brain and intellect to understand; they have to think for themselves). Science explains objectively so that others understand, not so that others believe.

**APHORISM:** *The interested describe, the wise explain, the curious search.*

### 3.3.10 What is irrational

*i.e., Irrational explanations.*

What is the difference between a rational and an irrational definition. An irrational "explanation" is no explanation at all. There are rational models, and hence, rational understandings as well as irrational models, and thereafter, irrational understandings. An irrational explanation is the movement of concepts. A rational explanation is the movement of objects. Science starts with objects and definitions, and what follows is object[ive] explanations of causes and mechanisms. Physics begins with objects; there has to be an object to do physics. The explanation of causes and mechanisms.

**INSIGHT:** *Irrational explanation is treating objects as concepts, or concepts as objects.*

The first and second rule of rational physics is:

1. Physics requires an object; physics cannot be done without an object. Physics can only be done with objects.
2. Moving any concept is irrational; treating any concept as an object is irrational.

Hence, it is irrational to say that a concept exists; because all that can exist (object + location) are objects. Without objects there would be nothing to study or analyze. Hence the word object must be defined first for the purposes of physics. Because, physics is the study of the physical, of objects. There must be some thing (i.e., an object) in order to do physics; and further, it must be something that exists. Summarily, physics is the study of objects that exist (i.e., physical objects). Physical objects exist and are present with a distance between them. For example, wave(s) is a concept; there is no physical object called 'wave'. Wave is not what something is, it is what something does: A wave of what? A "wave" is a process occurring to some medium. The concept "wave" describes the process occurring to that medium. Similarly, mass (weight) is a concept that cannot be moved around; instead, the object that has the attribute of a mass (weight) is that which is moved. In other words, rationality means that physics can only be done with

objects, where concepts are possible descriptions of processes, and concepts cannot be moved around. What is rational is that concepts are not moved around.

**INSIGHT:** *A rational individual seeks an explanation.*

There is a criteria for defining irrationality:

1. An irrational explanation is treating concepts as objects - turning a concept into an object (i.e., reification or concretization). Communication becomes [essentially] impossible to clearly follow, because it is impossible to visualize concepts as objects (note: concepts can only be visualized in concept models).
  - A. Hence, to be rational, concepts cannot be treated as objects.
2. An irrational definition includes circular reasoning - the definition begins with what is at the end.
3. An irrational definition does not identify axioms - not defining concepts (in a model format) down to their axioms.
4. Using inconsistent definitions or undefined words is irrational. Additionally, using two or more different definitions of a term used in the same theory/claim is irrational. Communication becomes [essentially] impossible to clearly follow when there are inconsistent definitions and undefined usages of words.
  - A. Hence, to be rational, definitions must be consistent and all words must be defined down to their axioms, and therein, assumptions.
5. If the theory (model) is inconsistent with or doesn't follow from the assumptions. Communication becomes [essentially] impossible to clearly follow without clearly stated relationships between axiomatic elements, assumptions, and models.
  - A. Hence, to be rational, the model must follow from (Read: interconnect coherently with) stated assumptions.
6. Describing (especially mathematically) and claiming to have visually explained. A description (conception) is not an explanation (visualization); they are different concepts. Communication becomes [essentially] impossible to clearly follow, because there is no visualization of objects, only mathematically calculated.
  - A. Hence, to be rational, explanations cannot just be mathematical, they have to be visually explainable at the concept model as well as object model levels.
7. Mechanism proposed doesn't work or cannot be imagined/visualized. Models must be visualized (at the conceptual and/or object level) if they are to

- be imagined/see by others (who may share in their evolution). Communication becomes [essentially] impossible to clearly follow, because there is no visualization of objects.
8. Hence, to be rational, [physical] mechanisms must use objects, all of which can be visualized.
  9. An abstraction does not equal an object. Equating an abstraction to an object is commonly known as reification, as in, to make something that is not real, real as a shape in the physical world we experience together.

For example, "money" is one of the most common reifications in the early 21st century:

1. Paper money = the 'paper' is the object, the "money" is a static concept.
2. Gold money = the coin, rock is the object, the "money" is a static concept.
3. Silver money = the coin, rock is the object, the "money" is the static concept.
4. Trade = dynamic concept.

For example, there are irrational definitions of temperature:

1. "Temperature is a physical quantity" is an irrational statement:
  - A. Physical is the same thing as an object. Physical is that which has shape.
  - B. Rational physics note: How can temperature be a physical quantity if that which is physical is that which has shape.
  - C. Quantity doesn't have shape. Quantity is a concept. There is no quantity that has shape.
  - D. Hence, physical quantity is an oxymoron.

Instead, a rational definition for temperature may be

1. Temperature expresses hot [heating, atomic motion] and cold [no motion]. Temperature is the manifestation of light, thermal energy. Energy = capacity. Capacity = release of thermal energy. Temperature is the release of thermal capacity [to do work] from an object. The source of the occurrence [of heat, light] is matter:
  - A. Matter is any substance that has mass. Mass is a quantity of matter.
  - B. Heat is the flow of [thermal] energy from matter in the form of "light" through a rope-like object. Temperature is a process, not a/the physical quantity of an object.

### 3.3.11 Reifying

*A.k.a., Reification, concretization.*

Reification reveals a problem in the noun structure of the English language. Most English speakers are taught that a noun is a person, place, or thing. But, that claim is not true if a "thing" is defined in a particular way. For something to be a thing, it has to be an object and have shape. There is no thing that can be pointed to and say, that's "humility". These concepts are about the relationships between things, and not, the things themselves. The problem is that in English that distinction is lost. When this distinction is lost, discussions and decisions become more likely to be challenged and conflicted, because there is no meaningful distinction about objects and concepts that relate objects. This means that there are thousands of English words that people argue over for which there is no way to solve the argument, because there is no thing to recourse to (i.e., no thing to point to, to course correct to, etc.). Through reification, the relationships between things are treated as things in themselves with their own properties, independent of an evaluation, and all the while missing the things which are actually in the relationship.

Without something to point to the word can mean whatever you want it to mean. And, people start to think they really know what these ideas mean, as though, something which is only a concept, only a relationship has a set of attributes like a physical object, a spoon, for example, has a set of attributes. The concept only has no attributes that the individual subject doesn't give it.

There are relationships between things, for instance, love, intelligence, happiness, democracy, economics. These words at most specify relationships between things. But, to make something that describes a relationship only into a thing itself is reification. The noun structure of English confuses these objects and relations between objects, and treats them the same. People then have arguments about all sorts of subjects that are not things that exist at all, and communication can be very confused.

A lot of things that people in early 21st century society treat as real spatial objects are not real spatial objects; instead, they are concepts that people have reified as spatial objects (i.e., physicalized, concretized, as in, they have made them [in their minds and decisioning] into something spatial/concrete, and they treat them as if they are a real spatial thing). People then start treating these abstract "objects" as real by moving them around in space, squashing and stretch them, performing spatial operations on them, yet fail to realize they are social constructions that hinder an understanding of what is actually occurring. Herein, for many people, money is the simplest of these examples. Money is a concept, an abstraction, but people walk around with paper (cash), metal (coin), or digital currency on them and call that money. People transfer money between each other, and financial institutions produce and sequence money. Money is an abstraction that humans give value to. A paper bill exists, a metal coin exists, but "money" does not exist; because, "money" is a concept in people's minds. The paper bill (the physical thing) is an object,

and money is the concept, in this case, the value and use anyone gives the dollar bill. "Money" is a concept, the dollar bill (or coin) is an object, and it exists if it has location. Money is something that people give value to, something they believe in and may affix socio-technical relations to. In this sense, money cannot be traded, because money is a concept and not a physical object. Similarly, the idea of trade (end exchange) are concepts that describe human social interaction.

A simple example may further illustrate the point. Assume that a factory receives an order for 50 units:

$$\begin{array}{lclclcl} \text{noun} & = & \text{noun} & + & \text{noun} & + & \text{noun} \\ \text{robot} & = & \text{head} & + & \text{torso} & + & 2^*\text{arms} + 2^*\text{legs} \end{array}$$

Here, the production line can determine the number of parts it needs to fulfill the order, because every factor in this equation is a physical object (Read: noun). But, what would the factory build if it was sent the following equation:

$$\begin{array}{lclclcl} \text{verb} & = & \text{verb} & * & \text{verb} & + & \text{verb} \\ \text{jump} & = & \text{run} & * & \text{walk}^2 & + & \text{lift} \end{array}$$

In the case of all verbs, what should the factory build; what parts should it order?

### 3.3.12 Language in the early 21st century and rational physics

In rational physics, the following concepts are verbs (note here that in the ordinary speech of the 21st century, they are considered dynamic nouns; i.e., in the early 21st century, the following verbs are confused with nouns):

1. Angle.
2. Change.
3. Charge.
4. Count (measurement).
5. Displacement.
6. Distance (travelled).
7. Circle.
8. Center.
9. Edge
10. Energy.
11. Field.
12. Force.
13. Geodesic.
14. Information.
15. Itinerary.
16. Line.
17. Location.
18. Manifold.
19. Mass.
20. Orbit.
21. Orbital.
22. Infinity.

23. Motion.
24. Movement.
25. Number.
26. Point.
27. Plasma.
28. Position.
29. Tesseract
30. Time.
31. Trajectory.
32. Universe.
33. Wave.

The issue of whether or not something is a noun is significant, in part, because it determines which adjective/adverb is to apply. If there is wrong axiomatic classification (mixing nouns and verbs), then wrong qualifiers will apply (adjective/adverb). Both objects and motion can be qualified:

Adjectives qualify nouns (qualifying objects & concepts)	Adverbs qualify verbs (qualifying motion)
Infinite	Incessant
Infinitesimal	Constant
Continuous	Perpetual
Straight	Rectilinear
Perpendicular	Parallel

There are not experiments in rational science; experiments are for technology development. Instead, rational science requires rational thinking on the part of the individual "scientist", the product of which is individual understanding. In actuality, a better visual understanding of the object[ive] mechanism.

In physics, there is no physical object called number. Number is a count of something. In rational science, the word number means "to count". In the language of a rational science, number is conceived of as a verb and not a noun. A specific number is an adverb on counting (e.g., 1 counted, 7 counted, 43 counted).

The language of technology is math. The language of physics is universal modeling (visualization). Math describes and physics explains. Rational physics does not involve the testing of anything. Rational physics involves cognitive understanding. Technology is not rational physics. Technology what tests, and is tested to work.

Mathematics is a language of quantitative adverbs. It only describes, qualifies, or modifies motion. Math allows for quantitative descriptions about how something moves. Math is not needed to explain a mechanism. To explain is to visualize. Take any mathematical equation and the only thing the equation is doing is describing some kind of motion; it is providing the location of a point or a value. the Mathematics doesn't deal with objects (as in rational physics), even though it talks about mathematical objects (i.e., mathematical objects are not the same thing as objects that exist [in reality], physics,

etc.]. Additionally, mathematics can only describe, it cannot explain. There is no science of mathematics since mathematics is a language. Math is a language, math is not a science. Physics is the science, and math is a language. Math is not required to understand how the world works. An equation [mathematics] is a description. Here, there is no such thing as mathematical physics, instead math is a language used for describing, not a means of explaining a mechanism.

Geometry is the foundation of mathematical physics, wherein:

1. The point is the building block of geometry.
2. Geometry is the study of shape and size.
3. Geometry is the branch of mathematics whose primary subject is spatial relationships and shapes of bodies. Geometry studies spatial relationships and shapes, while ignoring other properties of real bodies (density, weight, color, etc.).

### **3.4 The two scientific methods combined into a single method**

A combination of the rational and experimental methods of science might appear as follows:

1. **Step 1:** Identify a question, and present assumption(s) and initial visual model.
  - A. Objects - shapes qualify as objects. All objects in the universe have shape; shape is the only universal property of all objects. Concepts do not have shape; only physical objects (as opposed to concept objects) have shape. Something is that which has shapes, and nothing is that which does not have shape.
  - B. Definitions - objects qualify as definitions. Math goes here.
  - C. Initial model of facts - models/explanations of existence qualify as facts. Math does not go here.
  - D. Explanation (theory) of model - having sufficient understanding of mechanism (dynamics) of existence that it can be controlled. Mechanisms are the how, are that which is explained. The explanation needs to come from a physical mediator, otherwise it is not a physical theory. Note that to explain something to someone else, math is not required.
2. **Step 2:** Design and conduct test (controlled experiment), observe results, and analyze results and apply statistics to observations.
  - A. Design and test object(s) to study control of existence given by initial model.
  - B. Observe the results of the experiment (a.k.a., test).

- C. Apply statistics to the observed results of the experiment.

#### **3. Step 3: Integrate and iterate.**

- A. Integrate information in order to understand more.
- B. Integrate information in order to build predictably useful objects (i.e., technologies).
- C. Iterate definitions.
- D. Iterate model of facts.
- E. Iterate explanation (theory) of model.
- F. Iterate understanding to develop more understanding (in concern to the real-world and how "we" can best live together within it).

### **3.5 Science in the context of different types of society**

**APHORISM:** *Contempt prior to investigation condemns you to permanent ignorance.*

Just because it hasn't been scientifically proven doesn't mean it has been dis-proven. Science is a description of the way the world works, and a shared explanation that we use to produce better material (and socially creative of fulfillment) conditions. No lifeform can behave independently of the way the world works. The more greatly we understand the technical principles of reality, the better we can design in the world. Politics sees science as a product that can be bought and sold. The method of science starts (relatively speaking) with the observation of something that conflicts with an assumption or belief. A scientist starts with a hypothesis about the way the universe works (an assumption and proposed explanation), then the scientist sees something that doesn't fit that hypothesis (assumption and proposed explanation), and then the scientist visualizes and tests in order to generate understanding, knowledge of the universe, and an orientation toward more fulfilling environments, and therein, a new set of assumptions and explanations. Scientists come up with visual (illustrated) objects and working conceptual hypotheses. Scientists look for dis-confirming observations and use visualization in order to test (falsify) control mechanisms. To establish beyond reasonable doubt (illustrated understanding) what the mechanism is.

In the market there is a business model to how science is done. In scientific papers produced under market-State conditions, the reported scientific method and resulting data may be accurate, but the summary (abstract) and conclusions are often bought (and paid for) by financially [profit-driven] interested entities. In the market, science is for sale. Opinion stands in contrast to a scientifically deduced conclusion. Herein, self-integrating systems evolve by putting their ideas and biases to a test. In other words, scientists compensate for their biases by putting their ideas to the test. The scientific method, itself, attempts to minimize the influence of bias or prejudice in the experimenter. It provides an objective

and standardized approach to conducting experiments and in doing so, improves their results. Scientific learning comes from resolving the difference between someone's expectations [of reality] and [actual] reality. Conversely, what often happens under market-State conditions is that when something conflicts with what is believed, then it will be suppressed, and that suppression occurs at the socio-economic access level of the [believing] entity. For instance, corporations may suppress scientific results that conflict with profit-driven beliefs through orchestrated censorship and commercial interests. Similarly, for instance, governments may suppress scientific results that conflict with authority and -driven beliefs through orchestrated censorship and commercial interests. In the market-State, there is also science done intentionally in secret.

Curiosity allows us to direct our intentions and actions toward knowledge and understanding. Science presupposes that there is a regular order to nature and that there are technical principles underlying all natural phenomena. It assumes that these principles are, to a large degree, constant. The more we observe, the more we know, the more we can predict. Together, a population can see "what's so," and then do "what works" for their fulfillment.

Faith quickly eliminates the need for any object, evidence, fact, argument, or experimentation. Industry has a very dirty practice of hiding all of the outcomes that don't conform to their profit-oriented expectations. A funded science is not a free science. When scientists get a grant from industry they are essentially working for that [for-profit] industry. Research ends up in the favor of the funder.

In the early 21st century there is a "replication crisis" in science. The replication crisis refers to some unacceptably large (perhaps well more than half) of all scientific research is unreproducible. Either the study was poorly done, poorly interpreted, the scientists got the wrong answer, or there was bias that influenced what actions and reports. It could be called the funding crisis, because science is funded by monetary interests, and it is those profit-driven interests that directed the operation. In the early 21st century scientists have difficulty repeating the same experiments with slight alterations, to fill in gaps in knowledge and improve understanding. There is very little funding in repeating experiments with slight alterations.

Many major players in the market (i.e., major corporations and industries) know how to influence science to increase their profits, and have been effectively doing it for decades. The best way to influence science is to influence its source and every level therefrom. The corporation(s) fund the scientists, fund their conferences, and fund panels. Essentially, every level of the science is funded (or attempted to be funded) by corporations with a for-profit interest. By the time the "science" reaches the "experts" and "policy makers" who are there to make recommendations to the public and create policy, there has been money invested

at every point. At the State level there is lobbying (i.e., market influence) that seeks to change State policies and recommendations. Then, after behaviors and products have been adapted to fit the "science" (i.e., not science), then there is [a lot] money to be made when people get sick and products need repair and continuous service. The money reduces the ability to produce good science and have that real science be heard in the world. A lot of diseases and products don't need to exist, and only exist to make a profit, while causing harm along the way.

In any scientific inquiry, including that into the conception and operation of a community-type society, it is essential to look at (i.e., to input and study) all of the available data. However, if the data is of low or terrible quality, and that fact is not considered, then looking at the totality of the data will likely lead someone to wrong conclusions.

#### **APHORISM: *Garbage data in, garbage results out.***

Peer review subjects scholarly work and research to the scrutiny of other experts in the same field as to check its validity and evaluate its suitability for publication. Yet, publication does not confer veracity.

Questions necessary whenever applying the peer review process include, but are not limited to:

1. Is peer review used as a filter for what is and isn't published? If so, that is called censorship, not science. Why not just publish everything that follows the scientific method?
2. Who gave the scrutinizers the authority to be considered experts, and to decide what is and isn't true, and what is and isn't published?
3. How do "you" know that the peer reviewers know what is and isn't true, sufficiently to scrutinize a piece of work?
4. From whom did the scrutinizer learn and/or memorize what is correct/true?
5. Is peer review just a means to maintain the status quo?

Further complicating issues is that scientific journals (Read: scientific knowledge publishers) do not like to take down articles that they have peer reviewed and published. This is the case even when later research has shown an article to be false. This is a problem, because for those who are not expertly (intimately) familiar with the research they may find a paper that the experts know is false, read it and accept them it as true. In the market, a mistake in the literature leads to the possibility of incessant repetition of mistakes and a reduction in corrective feedback. Many people who have based their careers on false ideas will fight to protect them, because their career is their means of survival in the market and their reputation is their means of psychological survival.

To some extent, the veracity of peer review is a fallacy. Just because something is peer reviewed doesn't mean it has veracity. It just means it has been peer reviewed, which means it has got past several people. That said, peer review is one quality assurance process, and even though it is not perfect, it is not worthless either. It is simply one way of reviewing, and to some extent, validating, scientific content.

In science there is a dichotomous decision taken about the acceptance or rejection of a hypothesis. In the societal conditions of the early 21st century, if a hypothesis is accepted, then getting the work published is relatively easy. However, if the hypothesis is rejected, it is much more difficult to have the work published professionally. This is a form of publication bias. In professional journals, most people are required to find that something is true in order to get their work published. Yet, the role of a scientist is to disprove him or herself. In this way, journals are biasing the scientific publications available, thus incentivizing 'H1' (acceptance valuable and publishable), but de-incentivizing 'H0' (not acceptance, not valuable, and not publishable).

In the early 21st century, competition, politics, bias, and other issues of concern often drive scientific reports, including their synthesis and subsequent news reporting. Bias often starts with the selection of authors, which is frequently the choice of corporations, governments, and other entities with inherent biases. Authors and other related employees may be chosen because of their specific views. Sometimes writers and researchers are present because of their intellectual curiosity, sometimes they are there because of a salary, and other times, because they are activists. In this later case, that of activism, such activists often have serious and inherent biases that flow easily into their writing. Some people prepare and author papers in a manner that disregards science in an effort to make a major news headline, which then becomes a huge benefit for their career advancement and future employment opportunities (i.e., their salary). There may also be group think within an organization that is producing a report. Effectively, in the early 21st century where the market-State produces "scientific" reports, there is often an unscientific filtering process that takes place during the research, aggregation, consolidation, synthesis, and reporting of information in "scientific" reports where bias is, or may be, present at many levels. This leads to reports that do not represent the real science, but are portrayed and reported widely as doing so.

In the early 21st century, there is a saying, "science progresses one funeral at a time". In other words, when someone commits to a particular profession in the market-State, they commit to that paradigm of thought, and will frequently defend it to their death. Once someone is committed to a market profession, they are effectively committed to being ignorant of solutions that don't prop-up their profession; they are committed to ideas that won't put their professional income and credibility in jeopardy. One of the biggest barriers to

evolution in science is the egos of the "professionals" that have to admit they [previously] got the science wrong. In concern to subordinates, if they don't replicate the orthodoxy while the authority is still alive, then they likely won't have a career in the profession any more. In the market-State, "scientists" have built their careers based on specific theories and lines of thought. As soon as they are committed to that line of thought, the "scientist" is now required to defend that line of thought to their death. And, the "scientist" will defend it to the death, because it is their credibility and career (their livelihood) on that metaphorical line. That, and the fact that science is bought and paid for by industrial for-profit interests. Science costs a lot of money to do, and for-profit industry pays for it.

Fundamentally, the organization (and administration) of scientific knowledge requires an integrated and coordinated organization for databasing, searching, and reviewing. In a community-type society, technical "peer" reviews are carried out by teams and working groups, and by the public at large. These reviews are open and transparent to the population.

### 3.5.1 Journals and peer review

Scientific journals (i.e., publications) select what they want to publish. And in general, they are known for not publishing research that they are either uncomfortable with, outright disagree with, or that contradicts the ideas being put forward by their funders/sponsors. Yet, 'publication bias' shouldn't cause one to reject science; it should cause one to be especially careful in their verification of all science done by industry, for competitive entities are likely to engage in gaming strategies, many of which mask propaganda with the moniker of science.

In the market, releasing content early can affect a scientists ability to publish in a journal. In the market, the process of getting knowledge to the public and into application is often slow and broken. Frequently scientists don't want to share potential discoveries with the public until they are sufficiently vetted. Journals have historically reserved the right to vet discoveries and tell the world about discoveries. Some scientific journals will reject work if the author(s) have discussed, spoken of, or released snippets of the work prior to submitting it the journal. A tweet or podcast could upset the journals. In other words, journals can reject a scientists work simply on the basis that it is not novel anymore. Alternatively, some journals embrace pre communication and encourage pre-published releases of snippets in order to attract interest and facilitate their decision of what to decided publish based on public interest. Journals can change the direction of study for decades because of a few key decisions.

In the market, there is intellectual suppression. Throughout the history of science famous researchers who eventually created entire new fields of science initially found it nearly impossible to publish their

research. Some didn't succeed for years, even decades. The scientific community ignored them, but eventually they were heard; eventually they conquered the suppression, but only after a major fight. The journal editors rejected their papers because the new research results were in conflict with "common knowledge" (a.k.a., the scientific majority); they were too eccentric. Yet, the 'eccentric' ideas were right, and common knowledge was not. In many cases, nobody conspired to silence these revolutionary researchers. Editors and fellow scientists simply assumed that the eccentric papers were misguided.

It is wise to constantly ask ourselves, "Do I have the foundational understanding (i.e., expertise) to evaluate the claims that people around me are making?" In community we all have the opportunity to verify findings, which are discovered transparently and available for [re]-view by everyone. Yet, the market system [with its orientation toward competition, profit, and social status] "poisons the well" of its peer review contribution system. In the market there is a saying, "publish or perish". In other words, there is incentive for scientific misconduct in order to solidify professional careers and reputations, or further business pursuits. A "risk factor" is a condition that increases risk. Money is a risk factor for corruption, and it furthers the likelihood of corruption. In the market it is important to ask, who funds the "science"? Therein, the reason for altering data is simple: It's called job preservation. Yet, at another level, data might be changed to induce fear so that a dominating organization can assert more control (or, continue to exert control). Without transparency and informed verifiers data can be easily "processed" for monetary gain and social power. In community, instead of trying to falsify and influence, we just work with what we have.

The peer review process is designed as a check against fraud, poor quality research, and other issues that arise when journal editors are determining whether to publish a paper. In theory, the editor passes a paper to another researcher in the same field who can then check that the research is factual, relevant, and sufficient for publication. In practice, in a competitive market environment, this process is filled with bias and is not straightforward. The peer review system is rife with issues and abuse. (Bellus, 2016)

Sometimes the data is not false, but it is contextually misleading, because it pertains to population that is incorrectly presumed to be the whole population/the population in its natural environment. Such as studying cells in a 2d matrix versus their function in an organismal 3d dynamic space. The data about cloistered cells is not incorrect, but it would be misleading to apply it to cells in a symbiotic and dynamic 3d environment. Similarly, data about animals in a zoo is not incorrect, but to then apply such data to the behavior of animals in their natural environment would be misleading. Seeking to understand something by studying it in a separated environment, disconnected from its natural environment is not the best way to study something. Published

peer reviewed literature often fails to flag studies with inaccurate conclusions because the data originate from findings with inaccurate contextual application. Hence, someone could be reading literature that is peer reviewed and appears solid, but would be invalid when applies to a different, possibly more natural context. When generating finding through the identification and analysis of the method context is essential.

**NOTE:** *A lack of research does not mean there isn't an effect. In other words, a lack of data does not mean that there is no effect.*

### 3.5.2 Science is a self critical and productively skeptical method

**APHORISM:** *Science cannot solve the ultimate mystery of nature. And that is because, in the last analysis, we ourselves are part of the mystery that we are trying to solve.*

In community, the users of science are the community population, especially, the InterSystem team of engineers who apply science to technological development of an information-based habitat service system network. Science doesn't operate on consensus. The so-called "scientific consensus" is a statement: a scientific majority opinion that is widely disseminated and publicized; the collective judgments, positions, and opinion of the "community" of scientists in a particular field of study. The idea of scientific consensus is somewhat misleading. Consensus implies general agreement, though not necessarily unanimity (i.e., it implies majority opinion and not universal agreement). It is a misnomer because the idea of "consensus" means "everyone agrees"; there is no dissent in consensus if it is consensus. It means the agreement of every participating individual upon a certain conclusion or claim. In the 21st century however, scientific "consensus" has come to mean a majority opinion or claim ("majority consensus"), where if a few people dissent it is still being called a consensus, changing the word consensus to mean "a majority". This creates a confusion in terminology (or trivium grammar). And yet, scientific majority consensus gives society a place to start. Unfortunately, in the market-State, most professionals are loyal to the majority consensus for obvious reasons (e.g., tenure, funding, promotion, etc.).

In 1847, Ignaz Semmelweis discovered that washing hands with an antiseptic solution prior to facilitating the delivery of a child-birth reduced mortality due to infection. Despite various publications of results where hand-washing significantly reduced mortality, his observations conflicted with the established scientific and medical opinions of the time and his ideas were rejected by the medical "community". The Semmelweis effect/reflex conflicted with established norms, beliefs and paradigms that were embraced by the consensus. Ignaz Semmelweis went to a mental institution and then the grave in the dissenting camp, even though he was eventually proven right under the environmental

conditions of his time.

**APHORISM:** *Of course, "all scientists agree" when you censor the ones who don't.*

If there is a consensus that translates into a practice of disregarding new evidence and observations, then there is not science present. A lot of discussions which may be productive and educational are being stopped in their tracts because of this misunderstanding of an extremely powerful word, "consensus". In a community-type society, instead of consensus, all evidence is within the reference of different explanatory frameworks, until verified visually, either physically or by some visual model, and then, it is still within an experimental framework, but it is now in an integratable category called verified, or visually understood (i.e., truly understood, repeatable).

There are many instances throughout recorded human history where "scientists" have said something is impossible, and then later, science has shown that it is possible. The "institution" of science is laced with situations where those who "break the mold" and try and push the edges of that which is being normalized get threatened and attempted to be destroyed politically, socially, professionally, and economically by those within the scientific institution. Some common examples throughout history include: Ignaz Semmelweis; Michael Servetus; Galileo Galilei; Alfred Wegener; Albert Einstein; Nikola Tesla; Alan Turing; Pons and Fleischmann; John Mack; Helmuth Nyborg; and Peter Duesberg.

It is important for everyone (i.e., essential for every stakeholder) to see (or have available to see) the entire body of work around scientific research. The whole that you produce a study, you publish an abstract, and then, when people want to see the full text you say, not without payment, which implies that you are either lying or your research is flawed, or the research was conducted with the desire for profit or social status in mind, and thus, cannot be trusted and must be replicated. In a scientific environment, individuals do not necessarily have to trust one another, because there are processes that they can understand, and the processes are trustworthy. When scientific process are mixed with business processes, then the issue of trust becomes complicated.

**INSIGHT:** *Science is more than a body of knowledge, it is a way of thinking; a way of skeptically interrogating the universe with a fine understanding of human fallibility.*

### 3.5.3 Science in the context of claims about reality

**APHORISM:** *The greatest level of proof is direct proof through experience.*

Any claim to science must be examined with the societal paradigm that originated it. The scientific process can be biased or compound false results. The scientific process is corrupted by the profit incentive (i.e., it is corrupted by business). What information can be trusted when

entities in participation are incentivized to withhold and obfuscate information that could be used as a competitive advantage. Business has eroded our sense of trust in science while reducing the incentive to share growth oriented experiences that attune us more greatly to the nature of an emanating, iterating, and iterating reality. Fundamentally, just because something (e.g., an action) isn't proven by science, doesn't mean it isn't valid. It is useful to be skeptical, but to identify as a skeptic can be intellectually disabling. Skepticism can quickly become dismissal without discovery. Skepticism based on ignorance is unhelpful and possibly dangerous, but skepticism based on science may be appropriate.

**INSIGHT:** *If individuals are not able to ask skeptical questions, to interrogate those who tell them something is true, to be skeptical of those in authority and in experts, then either, they are up for grabs to the next charlatan who comes by, or there is a structural power hierarchy for control of individuals.*

### 3.5.4 Scientific reductionism

*A.k.a., Science without systems science.*

Historically, designers have used the scientific method in an attempt to explain, predict, and control social, economic, and environmental transformations in the real world. In general, the traditional scientific method uses analytical thinking to handle problems, and follows certain major steps:

1. Reduction of complexity through analysis.
2. Development of hypotheses (Read: reasoned guess).
3. Design and replication of experiments.
4. Deduction of results.
5. Rejection of hypotheses.

In the context of design, the use of the traditional scientific method often leads to the following problem-solving process:

1. Define a problem.
2. Reduce the problem into sub-problems.
3. Find solutions for each sub-problem (sub-solutions).
4. Aggregate all sub-solutions in an overall solution that addresses the problem as a whole.

Without the application of systems thinking, a design approach that only applies the scientific method leads easily to reductionism. Reductionism refers to the belief that describing phenomena on one level (i.e., fundamental parts) allows the deduction of explanations from a higher level (i.e., entire system). In other words, reductionism believes that by reducing (disassembling) everything to its fundamental and independent parts, that the whole system can be explained -- the property of the fundamental parts deduces the behavior of the

whole. Reductionism combines the description of the behavior of the fundamental parts to explain whole. For instance, it is highly unlikely that the traditional scientific method alone (i.e., without systems language) can solve for the future consequences of present actions (e.g., sustainability issues).

Historically, science without systems thinking leads to the ineffective handling of complex real-world problems, due to the lack of understanding of the characteristics of the system currently in place and the inability to acquire sufficient knowledge (and certainty of knowledge) needed to address the real-world [root] problem. At worst, the unanticipated side effects of not perceiving a problem as systematic generates solutions that may create new problems, which confound and complexify the situation. For instance, a personal transportation solution intended to be environmentally friendly by offering technical improvements in energy efficiency may result in side effects, such as an increase in the number of vehicles, an increase in energy consumption, and an increase in miles travelled (Greening et al., 2000). To address such a scenario, the integration of systems thinking into design approaches is required.

Note that the reductionism critique of science as applied to social concern is not fully justified, because an honest and objective inquiry that starts from the analysis of the parts must still consider their interdependency to the whole through some principles and axioms. In order to reduce the likelihood of reductionism, systems sciences approaches human needs and social problems using methodologies, tools, and techniques that are associated with a systems language.

### 3.5.5 Science and service

We already expect science to inform the decisions we take in concern to the use of technology. For instance, we expect that science has been done when we use a bridge, interface [in a controlled manner] with an information space (i.e., smartphone / ayahuasca), and travel in a technological form of locomotion (i.e., car, train, plane). If you use these services, you expect that someone has figured out how to design those things so that they function as intended and are not dangerous to you.

Science may be applied to facilitate the resolution of an inquired decision space where discovery is necessary. By applying the methods of science to discover more efficient and more regenerative ways of aligning with our goals and standards (i.e., "values"), individually and collectively (i.e., together), we can produce more fulfillment (i.e., more of that which we intend). In community, we appreciate each other's evolving interests, even if they are not marketable.

Ultimately, for science and engineering to be useful, they must look at the entire body of evidence. When unadulterated by the need to gain some kind of market advantage over a competitor, or simply for the sake of profit, science works as a feedback mechanism for

improving ones understanding of the surrounding world around by means of testing, observation, visualization, and the adjustment of what is known based on a resulting experience.

**CLARIFICATION:** *Herein, technology is developing inventions through trial and error.*

## 3.6 Science is universal and self-correcting

**INSIGHT:** *Most people act as if they had a private understanding, when in fact the verifiability of existence is common to all. Science, as an approach, facilitates orientation, navigation, and self-correction. Through the application of science we correct ourselves.*

The great virtue of the methods of science is that they are universal and the knowledge that they discover is universally applicable. When practiced in their purest and least bias form, one organization's or community's science is not different from that of another.

Traditional biases and erroneous loyalties in science generate skewed data and misinformation, and they must be overcome for science to actually be "science". The methods of science have at their very core the notion of asking questions and challenging assumptions. Even if they are the establishment's own assumptions. Importantly, the functional usefulness of science does not call for scientists to manage society. Instead, we as a community transparently apply the methods of science to the social system for the benefit of all in our community.

Status quo practices are qualified against our objective reality through the frame of reference we know as the methods of science. The core mechanism of which is self-correction. **Self-correction** involves a process of *testing, logical calculation, hypothesis generation, and theoretical integration*. The repetition of experiments under variable and controlled conditions facilitates the informing of self-correction. The self-correction attribute of science enables the evolution of our awareness. Life is a path of constant self-correction; anything that limits our ability to self-correct, such as beliefs, limits our self-evolution and our social-navigation.

In many ways the scientific method is simply a technocognitive tool for the testing of ideas with evidence. The expectations generated by a scientific idea and the actual observations relevant to those expectations form what may be known as the scientific argument. The elements of the argument are always related in the same logical way, but those elements may be assembled in different orders. The three elements of the scientific argument are: observation, idea, and expectation. If the expectations are observed, then the "argumentative idea" is more likely to be accurate. If the expectations are not observed, then we are less likely to accept the idea with a clearly identifiable rationale. A scientific theory then becomes more greatly informed.

The fact that the building you are in hasn't collapsed is

some kind of evidence that we have been able to come into harmony and understand some kind of natural physical law or rule that is described as a regulation of reality that exists beyond our control and is common to all of us in this shared experience. It appears that we can either be aligned and in harmony with nature (as we emergently come to understand it through the scientific method) or we can fight it to our personal and social disadvantage (we can deceive ourselves).

In science, highly understood and consistent regulations that are well verified become "fact". If a lot of assumptions are needed to prop it up then it isn't a fact. Almost any theory can fit if there are enough assumptions present. One in a billion is the functional standard for the applied scientific principles to our everyday technology. Your smart phone device wouldn't work if you had error rates of more than one in a billion. Technology is the transition between the edge of what is known and things that are known well enough so that society is able to make technological devices.

A 'technical principle' is a verified regularity in probabilistic reality, in nature - a simple scientific model [simple as elegant, not simple as simplistic]. Here, reality is understood as involving the concept of a discoverable and verifiable set of "technical relationships". In other words, reality is a system of "technical relationships". These relationships are synonymous with the term "scientific". Science allows for alignment and harmonization with nature, through integrated corrected feedback applied toward adaptation at an individual and social level. The scientific worldview is a neutral worldview. It is the application of an approach. It can be applied in the context of an useful purpose and identifiable set of needs at a systems level.

**INSIGHT:** *The more we discover of existent systems the more informed our common creations will become.*

We continue to learn throughout our lives. There is no recognized phenomenon that isn't undergoing a constant change of definition as the evolution of knowledge continues. Thus, truth itself is an emergent distinction in its resemblance to reality. Science cannot show us what truth is, but it can show us what was true and might be true with a degree of probable accuracy.

Imagine everyone arriving at their own individual decisions based upon information that is accurate and equally shared (a type of social equality). The only consensus that has ever met global consensus is the scientifically verifiable; everything else is opinion or a personal model. Individuals may be "entitled" to their own opinions and beliefs, but they are not "entitled" to their own facts among a common pool of verifiable information used for orienting and fulfilling a community (Read: a common society). Scientific consensus is very different from the consensus in social, political, and other more general uses of the term. The scientific consensus is not an opinion reached by a group as a whole, but a sufficiency of corroborating evidence to structure the

arrival at an verifiable position. Scientific consensus is evidence driven and it is "realized" or "arrives" when the evidence is strong enough. The scientific consensus is something that emerges once enough data and evidence are compiled to support a particular model or conclusion. In early 21st century society, the consensus is typically established through scientists convening together at conferences, the "literature" production & publication process, peer review, and sometimes surveys. Sometimes "position papers" are issued to communicate what the scientific consensus is. It is important to note, however, that it implies general agreement, and not necessarily unanimous agreement.

What is a 'scientific consensus' if it is not a form of formalized agreement framed upon a structure of re-verification and critique? Consensus in science is not an opinion poll. It is not equivalent to a political consensus or social consensus. A scientific consensus (or theoretical model of the data) is reached through a preponderance of evidence directed by a process of critical thought to yield insightful understanding that ever more greatly aligns our models with the "nature" of the real world. A critical perspective allows a mind (or cognition) to see the shades of grey; instead of viewing events as black and white; it allows for the maximization of error correction. Consensus will still have bias, and hence, each individual needs a strategy from which to derive more information and further overcome their biases. The questions each individual must ask themselves are: From what system [of thought] do I derive information from the natural world? What thinking practice do I use? Do I seek the integration of a better thinking process to more greatly understand what I observe or am I promoting an interest group (as many "publications" are known to do)? Because, if someone cannot derive evidence from the natural world as well as integrate and verify what they observe, then how could they possibly re-orient their life (and society) toward one of more natural fulfillment (if not through a more thoughtful practice).

**INSIGHT:** *The results of science can be trusted [only] in a society with integrity.*

The only real way to eliminate biased research is to eliminate what causes people to conduct and publish it. In other words the way to eliminate biased research is to eliminate the incentive to produce biased research. Incentives lead to outcomes (i.e., aphoristically speaking, show me the incentives and I will show you the outcomes).

If scientific consensus is embedded within a competitive market system, then such consensus might directly challenge business interests; for example, as was the case when it was found that smoking industry cigarettes was a direct cause of lung cancer. In science, evidence is scrutinized and validity is demonstrated. Results are published and necessarily replicated, and position papers are put forward and criticized to explain the replicated findings and refine an ongoing model of

the evidence. Scientists identify experiments, perform them, replicate them (or refute), and discuss and publish their results.

The time to embrace new understandings is when they can be demonstrated and replicated, and not before (where there are not understandings, but beliefs and opinions). This is not to say that we should forfeit our critical thinking skills and automatically accept the scientific consensus or what "experts" say, but it is good starting point to come to an understanding of what is currently accepted before considering otherwise.

Scientific consensus is an "understood agreement" by the foremost individuals studying, performing research, and publishing in their field. They ought not to be casually dismissed because an alternative view sounds convincing or conforms to our beliefs. But, they ought to be criticized and questioned as we further experience [existence]. It could even be said that scientists have a duty to inform others, particularly those in [their] community of what the evidence says (or "points to"). There is no "true thing" from a scientific point of view. It's about being as accurate as possible.

We are evolutionarily programmed to be cognitive misers; we naturally desire cognitive efficiency. Such efficiency is one of the three basic biological drives (seeking pleasure, avoiding pain and conserving energy). As a species we are always looking for ways to conserve energy. In the real world it is of benefit to seek the [subconscious] auto-processing of information in order to produce a faster response time to an environmental circumstance [which might pose a threat to our survival]. But, if someone's thinking is poorly structured or the will behind cognition fades, then someone might in fact be responding with a greater efficiency of lazy thought. A rapid and lazy approach to conceptualization and characterization can deviate someone significantly from a healthy goal-oriented response. We need to stop, think, and navigate toward a higher state of potential fulfillment. We need to ask ourselves, what type of thinking are we optimizing?

Scientific studies into 'perception blindness' indicate that conscious experience maintains some form of subjectivity (as a conscious decisioning space). If our conscious experience of objective reality is subjective to some degree, then it is wise to use verified evidence to design and develop new socio-economic systems. If subjectivity were conceptualized at the social, and wherefore, political level, then a system of biases and agendas, of persuasively misleading information, might emerge; a system of politics. If human experience is partly subjective then when humans interact socially and with common resources, they ought to do so through an emergently common and verifiable organization (i.e., scientific knowledge).

Some people have trust issues with science, and rightly so. When this dislike is explored, then it is found that people do trust the scientific method, and they do not trust the existing science industry, which is clearly corrupted through the mechanism of profit incentive

as well as other maladaptive incentives present in the socio-economic environment of early 21st century society. Herein, science must be distinguished from the market, from industry, and from otherwise authoritative applications of the concept of "science".

Science functions incrementally, adding [bits of] information to create a larger and more accurately modeled "picture" of the real world environment. Such incremental and small advances are often not conducive for "front page" media coverage. And so, the media often has to distort the studies, or highlight exception studies that are contrary to the general understanding of the field to sell their product. The mainstream media is an industry, which both sells a product and modifies memes. The media regularly and deliberately misrepresents science, and hence confuses the public, under the guise of providing "balance for the viewers". Further, researchers in the marketplace sometimes go for the big headline as opposed to being genuine with their research.

'Institutional science' is science embedded within an institution. It is important to make a distinction between science as a method and science as an institution, which leads to the corruption of its results and the incentivized manipulation of data to forward an agenda. Institutions are incentivized to rig their "science". Science cannot be trusted when it is applied by the hands of entities with an abstraction directive, such as that of profit, power, or control. Fundamentally, industries filter perception "to add more value" to theirs and their own - the very idea of an institution (as a unique producer of services) filters out the perception of wholeness, and hence, systems-oriented solutions. Institutional science might also be referred to as "authoritarian science", "corrupt science", and "science for profit", and it leads directly to the weaponization of science. Science can quickly become a tool for making weapons or products more profitable. Yet, the true value of science lies in its result, and the questions individuals ask when they are confronted with evidence; particularly, "How can we use this scientific knowledge to improve our value orientation, and ultimately, our lives."

In the market science becomes politicized, lobbied, and commodified, and there is a lot of emotion, bias, and life-need gets injected into it such that it starts to become quite unscientific -- science as "scientism" - not science. Studies are no longer designed to come to an ultimate "truth", but are applied as part of a marketing effort toward concern for the sale of a product or the furthering of an agenda or position. Marketing can quickly dilute science to the point of nonsense.

Wherein, fact revision and commercial distribution of inaccurate information can disable the critical faculties of a population. Similarly, when relevant information is dropped from the total information set (i.e., left out), such as when data from controlled trials is withheld by producers of goods and services in the economy, then society's evidence-base for its [shopping] decisions becomes less trustworthy, and the term 'evidence-

based', itself, becomes relatively meaningless. When competing organization have the incentive and ability to withhold scientific evidence, then trust is absent. If the evidence base cannot be trusted and evidence can be withheld, then nothing that follows from it is trustworthy either. The market is a competitive system. Competitive systems are untrustworthy due to their incentive structure.

The industrial weaponization of science comes in two forms. The first form involves the misleading of others through the claim of science to forward an agenda. Therein, "weaponized science" (or industry science) is that which is not science, but has the appearance of science. The product of such behavior is marketing, not science. Industry studies can show anything they want (and there is a hiding of science behavior prominent in all profit-oriented industry). Therein, true science is either entirely absent or obfuscated, and that which is called science is a wolf masquerading in sheep's clothing, it is a tool of manipulation and of lie telling. When the claim to science is being used as a weapon, then individual and social benefit come second to the manipulation of an audience (the public) for profit and power, or even just one's simple livelihood. The second form of weaponization involves the utilization of the results of true science to develop weapons [at the expense and cost of human fulfillment]. It is important to point out that the military-industrial-congressional complex does in fact conduct secrecy cloaked science to forward their own defense and clandestine agendas, which may or may not be for the benefit of all of humankind. Any technology can be applied to a "dual-use" where the first use is that of mutual benefit to our total selves and the other is to individually attack that which we have stopped perceiving as ourselves (i.e., life-serving vs. weaponization). A knife can be used to kill more efficiently or to cook more efficiently; a knife is just a useful tool. All technology is essentially morally neutral (with the possible exception of automated and artificially intelligent, self-replicating weapons systems). Technical advancement among humanity is inevitable, and every significant technological advancement can be weaponized in some form. Without equivalent social system advances, advances in technology might accelerate a population to-ward its own demise.

The manipulated weaponization of science (i.e., the first form) can be very subtle and extremely hard to detect. For instance, the medical industry wants the public to "believe in science". But, the "science" about their products appears to contradict itself; so, the industries want the public to believe in the "science" that they favor. There can exist the appearance of science to forward agendas - agendas masquerading as science. And, this is why "you" must use critical thinking skills when examining all "science" from an industry or an establishment [for they have overt and covert agendas]. If you are looking to the science to lead you down a path of excellent health and a long life of fulfillment, then you will likely be maligned by the "science" that industry and

"professionals" purport to be science. Science cannot be bought; if it is bought, then there can be no trust that it is science.

There are many large and undiscussed problems with research in early 21st century society. Most notably is the fact that vested commercial interests are unlikely to publish negative results [about their business partner's products]. In general (if not nearly always), commercial entities pay "researchers" to find a particular [advantageous, pre-desired] result; they won't pay to find negative results and they won't do business again with a research company that breaks legal contract and publishes such results.

Science for profit cannot ever be science because trust in an interrelationship is unverifiable (i.e., there are deceit promoting incentives). Science is an objective method of inquiry. Objectivity does not involve agendas and ethical positions; it does not involve commercial or political interests, only the collection of emergent facts. Often what is passed for science today is not actual science, but a covert agenda being passed (or more accurately, pushed) as science.

Science was initially met with heretical condemnation and is still often rejected today; even though it is the natural means by which the human organism learns about the world and is a method of inquiry that comes perfectly naturally to all humans. The ability to think scientifically and follow the scientific method is innate to children. And, we understand that the scientific method has literally facilitated every single attribute of human technological progress in history. The Community has naturally chosen the scientific method of analysis and organization as a base from which to develop a common pool of knowledge that we may all use to better ourselves.

Science is also misunderstood by many "scientists" who do not yet fully comprehend that science is the methodical, conceptual product of a larger organization, that of the systems methodology (or, systems science).

Generally, herein is a broad distinction here between other forms of thinking and scientific thinking. In truly scientific thinking, which makes possible the synthesizing of functionally technical systems, we work with what the world has to offer versus what we are trying to force upon it. Let us start with nature and optimize within nature.

**NOTE:** *The exercise of conscience arises from science (con [with] + science). Conscience involves the knowledge of how to generate and remain in a state of fulfillment - to understand behavior that is rightly aligned with fulfillment and behavior that is wrongly aligned with fulfillment.*

### 3.7 Societal material problems are significantly technical in nature

**QUESTIONS:** Do you have technical problems? What do you base your technical solutions on?

*Do you desire an appropriately defined and engineered] solution to your technical problems?*

Nature maintains technically discoverable relationships embedded within systems and perceived as patterns. We can meet our common material needs with scientific investigation and systematic technological engineering. Therein, the methods of science are applied to social concern and social problem solving. We understand that most of the world's problems regarding the basic needs of humankind (e.g., shelter, food & clothing, energy & restoration, etc.) and the needs of our material community systems are technical in nature. Technical problems may be understood and resolved through the application of the most current science and technological systems engineering.

Although science gives us the most efficient way of solving problems, it should not be the reason to create a conformed world. Unity in diversity is the principle of the universe.

In the early 21st century, it is the abuse and misuse of science and technology that scares people, not science and technology itself.

*"The time has come to realize that an interpretation of the universe—even a positivist one—remains unsatisfying unless it covers the interior as well as the exterior of things; mind as well as matter. The true physics is that which will, one day, achieve the inclusion of man in his wholeness in a coherent picture of the world."*

- Pierre Teilhard de Chardin

### 3.8 Scientific thinking

**NOTE:** *Science is essentially similar to philosophy in that they are robust and self-correcting methodical searches for the truth. Yet, science is not philosophy. Science has the option of using technological instrumentation in its inquiry into existence, whereas philosophy is inquiry without technological instrumentation [through the intellect solely].*

Scientific inquiry is a conceptual framework that functions to collect more information from the existent world and structure it into theories and models, which are developed within rigorous and logical constraints defined by the scientific method. The core of scientific reasoning involves the techniques of inductive and deductive reasoning.

The scientific method is a process for creating models of the natural world that can be verified and falsified experimentally. The scientific method requires making observations, recording data, and analyzing data in a form that can be duplicated by other scientists. In addition, the scientific method uses inductive reasoning and deductive reasoning to produce useful and reliable models of nature and natural phenomena. Inductive reasoning is the examination of specific instances to develop a hypothesis or theory (to build up to a question

or conclusion through the gathering of evidence), whereas deductive reasoning is the use of a theory to explain specific results. Abduction is just the generation of a hypothesis. Simply, moving from "hypothesis" towards "data" is always labelled "deduction." The other arrow begins at the tail of the previous, moving downward to the right from "data" to "hypothesis" and is always labelled "induction." Induction builds theories, deduction provides the structure.

Essentially, through reasoning, we are trying to prove intellectually to ourselves what exists, by means of our own observations.

1. The Rules of Deductive Reasoning - mentally taking ideas apart; analysis.
2. The Rules of Inductive Reasoning - mentally putting ideas together; synthesis.

Analysis and synthesis, like the grammar stage of the Trivium Method, depend upon definition. If not for definition it would not be possible to take things apart and reform them together, possibly differently. Herein, 'reason' takes items apart and analyzes them by identifying, comparing and contrasting that which makes an item unique as a differentiating factor.

Scientific reasoning involves induction and deduction. Induction uses data to generate new knowledge. Deduction uses knowledge to generate hypotheses that predict system behaviour (i.e., future data). The volitional consciousness is known to either put ideas together (induction) or takes ideas apart (deduction). Deduction is the observation of something, and then its explanation, wherein it is necessary to specify how an idea was taken apart into its components/particulars for understanding. Induction involves the confirmation, rejection, and possible modification of a previous hypothesis through experience by our senses. Our senses are the only known way to deduce. The test of a completed induction is the pointing out of an observed affect; wherein, sensation provides direct proof. The only way to prove something is to point to it - the processes of observing and then deducing. As thought is refined, we move forward; we move forward by testing our thoughts.

Inductive reasoning pertains to empirical reasoning based on experiential observation and uses the experimental method in which a hypothesis, which encompasses a particular problem [idea, concept], is formulated. This hypothesis is tested by gathering additional data to see if the hypothesis is false. A major misunderstanding lies in the fact that scientific hypothesis testing never ends up proving the hypothesis; instead, it either "rejects the hypothesis" or "fails to reject the hypothesis". If a hypothesis has been subjected to numerous rigorous attempts by scientists to its falsifiability, but it remains unrejected, then it becomes a theory. At no point, however, is any theory ever considered by scientists to have been "proven": in the scientific world, all truth is "relative" to further evidence and provisional to the emergence of more

accurate information.

The basic tenet of science is that nothing is ever "proven", a theory is accepted because scientists "fail to reject it". And, a well-substantiated explanation of facts is a "scientific theory". To a scientist, the idea of a "fact" can mean a repeatable observation that cognition can commonly and verifiably accept as perceptual input for further processing into potential knowledge; it can also refer to the "truth" or "falsity" of a proposition.

Facts are the world's data. Theories are structures of ideas that explain and interpret facts. Facts don't go away when scientists debate rival theories to explain them. Einstein's theory of gravitation replaced Newton's in the century, but apples didn't suspend themselves in mid-air, pending the outcome. Theories make use of facts. Theories are created to describe facts and relationships between facts. They are used to predict facts and explain facts.

Theories never become facts. If you drop something, it will tend to fall. That is the fact of gravity. Newton wrote one set of equations describing that relationship. That is the classical theory of gravity. Einstein wrote a different set of equations for the same purpose, meaning there's a different theory of gravity incorporated in the theory of General Relativity. Today there are people working on yet another entirely different set of equations to describe the quantum theory of gravity. Theories can change and grow. They can be discredited and supplanted. Sometimes they can stand up to centuries of investigation, and sometimes they can't bear any scrutiny at all. No theory -- right or wrong, accepted or rejected, remembered or forgotten -- none of them change the fact that dropped things tend to fall [with predictable certainty].

There are multiple inductive and deductive associations, including:

### **1. Inference (a.k.a., inferential logic) - finalization (conclusion), equalization.**

A. Axiomatic operators of an inference:

#### 1. Deductive inference:

- i. Premises (a.k.a., assumptions, facts; usually requires more than one).
- ii. Conclusion (a.k.a., principle, inference, inference; only one conclusion).
- iii. Equals (i.e., set equal to; "==").
- iv. *For example, premise 1 with premise 2 equals conclusion A.*

#### 2. Inductive inference:

- i. Observation (e.g., dropped pen from elevation, falls to ground).
- ii. Inference (e.g., something, "gravity", may be the cause of the pen falling to the ground).

### **2. Reasoning (a.k.a., argument).**

A. Axiomatic operators of an reasoning:

### **1. Visualization.**

2. Definitions.
3. Explanations.
4. Evidence (test).
5. Certainty.

### **3. Logic (a.k.a., operational logic).**

A. Axiomatic operators of logic:

1. Conjunction.
2. Disjunction.
3. Conditional.
4. Negation.

### **4. Analysis.**

A. Axiomatic operators of analysis:

1. Interconnectedness (wholeness).
2. Causative (something that is causal must always associate).
3. Associative (relatedness).

### **5. Engineering (a.k.a., technology, synthesis).**

A. Axiomatic operators of engineering:

1. Projects (real-world goals).
2. Coordination (teamwork).
3. Intelligence.

In engineering, problem identification is deductive if it is thorough, and presenting a solution is inductive. In other words, induction is the engineering of a solution - the solution is obtained (or induced) from facts about the real world. An idea (or solution) that is inductive is not arbitrary because the same senses give everyone the ability to observe [with marginal degrees of variety] the same object in the same fashion, and perception blindness aside, it is only the paradigmatic or ideological interpretation of what we see or perceive where there is conflict.

In philosophic argumentation, deductive arguments attempt to draw conclusions from at least one premise, which as a generalization, must be the conclusion of an inductive inference. In other words, a deductive inference is a conclusion based on reasoning from at least one accepted premise. It is important remember that some premises are qualified approximations. For example the Earth is a spherical body, a sphere by definition has equal radius in all directions, and therefore the radius of the Earth is equal in all directions. There are two reasonable premises here and a conclusion is reached from them. However, the conclusion is slightly flawed because the first premise is only an approximation: the Earth is really a prolate spheroid (it bulges toward the equator because of its rotation).

Inductive inference is a conclusion based on repeated observation of fact. Drop a particular kind of ball on a particular floor from a particular height numerous (n) times, and you can, by induction from those examples, make an inference and a prediction about what will happen the next time you drop the ball. However, your prediction is not a fact, in that you won't know by actual observation the result of the n+1th drop until it has

happened.

Unlike deductive arguments, inductive reasoning allows for the possibility that the declaration is false, even if all of the premises (facts) are true. Alternatively, in a deductive argument if all premises are true, the terms are clear, and the rules of deductive logic are followed, then the conclusion reached is necessarily true. Instead of being valid or invalid, inductive arguments are either strong or weak, which describes how probable it is that the conclusion is true.

Deductive reasoning pertains to the usage and generation of logical language (the logical language of science). Deductive reasoning uses declaration [assertions of statements that are logically connected]; and procedurally, it does not account for whether the statements are true or false as long as they follow the logical argument (i.e., it identifies validity). Indeed deductive reasoning does not have to be based on evidence nor use statements of fact. Providing the logical form of statements is maintained (i.e. the rule non-contradiction is followed), then logical argument is a powerful tool in determining the validity and coherence of a statement. It is for this reason that logical argument (or syllogistic logic) is the basis of mathematics. An argument is valid if it is impossible for its premises to be true while its conclusion is false. However, if the truth of a statement is determined without any facts (and evidence), then the statement is removed from any usefulness in a real world context, for it is disconnected from that which is relevant and from which evidence originates, from the real world. When thinking abstractly, one should always ask oneself: how do these terms and statements relate to actual concretes, to reality? What do they really mean and what other concepts might their meaning rely on?

The process of always relating abstractions to concretes, in turn, exemplifies the essence of what is so unique about an objective approach to decision and action. An objective approach recognizes that all arguments and discussions, and all human knowledge, are expressed in terms of propositions, which are comprised of concepts. Someone who remains objective consistently and intentionally asks what the concepts mean, how they are formed, what they refer to in reality - especially the key concepts that are crucial to philosophical, social and economic arguments. S/he asks what makes each concept possible, what it depends on and presupposes. S/he identifies, as a fundamental logical fallacy, any argument that uses a key concept while denying part, or the entire, essential context that makes that concept possible. This critical error in thinking and integration is known as the fallacy of the "stolen concept".

In "A letter to a philosopher", Ayn Rand (1997:511) wrote that this method ought to be one's "constant [and exclusive] approach to all thinking and all problems.... [She asked:] Do you think that the main tenets of modern philosophy could withstand the test, if you examined them by this epistemological method, with the same

rigorous precision, with the same observance of the full context, the genetic roots and the exact definition of every concept involved?" In another work, she observed that some children (the most rational ones) learn new words "by treating words as concepts, by requiring a clear first-hand understanding (within the context of their knowledge) of the exact meaning of every word they learn, never allowing a break in the chain linking their concepts to the facts of reality." (Rand, 1990:20-21.) In other words, never allowing a break in their integration and model formation, they follow both inductive reasoning and deductive reasoning. Therein, deductive reasoning is subsumed under inductive reasoning. Inductive reasoning build the information structure, deductive reasoning is used to maintain the structure. In this sense, induction is the path to knowledge, deduction allows cognition to categorize a new observations within the existing knowledge that was previously induced [into four categories: data, information, knowledge, and values].

If deduction exhaustively demonstrates that an observation cannot be subsumed or integrated into the existing knowledge structure, in a loose sense, you may have deductively reached the conclusion that you have discovered something new, (i.e. not previously induced). By and far, induction is the integration of observations - such as Newton with his prisms refracting the light into different colors, merging them with the prisms back into white, inductively concluded that white light was actually comprised of all various colors.

**NOTE:** *The classical definition of reality is the claim that "reality" is every substance (or entity), action, attribute and relationship that ever was and ever will be. Existence is all the real things that actually exist in it.*

### 3.9 Neutral knowledge

**INSIGHT:** *Scientific facts reduce the entropy of a decision space, thus allowing for better decisions, and consequentially, better outcomes.*

Take information dispassionately on the basis of its credibility and veracity, its verifiability, and not whether it fits with an ideology or belief system. As long as "you" have a rigid belief "you" are not developing toward a fulfilling higher potential. The mixture of an identity with a belief system is a form of egotism (or subjectivism). Those who follow science and its pursuit of open inquiry cannot have investments in fixed beliefs.

If you are skeptical but not open minded then you might catch yourself in a trap. That trap may be known as a belief in self-omniscience that says, "If I have not experienced it then it cannot exist". To be skeptical but not open minded is to essentially believe that you know everything. This is a trap. There is another equal trap, that of being open minded and not skeptical. Then, you fall in the trap that says, "I believe whatever I am told". There exist very real illusions and mirages, that we "see"

and are convinced that they are real, but are not. Science submits itself to the evidence.

It is the discovery of knowledge, which is the ultimate cause of human technological and scientific change, and such change is at the roots of all fundamentally useful social change.

While human beings have certain needs, those needs can only be met to the extent allowed by the knowledge available in a particular society (i.e., culture). There are two ways to derive knowledge. Scientific knowledge is acquired through the methods of science. The second is that of logical reasoning from scientific knowledge (i.e., scientific reasoning). This form of reasoning provides useful analyses and maps [processes of change] of the universe. Modern inventions such as the internal combustion engine, television, radio, and electrical power arose partially or wholly from reasoning through scientific knowledge.

By the mid-20th century, mathematician and philosopher Bertrand Russell would write, "Almost everything that distinguishes the modern world from earlier centuries is attributable to science." As scientific knowledge was combined in unpredictable ways, humans learned how to manipulate the natural world for human benefit to an extent previously unimaginable. The impact of scientists on society has expanded proportionate to society's increasing reliance on, and ability to use, scientific knowledge. But, many people in early 21st century society still fail to recognize that their "success" now requires them to take on a set of new, broader responsibilities — both in their own geographic areas and around the world. What if 'success' weren't a destination, what if success was defined as a process, a journey (i.e., you never "arrive"). Science and scientists have the potential to play a critical role as a compass, guiding society in responsible and beneficial directions.

We also know that the application of science and technology can be used to produce harm. A lot of the fear ascribed to technology in early 21st century society reflects commercial pressures and power-driven agendas, and in a less commercial environment the technology would act differently. Science produces information; information has a neutral charge; information is acted upon by consciousness to produce rippling variations in the potential of all experience, and technology represents one of those potentials. Some patterns [of potential] are harmful and others beneficial to fulfillment.

*"As we come to understand how human beings can best collaborate and thrive in this world, science can help us find a path leading away from the lowest depths of misery and toward the heights of happiness for the greatest number of people."*

- Sam Harris

### 3.10 Science ought inform rules

**MAXIM:** *There are not exceptions to a rule of*

*nature.*

A rule is the description of an interrelationship with an objective. Rules can be applied to the abstract as is done in legal systems, they can be applied to human social behavior without any abstraction as they are done in the restorative justice system in community, and they can be applied to the design of [real world] technical systems as is done in engineering. Also, society may operate through a rule set that defines its culture. Human beings are a social animal with a socio-technical life that requires rules (restrictions on behaviors and operations). The direction, orientation, and approach to the construction of these rules is highly dependent upon the societal system in question.

**INSIGHT:** Power over the rule creation and administration is real power [to dramatically affect the lives and fulfilment of others]. In the early 21st century, the rule creation and administration system/service is the State.

In the real world, the universe, rules are formulaic regulations in probabilistically patterned phenomenological existence. Patterns can be discovered and engineering can be improved. Therein, the essence of a scientific principle is a scientific, formulaic rational for the why and how of a phenomena. This formula contains regulated statements (or technical arguments) about interrelationships in existence. Rules are technical constraints (as discoverable and universally regulatory principles) provide the opportunity for the expression of conscious choice within a material decision space.

Models are characterized by rules that capture how aspects of the world change. Through the application of a model, rules can be used to understand and to control state changes. The combining of rules into usable models facilitates the accurate alignment of a probabilistic decision space with an intended direction, in a commonly discoverable, dynamic world space. In reality, every decision space involves probability and there exists a pattern between the selection of decisions. The formula informs the pattern, but it is not the pattern. These probability patterned rule sets form the boundary conditions of reality, which are ideal for the acceleration of consciousness' evolutionary development ... once they are recognized. Boundary conditions are binding and continuously operative, whether someone acknowledges them or even knows about them. It doesn't matter how much someone believes or dis-believes in them, they still represent boundaries to the movement and expression of consciousness in reality. They were not initiated by man and they cannot be changed by man. They are not a prison, nor are they prison conditions. They are the consequential technical conditions of the reality system that allow for complex decisions and alternative choices. They are impersonal forces and personification of them is invalid for they are part of a larger system that cannot be personified and individualized (i.e., removed from

itself).

Constraints provide structure for conscious experience. Imagine four people sitting at a table in front of a deck of cards, an object none of them had ever seen before. An observer then starts a timer and says, "Go!", without conveying any additional information. Only the concept "initiate" was conveyed, but void of any additional information [within which to alternatives are present]. So the question then becomes, "Go do what?" The people sitting in front of the deck of cards require a common ruled information set to use the cards in such a manner that they may actually play a "card game". The individuals at the table could in fact make up a complex set of rules for what to do with these cards, from which appears strategies, choices, feedback, plans, and assessed evaluations -- all of this choice pops out of the rules.

In systems science, a ruleset is all the rules by which elements in a system can interact. To that ruleset, initial/situational conditions are added, as well as power, to computer, simulate, or otherwise extrapolate useful data. In computer science, a ruleset is a set of rules that provides a way of telling a computer what operations to perform is called a programming language. A programming language's rules are its syntax. In computer programming, syntax is the concept of giving specific information (word) sets in specific orders to computers so that they do (compute) what is intended (expected). Different languages use different word sets in different orders, which means that each programming language uses its own syntax.

The concept of a rule can have multiple applications. Rules exist to define a structure within which interaction may occur. If there are no rules then there is no structure and nothing to interact with, and nothing to do. Rules of language and rules of nature offer constraints that allow for higher-order and more complex decisions. The constraints offer the potential for choice in the iteration of a system.

The evaluation of feedback from a decision maintains the possibility of a differently adapted next (or iterated) decision space. All feedback in a system involves the formulaic composition of the system. The more information available to the user of the system, the more accurate a decision will be in its alignment with the user's next intended state iteration of the system. Let's say for example that some event we can label "X" occurs, this could be any event, any event whatsoever. From this event we understand that 10 choice alternatives exist, and those 10 choices represent a decisions space relative to that thing that happened. Within those 10 choices, however, is a formula for [at least] why there are 10 apparent choices. The formula comes from the structure of rules about the nature of the structured environment. Knowledge of the formulas allows the user to create and select future choices aligned with a desired state of the system in a given environment.

A decision space is an information space, which can reduce and increase in entropy depending upon the

focused intent of inquiry, integration, and retrieval [of information].

In the reality of this physical, material system there are discoverable rules to the system; they originate from a supra-system. It is important to recall here the principles of systems to understand the relationships between subsystems and their supra-systems and how one comes to know another.

Biological cells have a very small decision space. An increase in the number of cells increases the decision space. Cells become cellular systems, and then become organisms. Cells might be given as a metaphor for individuals coming together under constraints (Read: technical reality) to produce something that is bigger than their individual selves (i.e., a community). In doing so they reflect an information system that is in the process of lowering entropy. In the process of lowering entropy the community of individuals discovers more of the nature of reality within which they exist. A larger decision space allows a user (consciousness) more freedom in interacting with its environment.

For the community to remain directionally stable [and progress], it must maintain an emergent awareness and focused intent toward a deeper inquiry into of the system of which it is a part. Similarly, for a community to remain orientationally stable it must maintain the understanding that a system involves differentiated functions that go together (i.e., cooperate) to make a whole. In the wild, species differentiate and evolve to fill different niches in their environment. Differentiation leads to the evolution of species into a biome, the ecology of cooperative interdependence that supports all the life in the biome - groups of species evolving together to become an adaptive ecosystem.

Are we not here to evolve the quality of our interaction and ourselves (i.e., our consciousness) within and through a discoverable rule-set? Let us all lower our entropy and create a coherent transformation through cooperative grouping.

Cooperative grouping means moving away from being self-centered in focused to being systems-focused; it means moving away from fear, deficit-ego, and belief into a state of appreciatively inquiring and cooperatively creating for the fulfillment of the evolving whole. This "all-focus" orientation is the defining characteristic of the emotional expression of love, of compassion, and of an "optimally efficient entanglement".

Love is every vector (unified interconnection), all those that flow out as well as all vectors of information flowing inward. Fear erodes all vectors through the erosion of trust in any vector. Without trust, cooperation is impossible. Without cooperation we all stand alone in fear. When biological cells stop cooperating and working together effectively or are invaded from the outside or invade others, we call it disease. When cells get greedy or begin building their own little non-cooperative empires within the cooperative body they often begin to consume an increasing quanta of resources, and this is called cancer - self-annihilation. Cells, another metaphor.

**INSIGHT:** *A community-type society takes choices based upon the ruleset of this factual technical reality. Regardless of what anyone may believe, everyone can only make choices within the ruleset that defines this reality. The ruleset gives the definition. Therein, "natural law" determines the consequence of action. Rules have naturally systemic consequences.*

## 4 The critical method

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*A.k.a., The trivium method of critical thinking, critical thinking, the critical approach, the systems thinking method, the analytical thinking method.*

The method described herein is known by multiple names; the two most common of which are "the trivium method" and "critical thinking". Herein, both terms are used, and they are used synonymously. The usage of one or the other of the terms is based upon its context of usage; quite often one term may be more appropriate than another. The term "clear reasoning" may also be used describe this approach. It is, effectively, an approach that clarifies our reasoning through the precision of our thought so that we may communicate more fully, and in doing so, generate a greater dynamic of synergistic fulfillment. Critical thinking involves, at the very least, fact checking, situational awareness development, methods for detecting logical errors, etc. A critical thinking space is an environment where you don't feel pressured or imposed upon when someone holds a differing opinion or disagrees with you. Herein, uncertainty, analysis, and debate are not negative; here, there is initially the state of not having knowing, and then, there is the discussing and integrating and arguing and visualizing (alone and together) to come to knowledge about what is desired and needed. The usage of this general method of thought makes someone an independent and individual thinker rather than a dependant thinker. In not relying on one's own self-organized and self-regulated thoughts a dependent thinker (usually one marked by low self-esteem) has his or her mental content filled by various other so called "authorities" without discernment and filtration for one's own highest and best interests.

**THE CRITICAL METHOD PRINCIPLE:** *Because of the nature of information (a standard for), "we" ("you" and "I") might come from totally different backgrounds, cultures and continents, but because "we" are both human, "we" possess something in common. "I" can speak to "you" on the basis of reason -- "I" can show "you" things visually as text, images, and movies, and "you" can understand. "I" can show you the documented results of tests and analyses. "I" can show "you" the steps I followed, and if "you" follow them too, then "you" will likely come to the same conclusions and results. But, if "you" don't "we" can argue about it, integrate new information, and improve the whole system.*

The method described herein is a skill, a basic skill, that an individual must learn (or acquire) in order to effectively integrate further information. It is a rudimentary skill necessary to progress intellectually. The trivium method of critical thinking and creative problem solving by its very nature is preparation for further learning and the self-validation of one's own systematic thought. Critical thinking forms critical

ideas and sharpens an analysis down to a critical path (i.e., forming critically useful information). Conceptual integration is one of the first processes a consciousness needs to know in order to know more. Unfortunately, most people in early 21st century society are unaware of the critical importance of having such a method at their disposal. Most people do not have this method as a skill to use for themselves; instead, they rely on others who they believe are following a similar process accurately and in their best interests.

Many people in early 21st century society approach critical thinking with the general attitude that they already have the ability to critically think. Most people realize that without the ability to critically think they would be unable to accurately orient themselves in the world, they could easily become victims. Without critical thinking the world cannot be understood in its totality and navigated accurately. People can easily delude themselves into believing that they have critical thinking, when there is no critical method present in their thinking.

Critical thinking is the bridge between knowledge [produced by analytical thought] and systems design [produced by synthetic thought]. And, like analytic thinking it too is a form of systematic thinking. In other words, it is a "repetitive-use tool" for discovering and processing information in the systematically mechanized manner of input > process > output.

1. **Input** = grammar - basic components; answers who, what, when, where?
2. **Processing** = logic - relation of the parts to each other; answers why?
3. **Output** = rhetoric - practical application and communication; answers how?

The trivium method is a systematic process based upon how the mind actually works. It is a mental feedback error-checking and correcting tool for new information. It facilitates consciousness in "coming to know" that the information it is working with can [with some degree of probability] be used to orient [intentionally].

This is critical thinking in non-technical jargon:

1. The foundation of all critical thinking is critical questioning (i.e., intentionally focused and actively open inquiry) by consciousness.
2. To find or otherwise discover that which is relevant through non-judgmental observation with a note to which sense did the observing.
3. To work with observations to form something that is consistent and coherent. In other words, to figure out how the discovered information works together (or doesn't work together, as the case may be).
4. To acquire a total [visual & conceptual] picture to reveal understanding and functional complexity.
5. To communicate that integrated information to other people and use it for a purpose. In other

words, translate the understanding(s) into effective and efficient [interpersonal] communication.

The following are some of the characteristic components of critical thinking:

1. Critical thinking is the ability to analyze facts, generate and organize ideas, make comparisons and identify contrasts, to draw inferences, to remove contradiction and identify opinion from facts, to evaluate arguments, and to solve problems.
2. Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analysing, synthesizing, and/or evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication, as a guide to decisioning and action.
3. It is the mark of a critical thinking mind to entertain an idea without accepting it and re-evaluate thinking in the context of new information.

*"It is the test of a first-rate intelligence is the ability to hold to opposed ideas in mind at the same time and still retain the ability to function."*  
- F. Scott Fitzgerald

The trivium method is the application of critical thinking by a consciousness to methodically gather raw, factual data into a coherent body of knowledge (grammar); then to gain understanding of that body by systematically eliminating all identifiable contradictions and noise within it (dialectic or logic); and finally, to wisely express and utilize that valid knowledge and understanding in the objective, real world (rhetoric).

Once someone is conversant with this three-fold procedural pattern, s/he is now capable of thinking "maturely", learning progressively, approaching systematically, and self-orienting (through value exchange from axiomatic thought). In other words, through the process of learning how to learn, the tool user learns how to critically and creatively think for himself or herself, and in doing so, becomes a self-directed (or, -actualized) and efficacious human being.

The ancients, post Aristotle, understood that one could not study philosophy if one did not have a foundation in the trivium. The word "trivium" comes from the same in Latin, in which it means "where three roads meet" or "the three ways". Etymologically, the term trivium is classical Latin for, "a place where three roads meet; a frequented place; public street, highway," from tri- "three" + via "road". The "roads" being a metaphor to describe: grammar; logic; and rhetoric. Evidence finds that a form of the trivium was understood by ancient Greek philosophers and practiced during Greco-Roman times. As a method the trivium is thought to have been formalized in ancient Greece. The trivium as a curriculum

was formalized in the European medieval period and nearly universally embraced by teachers in the English-speaking world until the early 20th century when it was replaced by State and corporate sponsored schooling. The trivium together with four other subjects (known as the quadrivium) form the seven liberal arts. The term 'liberal' herein means "free". The seven liberal arts were intended to facilitate the development of a free thinking individual - someone free in thought and action. In today's early 21st century society the term "liberal" has taken on an entirely different definition and it should not be confused with the concept with the same name as used herein.

The trivium, the first three of the Seven Classical Liberal Arts and Sciences (the liberating arts (or "the techne"), is both a method and a selection of content used to support the mind in learning (continuous integration), and thinking systematically, without contradiction. Science is similar to the trivium in that it too is a body of knowledge and a process. The trivium was always learned first as preparation for all further learning. Once fluent in the trivium method someone is now capable of teaching themselves with minimal guidance from an instructor or facilitator how to learn an established subject or fully grasping any propositional topic. Through the process of learning how to learn one also learns how to critically and creatively think for himself. Besides learning, the trivium method facilitates individuals in determining the reality of the real world versus that which is not of the real world, unreality. It facilitates the discernment of reality as objective existence from that which is only a creation of our minds (or someone else's mind) and not in resonance with real world reality.

To pull one thread of a paradigmatic tapestry could de-secure and potentially unravel all other threads. Remember, clarity in the integration of mental concepts and understandings is principal in systems thinking. When integration is incomplete, or worse, conflicting, then pulling one thread of a dishevelled mental paradigm could lead to the unravelling of understandings that are painful and to which their further integration necessitates the processing of fear. Fear blocks the intelligent understanding of life. Fear is the path to the anger, anger leads to anger, anger leads to hate, and hate leads to suffering.

The trivium method consists of three components that form an ordered, procedural information set: **general grammar, logic** (Aristotelian), and classical **rhetoric** [in this order], which constitutes the "integrated", Classical Trivium method - the first three of the Seven Liberal Arts and Sciences; the last four constituents are called the Quadrivium. Each of these components is also a content area of the trivium's knowledge base. When each element of the trivium method is placed in its correct order (grammar <-> logic <-> rhetoric), then the method acts as a functioning cognitive information processing system. This information processing system involves three components: 1) the procedure; 2) the contents previously integrated into the three stages; and its 3rd

component, the new information - space for conscious evaluation, a decision space. Together, this three-fold procedural pattern is applied toward a functional purpose, that of systematic and valid thinking. When visualized the method's application causes it to take the geometric from of a spiralling and emergent process that yields greater degrees of certainty and approximations of truth about the universe and ourselves as it spirals through and integrates new information. Hence, the evolution of information takes the form of a spiral structure. The emergent integration of information by consciousness takes the form of a spiral. When new data is found each component of the trivium must be rechecked for accuracy: Is the logic still correct? Is there a better way to communicate this? This is the method for critical thinking - the art of non-contradictory identification and logical integration.

This processes is essentially summed up in the definition of the term 'critical thinking'. Critical thinking is the [art of] non-contradictory identification and logical integration of information toward complex communication and creative design.

Therein, some thing's existence must first be identified prior to it being dealt with in any useful way. Critical thinking is not a functional cognitive tool unless consciousness has data to begin with; for without data one is just offering an opinion - there is no "sense" [information] in the relationship. As consciousness collects and integrates data it begins to form into patterns. And, those patterns are recorded and tested to see that they hold true. Eventually there has been sufficient testing to suggest a theoretical technical regulation. Critical thinking involves the state of being comfortable with a pattern of thinking by which consciousness may by degree dispel confusion in reality.

Any attempt to verify information via the trivium method will lead to one of three outcomes:

1. Its logically reasoned verification.
2. More information needed.
3. Its partial or full dismissal.

The application of the method ensures a critical approach that questions assumptions based upon the currently layout of an issue's grammar and logic.

When power exists in questioning then motivation exists in doubting. Someone who seeks a higher potential state of information and doubts has the motivation to remove the contradictory paradox in the information's integration, in the experience of dissonance. Philosophy begins when one learns to doubt and question; and, there is no real philosophy until the mind turns around and examines itself. What is humankind, what can it become? What is the self, where has it come from? What am I experiencing?

The 4 philosophical questions are:

1. What is?
2. How do we know what is?
3. What do we do?
4. How do we communicate it?

In the real world, "What's" have a context; they have relationships and are related. They have a record, sometimes known as metadata (discussed further in the Decision System specification). If that record is not entirely known, then the "what" may not be fully known.

Herein, critical thinking is a philosophic skill. It is a cognitive procedural tool for reducing contradiction during the integration process by which new information becomes part of the information tapestry that is the emergent and accessible truth [that informs our decision space]. When we have critical reasoning we can disagree and still share a common ground as inquiry toward greater approximations of truth through evidence and logic. Therein, when we disagree we do not suddenly become "enemies". In fact, disagreement can lead to further understanding for both.

Truth is a proposition in correspondence with objective, factual reality (i.e., a conceptual statement with no innate disagreements). Therein, facts are an objective standard of truth. If someone is being rational, then everything is a refinement to the truth; but one could still be wrong if the logical paradigm that one is using is refining information to something other than the truth (e.g., garbage in, garbage out).

The critical method is an orientation mechanism. The more accurate information someone has the more accurately they can align their decisions with a desirable and fulfilling direction. It is a tool among intelligent beings who desire to communicate in a clear and cogent manner. Wherein, it reduces the likelihood of becoming infected with falsehoods and arriving at decisions based on inaccurate information. The method involves a form of information verification (i.e., logical reasoning) prior to communication and decision making, which limits the infection of those downstream with paradoxical and polarized thinking.

It is wise to take care to know exactly what is being stored and processed in mind. To be mindful about just what memories we're encoding and how they were encoded. Everything in the mind has the potential to influence how thought occurs and is processed. The encoding of memories has a profound effect upon one's thinking and behavior. When they are encoded they are encoded with a resonant [emotional] structure, which is reflective in some manner of the structure of its environmental trigger. Hence, mindfulness is the presence of mind to resist distractions and understand whatever is going on at any particular point in time. Fundamentally, ideas have consequences [behavioral and at a systems level] when put into practice, when "encoded".

To use a computer analogy, the dissemination of false information is akin to the spreading of a virus, a mental virus (a "meme"), which is unhelpful in a

community. A meme is the idea of the transference of cultural information [packets] which are not opened and critically examined (i.e., a mental virus). These abstracted mental programs (or mental viruses) disrupt the clear transfer of inputs. The lack of antivirus software on someone's computer leads to a greater likelihood of infection downstream, particularly when passing through more "conflicted" networks. Viruses clog the ability of a processing system to function at its most brilliant potential. Mental viruses integrate themselves into someone's perceptual awareness and create an increasingly fragmented and otherwise distorted artificial overlay on top of a truthful [source] reality. The method acts as a mental anti-virus, wherein the user looks for truth regardless of prior beliefs, opinions, and understandings. Truth becomes the ultimate search. Critical thinking reduces susceptibility to irrational attempts at persuasion. Yet, when intellectual self-defense is turned down and emotion and fear are turned up then ideas are more easily inserted into someone's cognition. In other words, without tools individuals may be easily turned into fools. We should all know how to recognize lies if we are all to become self-reliant, together.

Lies are like viruses. They can spread quickly and far, even without awareness of the individuals infected by them. Everyone can spread disinformation and lies unconsciously if they do not make the effort to question, engage their critical thinking abilities, and network with others to gain greater objectivity. And, deprogramming oneself from the conditioning and lies of official culture (that most people aren't even aware of being lies) is challenging, but rewarding work.

As a whole the trivium method can be habituated such that it is continuously running in the background, like a systems integrated antivirus program. Therein it would reduce the contradictions that one personally holds in their mental model ("defragging" ones mind) or that are presented in a communicated statement itself. Its continuous application builds discerned, active inquiry as well as mental acuity.

There are two general categories of bad information:

1. **Dis-information** - is an active lie or deception.
2. **Mis-information** - is when an interlocutor is sincere, but is passing on information that is wrong, though not necessarily a lie.

There are three general categories of error:

1. **Relevancy** - is the error relevant? Does it have relevance to the argument?
2. **Presumption and presupposition** - is the error presumptuous? People add things to an argument that are not necessarily true or verifiable?
3. **Ambiguity** - is the error ambiguous? Does it leave the person who is the recipient of the argument

with questions about what is actually said, or is there maybe a deliberate strategy of being unclear ongoing? And, is there honest integrity in the relationship so that uncertainties are transparent?

When individuals in mass are forced into a [schooling] system that disconnects their intellectual immune system (their intellectual self-defense), then the community naturally becomes incoherent. Volition, someone's decision making process, someone's choice, someone's free will is dependent upon a method to dispel confusion, a "mental immune system" or "ironic monitoring system". When the system is active and accurately informed their exists the potential for genuine self-esteem and self-reliance; the creation of a state of true self-direction. Therein, one can be reliant on oneself and others in the community to facilitate in the fulfillment of all common needs.

It can be unhealthy when people don't have a method to fill holes in their cognition. It can lead to some malicious person coming along with a pre-packaged explanation and saying, "here, rest easy, I am your leader and shall fill your hole with this knowledge ... but don't open it." Outsourcing your thoughts will not lead to your alignment with a higher potential. To really understand and think and move forward confidently with a better understanding and a bigger picture requires self-directed effort. It is unwise to accept pre-packaged grammar (or prescribed grammar) without investigation. The package is highly like to contain false and misleading grammar. Knowledge is not acquired by individuals through the acceptance of pre-packaged "gifts" given by an authority (i.e., knowledge is not acquired through schooling). Always question authority -- that means both the institutions and individuals that set themselves up to provide dictation and advice. It is unwise to be overly impressed by the status of any institution. Fundamentally, "your" self-confidence doesn't have to come from a group or from authority, it can come from having a method to handle uncertainty for oneself, which takes self-reflection on one's own beliefs, values, and knowings. Herein, reflection turns experience into insight and wisdom.

When corrective, philosophic thinking is absent then individuals are more likely to be "taken advantage of" by stimulus and response. Its absence can quite easily and subtly turn an otherwise free individual into an intellectual servant. And, there may be some unlearning (dissonance processing) necessary to recover ones individual self. There is competence and respect in being able to appropriately validate one's own thinking as well as the thinking and ideologies of others. There exists the experience of empowerment in being capable of orienting one's own body and mind in the world through rational thought applied in a systematic manner.

For the individual the trivium represents a methodical pattern-of-thought (a thought process) for thinking effectively. It does not direct the thinker "what" to think. Instead, it represent a system organization that creates

an ever-improving map, which corresponds to the terrain, and is always improving itself; for the purposes of survival and life fulfillment.

The critical method has been obfuscated, suppressed, and taken out of most of modern education systems, where people are not taught "how" to think but "what" to think - they are programmatically conditioned.

Removing and withholding this tool leads to the ability of the few to control a collective [of their followers]. Taking critical thinking away leads to the removal of a very important connection, the idea that the language we use and the concepts we think about relate in a very real way to the natural world with a discoverable organization - that there exists a real world reality. It takes the meaning out of words and how words relate to these categories, these signature referents that exist in reality. It is a very simple idea that the nouns and words we use actually relate to tangible, physical reality; whereupon, a critical path can be navigated around obstacles as we emerge into a greater knowing and greater fulfillment. Inquiries become less about how our lives align with a tangible and dynamic reality, and more about how "you" mold tangible reality to get what "you" want out of it entirely de-contextualized. Therein, authorities come in and begin to guide someone's experience and direct the path of their attention. They prescribe your rights; they say what reality should or should not be; and they begin setting up bureaucracies to obfuscate the abstractions that feed their collective.

The mind has a limit on processing power; it can readily be overwhelmed, confused and distracted if a method for dispelling confusion and finding reality is not continuously applied. The absence of such a method opens the door for external control and influence over the individual making social engineering easier. Moreover by curtailing the individual's ability to comprehend, integrate, and actively communicate what they have learned we are being cut off from reality (as knowledge of ourselves and our environment).

The truth doesn't change only because authority wants a different "truth" to be told. The truth can be observed and sensed and verified. Nouns relate to the substances of experience, adjectives relate to aspects or qualities, and prepositions [in part] involve types of relationships. Categories relate to real things that we experience, or have the potential to experience. Yet, thinking categorically (i.e., thinking from the perspective of a divided or divisional category) is not sufficient for understanding and for the design of fulfilling creation. One must also integrate the whole information space (i.e., think systematically). In community, it is necessary to think through the emergence of a system as well as think through the categorization of the elements of a system. Herein, critical thinking involves the challenging of categorizations, assumptions, and abstractions. Aristotle facilitated humanity's understanding that it is possible can create conceptual categories, "syllogisms", of things in reality. And in community, we add the design question, "What is possible?"

It is not necessarily so, that because "you" have been thinking for years, that just naturally over time "your" thinking has improved - it is not necessarily so. The fact that "you" are thinking alone will not make "you" better at thinking systematically. It only may makes you better at the type of thinking you are doing. The Two finger typist will over time become more refined at two finger typing, but that will not make the typist a structurally more efficient (or better) typist. So, if "you" are a poor thinker and "you" practice poor thinking a lot "you" will likely become an excellent poor thinker.

An example of poor thinking might be the failure to accept and appreciate criticism. In community it is important for us to admit that we may have made an error; herein, criticism becomes the antidote to error. And, if a society wants to become good at anything then criticism is valued. Today, science has become reasonably good at the reciprocal approach to criticism. In science, we do not kill or maim those who criticise. The ultimate critic is objective reality who says, "no, it sounds really good, but you are wrong." If we fear criticism or interpret criticism as "negative", transposing self-criticism for the notion of "can't afford a negative thought," then we lose out on the opportunity to grow by identifying and learning from our mistakes, which is the "theme" in a fulfillment-oriented society.

When we realize that we can know things and that we can install better thinking tools to know things more accurately, then our confidence has truly begun to rebuild itself. Learning to think is like learning to walk, and once you are proficient at it then you can "hike through" a conversation with another proficient learner.

## 4.1 The three stages of the trivium method

**INSIGHT:** *If we choose to ignore principles that are based upon truth, and therefore, ultimately ignore truth, then we are likely to enter a chaotic existence (a higher entropic state) where self-inflicted suffering becomes our perpetual manifestation.*

The Trivium method (or process) contains three stages (or steps). Those three stages in order are:

1. **Grammar** (knowledge of that which exists) - Answers the question of Who, What, Where and When of a subject. Defining what is to be modelled and stating knowledge.
2. **Logic** (understanding of the interrelationships of that which exists) - Answers the Why of a subject. Logic is the language of coherent connection and clarified relationships.
3. **Rhetoric** (communication of grammar and logic) - Provides the How of a subject.

The trivium is the identification of a method to reduce contradiction that may also reduce fear.

### 4.1.1 The grammar stage

There are two separate concepts that compose the grammar stage of the trivium: special grammar and general grammar. The purpose of the grammar stage is to move from perceptual information to conceptual information without introducing or integrating contradiction. Herein, grammar refers to a ledger of knowledge (i.e., a database of knowledge).

#### 4.1.1.1 Special grammar

Special grammar refers to the rules developed and applied to the ordering of words/concepts for verbal expression and communication in the form of a sentence; it refers to linguistics and the rules of a particular language. To connect conceptual points, or words, there must exist rules. Those rules are called special grammar. And, when both words and grammar exist, then language exists. In other words, special grammar is the grammar of languages - English and Russian grammar being two examples. Special grammar is grammar in the commonly discussed sense, as conceived of by Steen (2007), and encompasses all components that are needed for a full description of a language, such as its lexicon, phonology, morphology, syntax, semantics, and pragmatics (i.e. coded pragmatic functions such as elocutionary potential, honorifics, etc.). Special grammar is not a stage of the trivium method per say. Instead, it is a component of the body of content that makes up the grammar domain.

#### 4.1.1.2 General grammar

**INSIGHT:** *It is unwise to accept and discontinuously integrate erroneous definitions.*

General grammar is the first stage of the trivium method and it concerns the facts of objective reality, regardless of language, which apply to all systems of their kind as the first set of building blocks to an integrated, fully interrelated, and objective body of knowledge (e.g., nouns). To understand nature it is important to first inquire into nature. The grammar stage of the trivium method involves the discovery as well as relational, discursive and sequential organization of factual data into a coherent and systematic body of knowledge. The grammar stage is limited by the information available to our common senses and technological instruments. Essentially, the product of science and the scientific method is 'general grammar'. General grammar is the equivalent of data and may not be in-formation.

The philosophical art of general grammar lies in definition. Things that exist in reality have specific differentiating factors. These factors can be defined and grouped by their unique attributes (i.e., their characteristics and structures) into a universal concept, which carries a definition. In other words, things that exist in reality have unique characteristics that can be differentiated from other information by grouping and universal conceptualization (like "tree" or "molecule").

Simply, through universal conceptualization of information contained in perception, consciousness can come to understand the existence in which it is enmeshed.

The English verb "define" comes from the Latin word "*définire*", which means "to put a limit on, determine, explain" (from *de-* ["completely"] and *finis* ["boundary, end"]). Essentially, the process of defining is the process of delineation. Hence, for us to discuss something or have a philosophical argument, then we have to put a limit or place boundaries around a concept so that we aren't getting lost in what we are trying to describe and communicate and integrate.

Voltaire once said, "If you wish to converse with me define your terms." How many a debate would have been deflated into a paragraph if the disputants had dared to define their terms. Philosophy provides a way of defining. In philosophy, the 'essence' of something is that which makes it unique, and the 'universals' are the commonalities. Once universals are discovered/created, then statements, arguments, and questions can be generated. Through questions, scientific tests can be run, and then, stated conclusions can be drawn [through logical argument].

As embodied consciousness, we can use our senses to take in experience and abstract from it. The etymological root of the word "abstract" means to "take apart". So, for example, we can observe a color to grass. Abstracting the essence (or, one of the [structural] properties) of the thing we are observing and putting them together in uniquely meaningful ways is the foundation of art and creativity. We have an almost infinite ability to abstract, to take things apart, and put them together in different ways. This is where our creative freedom lies.

Here, Korzybski's theory of "general semantics" has several important things to say on the topic of abstraction:

1. Mathematics should be used to describe physical events where possible.
2. Avoid identification of word with a thing.  
Experiencing the things behind the name (will help us more greatly come to understand the world we live in).
3. Higher order abstractions should be used cautiously and consciously, and it is important to know what level of abstraction they are on.
4. Use visualization to show structural similarity and clear up what level of abstraction someone is on.
5. General semantics adds two additional points:
  - A. Education is about experience and self-verification; and
  - B. Delay conclusions until all the facts and experiences possible to arrive at a conclusion.

But, in order to put things together in useful ways we must first have accurate data.

General grammar answers the question of Who, What, Where, and the When of a subject. It consists of discovering and ordering the facts of reality that comprise basic, systematic knowledge of the total real world information system. In other words, the purpose of general grammar is to identify, gather, and systematically arrange raw, factual data of a similar nature into a specific body of knowledge. Thus, this stage works through primary first-order knowledge of a subject. Knowledge represents the first stage of conscious understanding after contradictions and fallacies have been processed out of incoming [sensory] information.

When individuals look out at the world they observe things that are identifiable, they observe "nouns"; no two of which in the existent world are in a state of contradiction. There are no contradictions in nature, only in the minds of individuals. A recognized contradiction is either a lie or an error. A thing cannot be itself and something else at the same time and space.

Existence is every substance, action, attribute, and relationship that is, was, and ever will be expressed grammatically. In other words, existence is every noun, verb, adjective, adverb and prepositional phrase that ever is, was, or ever will be (three dimensions of a temporal system: past; present - now; future). These are the categorematic words of consciousness (i.e. words that are capable of standing alone as the subject or predicate of a logical proposition).

Essentially, general grammar consists of objective reality organized into the parts of speech [of a language]. The parts of speech may be divided into:

1. **Concepts of existence** (categories and categorematic concepts that stand by themselves; they have a referent in reality; they are "parts of speech"):
  - A. **Noun** - a substance, object, "thing"; objects have different forms, attributes, and states; the "things" that make up reality.
  - B. **Verb** - an action, process or state of being of an object.
  - C. **Adjective** - a noun modifier provides an attribute of a noun.
  - D. **Adverb** - a verb modifier that provides an attribute of an action or state or being.
  - E. **Preposition** (full expression of a relationship).
  - F. **Symbolic measurement** - numbers; the identification of differences between things that exist, usually placed along a spectrum.
2. **Syncategorematic concepts** -conceptual words that facilitate, streamline, and economize thought:
  - A. **Conjunctions** - usually coordinate independent clauses (e.g., and, for, so, yet).
  - B. **Articles** - usually a special case introduction to a noun, introducing whether the noun is particular (definite) or general (indefinite); in order to clarify what is in our mind we look at

general signatures (or pictures) and special pictures, we look at universals and particulars (e.g., the .. , a .. , an ..).

**C. Exclamatory interjections** - a word that extends a complete thought; followed by an exclamation point; the only words that stand by themselves as a complete thought or sentence.

To an inquiring consciousness, there are:

1. Things that consciousness can experience the existence of (e.g., objects).
2. Things that describe what exist (e.g., words).
3. Things that relate what exist (e.g., concepts).

There must exist agreement on grammar (both special and general) between communicating individuals otherwise it is impossible for there to exist any form of logic between individuals. Communication about the existence of objects comes after individuated consciousness has identified and verified an existent relationship for itself. A coherent communication system involves a much larger system that seeks to facilitate individuated consciousness in experientially verifying the truth of existence for itself, and in so doing it generates resonant realities. Some resonant realities are more "in-tune" with existence than others, and hence, involve more coherent communication between individuated forms of consciousness ... for they are "realizing" (resolving or rendering) greater unity.

Discussions that involve logic and understanding cannot move forward until both special and general grammar are defined and clarified between all participating parties, otherwise inherent (or intrinsic) confusion will exist as a property of the relationship. It is important to note that agreement on grammar need only exist during actual communication and that after its conclusion the communicating parties may revert back to their own individual grammar if that is their choice.

It is not "absolutist" to define your terms of language or general linguistic premises, it is a necessity for clear thought and communication. Engineers do not design lasting and safe structures out of confusion and contradiction, and critical thinkers do not develop accurate thinking skills, rational mental models, and coherent behavioral patterns out of confusion and contradiction. Definitions must be stated in advance of any communication, or accurate communication is unlikely to result - consciousness must synchronize and acknowledge communication (Read: SYN-ACK) between individuals to remain in information coherence [in a dynamic, material environment]. This is particularly important when morality is being asserted.

**INSIGHT:** *The beginning of wisdom is the definition of terms. Definition - from all of the possible "you" are explaining what something actually is de-finiting, and not in-finiting.*

#### 4.1.2 The logic stage

**NOTE:** Logic derives greater understanding by removing inconsistencies and contradictions.

Logic is the process of thinking correctly and without contradiction, the art of logical integration and interaction. Logic answers the "why" of a subject through the reasoning of existence of non-contradictory relationships, which reveals a more systematic understanding of the subject under examination and in question. Whereas science depends on logic, and logic depends upon non-contradiction. Logic is essentially a tool used in many disciplines including philosophy, mathematics, and science. Therein, logic may be defined as the science of non-contradictory reasoning [by itself]. Science uses logic as a tool and is unable to function without it. In science, logic involves the discovery of order - a natural ordering function. And, logic is empty without science to check its premises. Logic is a part of science, of mathematics, and of philosophy, and it is ineffective and counterproductive to separate them (i.e., to separate logic from inquiry into that which is). The purpose of the logic stage is to more coherently relate identified conceptions, to self-check [for errors].

After a body-of-knowledge is gathered (through scientific inquiry) and properly arranged through general grammar, a truthful understanding of the topic or proposition is sought. When all of the stated contradictions have been removed from the proposition by subjecting it to logic (this work is called "a proof"), the proposition is said to be understood. When all of the relationships within the proposition are in concurrence and there remain no contradictions, then all of the statements within the proposition are related critical facts.

The methodical application of logic facilitates the alignment of subjective perception and personal understanding with objective reality.

The use of logic shifts the focus from mere facts to the understanding of relationships, which are discoverable and probabilistically assessable. Wherein, reason takes precedence in identifying critical assumptions, contradictions, logical fallacies and other inconsistencies. Logic facilitates consciousness in checking the accuracy of its grammar and minimizing the misinterpretation of incoming data [in its integration of sensory experience].

An individual consciousness makes contact with reality through its senses (i.e., bodily sense organs) - its "instruments of knowledge". Senses do not necessarily provide false information, it is instead consciousness' [mis]interpretation of the data that generates misleading and false information. The human mind can be affected by illness, by injury, and by illusions and belief to name just a few compounding factors. Sometimes sense data becomes distorted, and hence, consciousness requires a systematic way of looking at its own distortions (Read: contradictions) - logic in particular, and the trivium method in general provides for that.

Another word for the process of logic described herein is that of "dialectic". A dialectic is a method of argument or exposition that systematically weighs contradictory facts or ideas with a view to the resolution of their real or apparent contradictions - in order to ensure that one follows from the other - in order to generate a mental state of lower entropy (less confusion and chaos). It is the process of conducting an internal or external dialogue to reduce contradictions. It is the process of removing contradiction so that one thing follows from the other, which doesn't mean that it was necessarily caused by the other (Read: post hoc, ergo, proctor hoc).

The three critical laws of logic are:

1. **The law of identity** - that which occurs or has occurred can be individually identified to exist. It is possible to identify one object of many objects with a unique identity.
2. **The law of non-contradiction** - There exists discoverable information about the real world, such that contradictory statement about the real-world cannot both be true (accurate, factual) and false (inaccurate, unverified). A statement cannot be both true and false at the same time and in the same context; there are not contradictions or paradoxes in the real world. This principle forms the basis of logical consistency and coherence.
3. **The law of excluded middle (the bivalence principle)** - There exists discoverable information about the real world, such that a statement about the real world is either true (accurate, factual) or its negation is true (accurate, factual). A proposition must be either true or false, with no middle or third option. This principle is a fundamental principle in classical logic. This principle forms the basis of objective logic.
4. **The law of causality** - For all motion, there is some real-world cause. Every effect has a preceding cause or set of causes that brought it into existence.

A **fallacy** (i.e., logical fallacy) is an unreasonable argument or a mistake in argument involving incorrect or illogical reasoning, which are often employed for purposes of manipulation. A fallacy is an error (or manipulation) in reasoning in which the premises given for the conclusion do not provide the needed degree of support. Arguments are subject to a variety of fallacies. Having explicit knowledge of logic and the fallacies enables the identification of the exact type contradiction or falsehood in a circulating argument. There currently exist a known collection of logical fallacies and the number of logical fallacies may never be complete because there may always be more ways knowable to propagate falsehood and to generate contradiction.

Fallacies are, in part, incorrect methods of logically thinking. Fallacies are seen as negative in logic because they represent errors or flaws in reasoning.

Possible failures of argumentative thinking include, but are not limited to:

1. Argument from tradition - "etymology shows the truth" (i.e., assuming ancestors knew more than they did).
2. Argument from democracy - if 50% + 1 person in a population thinks it is true, then it is true.
3. Argument from authority - an "expert" said, a "study" said (while assuming "expert" conveys perfect knowledge and assuming "studying" conveys capability).

Fallacious information can be intentional and unintentional. Notice that the root cause of unintentional fallacies is not starting from a recognized axiom and structuring factual data into greater knowledge, understanding, and wisdom. Additionally, it is unwise to assume that all possible ways of erring in reasoning have already been discovered, identified and understood. It seems that such an assumption would itself constitute a fallacy.

Fallacies are a red flag, but they are not necessarily the whole picture. Understanding the fallacies provides us with a nice warning or alarm system. The notification of a fallacy means that there is more investigation required in order to come to a valid and true conclusion. If the statement is in the form of a fallacy it doesn't mean that the statement is false. Perceptions develop into concepts, which are formed into propositions, which are then tested for validity. Herein, the definition of a thing is ultimately where truth resides, for a proposition is either true or false - what something is and not otherwise.

Language can be used to manipulate and plunder the self-worth and fulfillment of individuals. Language can be used to reveal and it can be used to conceal. Language contains logic if it is there to educate and it contains fallacies if applied to deceive.

The presentation of a contradiction to a discerning consciousness will likely generate an uneasy emotion in that consciousness, which must be "processed through". When contradictory information is integrated without coherent processing it will generate a static "traumatic / dramatic" emotion in the continuous rendering of consciousness. When contradictions are "given" to anyone (i.e., accepted and integrated without question), then they can significantly inhibit further critical thinking and potentially create a semi-permanent state of cognitive dissonance. It is essential for a consciousness that desires fulfillment to remove the contradiction from that which it is presented prior to integration into a working (Read: decisioning) information space.

When someone knows how the manipulation works it reduces or eliminates its effectiveness. In other words,

if someone can identify the specific fallacies being conveyed in manipulative statements, then they are less likely to succumb to the agenda of the manipulator. This is particularly true of those who have to some extent or another "inoculated" themselves against advertising and marketing, which in principle involves the fallacious manipulation of information to turn an "audience" into "consumers" of a desired business' product. It is important for one's very mental health to question declarative statements. Note here that there can be a double manipulation occurring. In other words, when someone experiences and notices manipulated information, that person may become more hardened in their original view because of the noticing of the manipulated information, which could be the manipulators original intent. In other words, the manipulator manipulates the information, the receiver notices the manipulation, the receiver then becomes more hardened in their view because of the noticing the manipulated information, which all along was the original intent of the manipulator (i.e., to harden the bias/view of the manipulated by putting out information that the manipulated would notice as being manipulated).

*"The first principle [of effective reasoning] is that you must not fool yourself and you are the easiest person to fool."*

- Richard Feynman

When you can look at an advertisement and see how the advertisement is attempting to manipulate you, it is helpful; it helps to reduce the effectiveness [of the manipulation tactic from pre-programmatically structuring the next iteration of your conscious state]. It is like watching a magician and knowing how the trick works. It just doesn't have the same effect anymore. But, some magicians are so good that when you are watching them, and even though you know what they are doing, it is still convincing (i.e., the advertisement is still insidiously influential). For instance, some advertisements are conducted like an informative and friendly interview. They are designed to appeal to someone's sense of "being informed", and therein, the sponsor's agenda slips into the observers mind through their fabricated feelings of self-development and resonance with the situation. And, make no mistake with years of scientific research into human manipulation behind them some advertisements are that good. We realize that all ads are all a form of propaganda. The purpose of advertising is to increase product sales. Advertising is paid propaganda no matter how it appears in its final form. It is possible to have contrived associations in "our" minds that are put there by competing entities entirely for their own benefit and for profit. Fundamentally, through advertising and marketing, people are looked upon as prey for a sale and salary.

Advertisements are paid for, in order to:

1. Cause people to remember a product (and think about it in future purchases).
2. Cause people to feel good about a product (engineering positive psychological responses to the products).
3. Familiarize and/or make people more comfortable with a product, idea or attitude.

Even when you are aware that you are being advertised to there may still be pervasive effects that slip in. And, if you ever catch yourself subconsciously repeating a marketing phrase or vision / image, then stop for a moment and realize that what you are experiencing is the effect of: experiencing advertising. The subconscious repetition of a market entity's message reinforces the message. Repetition can do incredibly useful and malignant things.

Marketing can be masked as news, scientific research, and it can be so subtle that it feels like "entertainment". Advertising doesn't just reflect a culture (as industry purports), it affects and normalizes attitudes, values, and behaviors (including unconscious behaviors).

From retail surveillance (gaining intelligence on "the customer") to scientific studies into addiction and human manipulation, there is an entire industry dedicated to making goods and services, foods in particular, more and more addictive and flavourful so that you will want more and more and buy more and more. That is the business of advertising and marketing. Chocolate chip intelligence is the level of intelligence in most of early 21st century society. The food industry is wrapping its crap in increasingly "green" and "soylent" looking packaging. Their business is to sell their products, never forget that. Advertising can build in false associations from early childhood, shifting and shaping perceptions, which then become maintained at the socio-economic, cultural-level. The business statements you see around you are a highly orchestrated and choreographed marketing extravaganza designed to encourage you to make purchasing choices that are most profitable for the store and their vendors - that's the business. When you see the wizard behind the curtain you are able to make different choices. And, it is also important to realize that we are hardwired to be vulnerable to some tactics, even when we are aware of them.

Common fallacies are categorized by their type, such as Ad Hominem (personal attack), and appeals to authority, belief, fear, ridicule, tradition, etc.

The word fallacy comes from Latin, wherein it means a trick, deceit, or lie. Yet, contradictions are either errors or lies. The ability to identify logical fallacies in the statements and arguments of others, and to avoid them in one's own is both valuable and assists in the discovery of truth, a reduction in error, and the inhibited spread of lies. If one can identify the fallacies one can start to identify the manipulation (intentional or otherwise). Here, we need to understand deception and historical biases so that we may come to understand some of those things that are limiting us.

The logical fallacies are a means of evaluating

information for contradiction. Fallacies are sometimes known as "conclusion loops" in that there is no basis for proof of the argument because the premise and conclusion of the argument loop into each other (i.e., represent a contradiction). Knowing the logical fallacies is like taking the red pill in the matrix and revealing the relationships that are known up to now to compose reality in a non-contradictory, and hence, non-paradoxical manner.

**Logic** is a way of tracing an argument or opinion or belief or relationship. It is a tool used by a critical mind in discerning where the argument begins (inputs), where it goes (processes), and where it concludes (outputs), how reliable or valid it is (feedback), and how it is applied to other incoming information for new creation (engineering). Logic is a system of reasoning, which in a virtual information system involves the encoding and decoding of the virtual information experience. Reason does more than go from premise to conclusion, it provides the potential for synchronization with some aspect of the real [world reality].

Logic is a [conceptually constructed] tool, a "construction". Logic is applied relative to a paradigmatic system of thought. In a social environment logic becomes the agreement among people to have a common denominator in the integration of new information and new relationships. It is the way to objective truth in our shared world. Yet, the internal logic of some structures is quite unhelpful in producing understanding. And still, it can ground objectivity reality in the inquiry into understanding and valid knowledge. It does not, however, give a person knowledge of absolute or divine truth, or give any satisfactory meaning and purpose to one's life. Logic is only a tool for discerning a closer approximation of truth.

The process of integration [by consciousness] cannot be feasibly deferred to someone else, to an "authority" -- if so, then it is not true integration, it is not learning.

Having knowledge and understanding of the world around us through the removal of the contradictions in our thoughts so that they're "not dissonant", focusable, "intellectually pure", reasonable, and rational is at the very least going to lead to less conflict in a community. Without logic applied systematically unreasonable, irrational, illogical, and contradiction-driven ideas may be the very things that give us the problems we face: greed, war, usury, slavery, injustice, etc., - all based in the irrational and illogical thoughts of those who wish to dominate others in the sole observance of the achievement of their needs over those common to all. Behaving in this manner is an indication that they do not recognize personal fulfillment reciprocally connected to social fulfillment as a logically existent relationship.

Someone who places logic before grammar might say, "Don't confuse me with facts, I have already made up my mind." False conclusions are reached when individuals go straight to why without first collecting data and asking who, what, when, and where. When someone puts their logic before their grammar they shut off the totality of

their thinking process.

Individuals need the ability to connect to information (e.g., the senses; science), but we also need mechanics. Mechanics allows for intellectual integration and intellectual self-defense through the method of information processing known as critical thinking. The process (or mechanics) involves the identification and sorting of new information, the accurate integrate the new information, and then the new information model's optimal application and communication. This functional process may be metaphorically referred to as a "navigation tool", similar in function to a compass and gyroscope; mechanics are things that may help to keep one balanced and focused and adaptive to one's material and conceptual surroundings. To have this method is to have the freedom to continue the learning process [without or with reduced deceitful interference].

Thinking is the act of processing perceptions and applying logic to ensure one's conscious awareness remains in sync with that which exists. The inability to process our perceptions of reality into knowledge, understanding, and wisdom continues to cause many of the problems present in early 21st century society.

All humans have common sensory abilities (unless someone has a some severe disability). These senses are how we interface our mind with matter. We use language to connect through and between matter. The question then becomes, is your mind in synchronization with reality? If you bump into someone who is irrational, they might be dangerous to your mental health. If you bump into someone who is physically violent, they might be dangerous to your physical health. People who do not use logic, or further, those who deny that they use logic -- they can be irrational and dangerous. They carry mental viruses that it is wise to protect oneself from.

**NOTE:** Dissonance (conflict) in perception can lead to greater understanding if thinking is fluid (not stuck, static, or stagnantly skeptical).

#### 4.1.3 The rhetoric stage

**INSIGHT:** Observation, identification, organization, communication, and feedback are the individual steps through which individuals may come to learn, to decide, and to make useful tools.

Grammar and logic are now integrated into *explanation*, *communication*, and *application*. This is also the stage in which new questions are asked of phenomena. Rhetoric is the *How* of a subject. A rhetor will ask, "How is the grammar and understanding of a subject best communicated and applied?" Holistic concepts, such as "best" and "optimal", are a critical component of coherency. They represent the most holistic form of consistency.

Inherent in the rhetoric stage is the proper choice of means and methods for cogently expressing the conclusions of the grammar and logic of a subject. Once

a body of knowledge has been grammatically arranged and a logical conclusion has been made from that arrangement, the choice of how best to communicate the conclusion to others must be considered, and in the process, the subject being examined usually comes into an even sharper focus to the rhetor. In part, rhetoric is the art of selecting the best means of communication from a set of known principles about coherent communication - wisdom in the communication of logical findings - context in communication (communication as a full-dimensional thought structure). After a body of knowledge has been grammatically arranged and a logical conclusion has been arrived at from that arrangement we come to a point where we have to make choices about the best way to communicate the integrated understandings to other individuals. In this process the presenter, the thinker, can gain an even better understanding of the subject matter through a thoughtful presentation, while reinforcing desired neural pathways. A comprehensive perspective is achieved during this stage - thus the truism, "you don't know it until you can explain it".

In the rhetoric stage conclusions that had been derived into *statements of rationale* [in the logic stage] become a set of instructions deduced from the rationale for the purpose of application and encoding (of those conclusions) in the real world. These formalized instructions are sometimes known as *statements of protocol*.

It can be all too easy to forget in one's communication with another being that there exists an essential sameness in the experience. Hence, for rhetoric (i.e., communication and action) to remain in valid alignment with existence it cannot become abstracted from compassion. In all communities there exists usefulness in 'compassionate communication', whose absence prevents constructive action. It is interesting that the global schooling system does not teach individuals the essence of communicating and how to really share themselves, clarify truth, and get their needs met, when it has much more to do with all forms of success in life on all levels than anything else that could be taught. This approach involves the fulfillment of needs for reasons that one won't regret later.

Rhetoric is another word for wisdom, it is systematically usable knowledge and understanding together, and it allows for value re-orientation. The trivium method is an open systems process, it is continuously repeated for purposes of clarity in orientation over time. If it is knowledge and understanding that someone cannot use in the real world, then it is not wisdom.

Humankind can apply the concept of ratio, which is the root of rational thought. By perceiving ratios in nature an individual can design an item in mind, and if it is valid and true, in accordance with that which is, s/he can produce that in material form (reification), s/he can create the ratio in material structure.

The art of rhetoric originates in ancient Greece where it was generally defined as the art of persuasion. There was an early Greek emphasis on rhetoric, and a

misconception that a good speaker essentially had to be a good person. At the time few people asked, "How could someone who was so convincing and so persuasive, so eloquent, possibly be less than forthright in other ways?" Certainly, that misconception carries right up to the present day, where it still matters little what a "professional public speaker" is, as long as it sounds and looks good to the audience. As long as they build this crescendo that leads to people erupting into applause. People without the ability to respond with deep thought may potentially react in applause without deep thought.

The Greek word for wisdom is "sophía"; from which the term "sophistry" and "the sophists" originate. Sophistry is persuasively sophisticated rhetoric through plausible, but fallacious argumentation, not wisdom nor the idea of rhetoric conveyed herein. The sophists were a group of traveling teachers who would go around supposedly instilling wisdom (they were professional public speakers), but all they were really good at was sophisticated rhetoric - winning the argument through the confused contortion of logic, or the application of logic for which the audience is already attached and comfortable. And, if "you" paid them enough, they would reach any conclusions "you" like; kind of like lawyers and politicians in early 21st century society. Logic might have been complementary to the process and discipline of sophisticated rhetoric, but it wasn't until Plato and Aristotle that logic and rhetoric became intertwined in an important way.

One of the first thinkers that tried to provide some distinction between philosophy and sophism was a man named Isocrates. Isocrates wrote a piece called, "Against the Sophists" where he elaborated upon several criticisms that he had of what the sophists were doing. In "against the sophists" Isocrates claims that these people are essentially charlatans who were making promises upon which they could not deliver -- they claim to be much wiser than they actually were. Isocrates questions why they would demand payment up front if they were so wise and confident in their ability to teach virtue and justice. He asks why they would not simply take payment in one sum at the end. Isocrates points out that it is far easier to teach a person a few strategies of rhetorical trickery than it is teach the real, solid rules for filtering through to a greater approximation of truth and the communication of that truth through clear visual language.

Plato lived at approximately the same time as Isocrates, and he introduces the idea that if the goal of such teachings were truth and not just trickery, then rhetoric cannot exist independent of logic. It is also Plato who says that the sophists are just people who are telling others what they want to hear or saying to others things that sound impressive, but are not advancing knowledge in students or audiences, and in many cases, may be working against real knowledge, understanding, and wisdom - at worst providing a kind of counterfeit wisdom. Later, Aristotle reinforces Plato's idea essentially saying that true rhetoric is the counterpart of dialectic (i.e., logic)

-- the two must go together. Aristotle communicates this through what he referred to as the three appeals, as foundational requirements for persuasion: logos (rational); pathos (emotional); and ethos (ethical). If rhetoric is to have any practical use in life, then it must result from logical conclusions. The emotional and the ethical are the other two appeals to persuasion. Aristotle acknowledged that part of persuasion was being able to reach people on an emotional level where-after ethics becomes salient.

Instead of Plato's conception of persuasion as a form of uplifting communication, persuasion can be viewed as the desire to spread bias and belief through. Therein, the idea of persuasion is uni-dimensional (i.e., biased), and the idea of truthful inquiry is omni-dimensional (i.e., holistic). In other words, in the negative, persuasion is the manipulation of another for one's own self-centered gain, whereas truthful inquiry does not involve persuasion on anyone's part, but is instead the process of open inquiry and active integration on everyone's part (Read: everyone participating or otherwise communicating).

A connection is a communications conduit (or channel). Whether the communication is experienced either as a resonant symphony, or, as a disordered cacophony, depends on the ability of the participants to synchronize their information systems. Individuals in a community might choose to synchronize their information systems to an objective and common reality for their mutual fulfillment.

*"The greatest obstacle to communication is the illusion that it has occurred."*  
- Harri Kallio

## 4.2 Conception

**NOTE:** *The process of schema changing [to another pre-defined schema] is known as 'assimilation'; which, in and of itself, is a morally neutral concept.*

The first unit of information is the "concept". This is basically a category that groups together items with similar characteristics or properties. These are the building blocks that are used to create structured knowledge. Concepts can represent anything identifiable, such as objects, events, abstract ideas, relationships, or activities. A concept is a fundamental category of existence. To consciousness, a concept is a meaningful connection within awarenesses. When speaking of the idea of conception it is essential to provide a definition for the word, 'definition'. A definition is a limitation placed on the extent of usage of a word.

*"What probably defines a thought more than anything else, and distinguishes it from other mental processes is that it is a construct made of concepts. For example, a small child comes across a door handle several times, until the pattern of it - its shape, its utility, its operation - is identified and the concept of a door knob is*

*ingrained in her consciousness. The power of a concept, a mental pattern, to persist in physical reality accumulates with each iteration, each imprint of that concept. A thought is then an assembly of existing concepts, a mental model of a specific fraction of reality - what is commonly referred to as a thought-form." (Zoudros, 2013)*

In contemporary philosophy, there are at least three prevailing ways to understand what a concept is:

1. Mental representations: entities that exist in the mind (mental objects).
2. Abilities peculiar to cognitive agents (mental states).
3. Abstract objects, as opposed to mental objects and states (e.g., numbers, sets and propositions).

Concepts are [identifiable] building blocks, and the mind uses them to relate and to build. Concepts are put together to create propositions, which are units of meaning expressing a single idea. Come up with a sentence, any sentence -- this is a proposition. Truthful propositions that are related and linked create a network of knowledge and information that makes up a schema (or model). A schema is basically a mental model of what a mind expects from a particular encounter. Mental models are the inner representation [that embodied consciousness maintains] about how things work in the outer world. And, they affect how individuals and societies work with information and determine decisions.

Concepts are formed and/or constructed (i.e., conceptualization occurs) when consciousness isolates two or more similar identities from the rest of one's perceptual field, and integrates them into a single mental unit (an "identity"), symbolized by a word (or other symbol), by language. Concept formation is also sometimes known as "universal abstraction" (i.e., abstracting to a universal), the most fundamental [systems-] level of which might be referred to as an 'axiom'. To consciousness, concepts serve mental [processing] needs by maximizing cognitive economy.

A concept subsumes an unlimited number of instances (past, present, and future) which are similar to it. It is an identified, universal property of a system. Useful conceptualization requires thought on the part of consciousness. Conceptualizing the different aspects of self and of reality [by consciousness] can facilitate the integration of experience into wiser decisions.

Concepts organize perceptual material and are a mental representation that share a set of signature similarities, or characteristics, with objects and experiences in reality. That is, concepts refer, and what they refer to are perceptively identifiable categories in existence. Concepts can and cannot relate to things in reality. Conceptual similarity provides the foundation from which individuals might work together in common.

The objective theory of concepts states that definition is the final step of concept-formation. We do not begin forming concepts by first defining them and then looking for units which satisfy their definitions. This would be a

reversal: what would we be defining in such a case? It would be a concept without units, which is a contradiction in terms. And what gave rise to a concept without units?

The task of a concept is to "unite things that share an essential similarity". We form concepts for a purpose - to group like things into a mental unit which is open-ended in its scope of reference and distinguished by a definition for the purpose of identifying and integrating the objects we perceive. The process begins with perceptual awareness, and through the process of 'abstraction' we advance to a new level of awareness, conceptual awareness - the level which expands our awareness beyond the perceptual level. But, we do not begin the process of forming concepts with the process of supplying definitions. This step only comes after we have isolated and integrated units to inform the concept. Only then do we have something to define. Rand (1990:40) explains:

*"A definition is a statement that identifies the nature of the units subsumed under a concept."*

*It is often said that definitions state the meaning of words. This is true, but it is not exact. A word is merely a visual-auditory symbol used to represent a concept; a word has no meaning other than that of the concept it symbolizes, and the meaning of a concept consists of its units. It is not words, but concepts that man defines—by specifying their referents.*

*The purpose of a definition is to distinguish a concept from all other concepts and thus to keep its units differentiated from all other existents.*

*Since the definition of a concept is formulated in terms of other concepts, it enables man, not only to identify and retain a concept, but also to establish the relationships, the hierarchy, the integration of all his concepts and thus the integration of his knowledge. Definitions preserve, not the chronological order in which a given man may have learned concepts, but the logical order of their hierarchical interdependence.*

*With certain significant exceptions, every concept can be defined and communicated in terms of other concepts. The exceptions are concepts referring to sensations, and metaphysical axioms."*

Here, Bahnsen Burner explains:

*"Clearly then, before we can define a concept, we need the units which that concept subsumes, and we need to have formed the concept itself. Just as we do not "interpret" concrete objects like rocks or chairs (we interpret symbols, statements, facial expressions, etc.), we do not define the units which a concept subsumes, but rather the concept which subsumes a distinguished class of objects. Definitions make*

*it possible to differentiate one concept from another. And since definitions of concepts consist of other concepts, definitions help us map out the hierarchical relationships in which concepts are contextually embedded." (Burner, 2013)*

Peikoff explains:

*"If a concept is to be a device of cognition, it must be tied to reality. It must denote units that one has methodically isolated from all others... A definition cannot list all the characteristics of the units; such a catalogue would be too large to retain. Instead, a definition identifies a concept's units by specifying their essential characteristics. The "essential" characteristic(s) is the fundamental characteristic(s) which makes the units the kind of existents they are and differentiates them from all other known existents." (Peikoff, 1993:96-97)*

*"The process by which concepts are formed involves isolating objects that are essentially similar and uniting them into a mental unit by means of measurement-omission. Measurement-omission is the principle that "omitted measurements must exist in some quantity, but may exist in any quantity." (Rand, 1990:18).*

It is clear from her writings that Rand (1990:28) recognized the implications her theory had for induction and deduction:

*"Thus the process of forming and applying concepts contains the essential pattern of two fundamental methods of cognition: induction and deduction. The process of observing the facts of reality and of integrating them into concepts is, in essence a process of induction. The process of subsuming new instances under a known concept is, in essence, a process of deduction."*

Porter (1999:93) adds the following points:

*"Induction produces universal knowledge from other knowledge, especially from particular knowledge. Concepts are universal knowledge. We do have some knowledge about people we don't know, about their ranges of shapes, heights and weights (but not about unknown and unconceptualized existents). We couldn't have this knowledge if we didn't distinguish those attributes from their measurements, within human ranges. Or if we didn't know there are human ranges. We couldn't do this without forming the concept "man", and we'd have this universal knowledge once we'd formed it. Forming concepts must somehow produce universal knowledge. It must be induction."*

Bahnsen Burner explains:

*"The general point here is that just by forming a concept - since its reference is open-ended*

*and inclusive of all units of a class of objects regardless of when or where they exist or how many there might ultimately be - is in essence an inductive process. We form concepts on the basis of only two or more units which we have observed, and yet the concept so formed includes all units of the same class even though we have not observed nearly all of them. This is an unprecedented power, an ability we should not take for granted [or give over to some authority]. To understand induction, we need to understand how the mind forms concepts."* (Burner, 2013)

Given these points, it would not be the case that all deductive arguments would consequently lose their strength given the supposition that all inductive inferences are necessarily less than certain. Inductive inferences which draw on information already included in a concept may in fact, given the nature of the particulars involved, lead to conclusions which are unassailably true.

We perceive the world, and thus, have awareness of objects as 'entities'. Thus, we can differentiate some objects from others. We can observe general similarities shared between some entities by differentiating them from everything else we perceive and integrate them into open-ended mental units using the process of measurement-omission. Thus, through the process of abstraction, we have universal knowledge based on perception of just a few objects. There is no need for this to be "revealed" to us, as though our minds did not have an ability that they clearly do have.

Fundamentally, it is experience, not faith, which is required to transform data and information found among society into knowledge and a more fulfilling value orientation - the objective evaluation of a subjective experience. If you think the previous sentence contains an oxymoron (that an objective evaluation of subjective experience is impossible), you probably have too narrow a definition of the word "objective". Results can be objectively measured even if the motivations, understanding, and intent (i.e., the underlying dynamics) that created those results are entirely subjective.

There are two primary conceptual categories by which consciousness interfaces with existent reality: objects in reality (i.e., objectively) and experiences in reality (i.e., subjectively). Objects in a common reality (i.e., in objective reality) may be commonly interfaced with, identified and explored. Objects are commonly identifiable and verifiable through common functional tools (i.e., the human senses and scientific measuring instruments). Experiences are individuated; they are subjectively experienced states of reality by individuated units of consciousness that may or may not represent that which has actually occurred in objective reality, in truth. Hence, it is important for us as individuals and as a community to attaching the right concepts to the objects and relationships in our environment so that we can apply (or "leverage") a truthful understanding of the

world in our design decisions.

Experiences may, in fact, convey useful information about objective reality. When information gathered in an experience is openly inquired of and sought verification to objectively, then it may lead to deeper levels of knowledge and understanding of the real, common world.

In a real world information system, knowledge consists of concepts in some patterned (i.e., mirrored) relationship to objective existence, to data, and to that which has occurred (i.e., to truth). Knowledge is not composed of subjective experiences that have not undergone further inquiry to determine their validity and rational alignment with real world occurrences.

Subjective experiences must be themselves be "subject" to common and objective verification prior to their conceptual integration into a community's information structure about the real world. In other words, objective data must be collected on claimed conceptions from subjective experiences prior to the conceptions becoming claims to information.

Once we begin forming concepts on the basis of object-oriented perceptual input, we are identifying the evidences of the senses in conceptual form, which means: we now have a process by which we can categorize specific entities and features (i.e., concrete objects), which we observe, in the form of stable, open-ended classifications. These classifications (or concepts) are formed ultimately on the basis of what we perceive, but include a potential infinity (quantity-wise) of units that we have not perceived (and may never perceive). The concept 'human', for example, includes not only those men and women whom we have actually observed first-hand, but every human who exists now, who existed in the past, and who will exist in the future, however many that sum total may be.

If a claim to knowledge is to be accepted and integrated into the knowledge structure of an individual or community, then logic requires the presentation of evidence that is objective in its nature. Objective evidence is rationally distinguishable from something one may merely be imagining. For a claim to be objective it must have a commonly perceivable referring object in natural existence. Rational inquiry and investigation is required to support a claim to knowledge.

To say that there is "no objective truth" is to say there is no way with verifiable certainty to know of that which has occurred, to know of truth. The fact[ual] reality is that we have knowledge of our world, which has formed a global telecommunications system - this is some pretty good indication that truth exists, and that we can come to know it, and through knowing it we can design more fulfilling systems.

Many concepts correspond to lexical or encyclopedic entries, such as the English word "flashlight". Concepts are centrally involved in communication. Language is the exclusive domain and tool of concepts. Fundamentally, an individual's ability to abstract and to precisely communicate those abstractions is reduced without a

concise and coherently shared conceptual language. Consequently, the confusion and deterioration of a language leads to the degradation of the intellectual reasoning capability in those who use the language, for their conceptual structures will have entered into higher states information entropy (i.e., greater disorder and alignment with objective reality). Language shapes the way we think, and this has been well demonstrated. Semantic and syntactical confusion leads to confusion in ones thinking and behavior. There are many excellent works on this topic, including one of the most well known, "The Tyranny of Words" by Stuart Chase.

The systematic process of behavioral adaptation to environmental change is based on two complementary mental processes: assimilation and accommodation. First, the new experience is interpreted and integrated (or assimilated) in terms of the current model of understanding things (i.e. the 'cognitive level'); and second, thinking is modified to 'accommodate' those features of the experience which cannot be explained by the same cognitive level. Assimilation and accommodation are complementary aspects of all psychological activity involved in understanding the changing environment. As a result of this continuous dynamic "equilibration", behaviour is modified in a process of adaptation which involves greater balance between the individual and the environment through the updating of its knowledge systems. Each new situation (context) causes imbalance, which is corrected in the overall process of adaptation. Accommodation depends on meaningful learning being encoded into some long-term storage or memory for future assimilation and accommodation.

The idea of a "concept" maintains two broad functions: categorization (+ degree) and ordered (+ degree). Categorization is the process by which mental representations (concepts) determine whether some entity is a member of a category. Categorization enables a wide variety of subordinate functions because classifying something as a category member allows for the informing of a new instance. The categorization of novel entities has the potential to lead to knowledge that may be used for understanding and prediction in objective reality. Recognizing a cylindrical object as a flashlight allows you to understand its parts, trace its functions, and predict its behavior, which is useful under conditions of darkness. Not only do people categorize in order to understand new entities, but they also use the new entities to modify and update their concepts. In other words, categorization facilitates integration.

When Aristotle used the word 'concept' he intended it to solely mean abstraction. By abstraction, he meant a special focus on the similarities among things (i.e., categorization), while ignoring or not specifying the magnitudes of their differences. With humankind's greater understanding of the methods of science and our technological tools we can continue to recognize similarities while we measure and calculate their relationships and the magnitudes of their probable difference. This is particularly possible with instrument

sense data coming in from our scientific and technical measuring tools, which Aristotle wasn't privy to. Scientific evidence allows us to refine our conceptions of reality so that they are more aligned with reality. Measurements between concepts that concern the functioning of our society no longer have to be omitted. In fact, scientists have become so adept at measuring the referents to their conceptual variables that concept and measurement are isomorphic in the physical sciences -- an electron is not a theoretical construct, but a very real thing.

However, the inception of a concept initially requires measurement omission. Simply, a concept is a mental integration of two or more units or two or more identical groups of units possessing the same distinguishing characteristic. Concept formation involves the omission of some (and, in the case of highly abstract concepts like consciousness, the vast majority) of information about the units it refers to. In that sense, concepts are clearly different from the physical units subsumed under them (which tend to have all their characteristics intact and in perfect condition, at all times, irrespective of whether they are deemed "essential" or not).

It is important to understand how humans have the potential of going through a process of encountering something new, distilling it down to its premises and perceptual signatures, synthesizing the identities and integrating them in a non-contradictory manner into an emergent information structure.

In a community where individuals are fully versed in the understandings presented here, then an individual would never have to engage in a wholesale clarification of his or her knowledge, for s/he would be performing the processes of logical analysis and synthesis continuously. The process of integration would not integrate information in a fractured manner. Any serious interruption in integration must eventually result in a wholesale re-clarification of one's model of reality. This is particularly the case if the individual seeks to once again orient toward truthful fulfillment. In such a community everyone would be facilitated in their acquisition and usage of this methodical framework of thought gradually from childhood as they were developing. They would not have to face years of remedial work in order to undo years of conceptual chaos. And, metaphorically speaking, the deeper the conceptual rut (belief) the harder it becomes openly decide to step out of it. When all these random chaotic things are rambling around in someone's head it makes it more difficult for them to solve problems.

Removing prejudice is seeing things as they are. When individuals have the tools [to see and integrate reality as it is] habituated at a young age, then they wouldn't have to identify then they wouldn't have to go through a whole-scale re-clarification of their thinking process, which can be a significant self-challenge.

Consciousness is in charge of the conceptual level of thought, and it can be used effectively to reflect on what nature is giving [expressed] awareness, from which consciousness can generate its own fulfillment. Herein,

concepts become abstractions, as separate from the existent to which they are intended to reference. Once "you" begin forming concepts, you can create more concepts (i.e., we can abstract away from the existent, to the point that the conceptual idea being reference has no possible, actual referential existence). Yet, we are still learning and doing through concepts.

Here, the power of our "abstract mind" is the building of abstraction from other abstractions. New concepts from already devised concepts. An individual then takes a number of concepts and integrates them into a model. Then, individuated consciousness tests itself (and its models) in reality. In order to verify one's orientation one must always test that which has been identified and perceived; while repeating the process of forming new concepts from previously established concepts. The formation of concepts represents the potential of bringing us into, or out of, greater alignment with reality. To "abstract" is to create a concept. Accurate abstractions are formed from the evidence we perceive of a tangible reality. The concepts in mind must "match up" with the real world if they are to have any use in orienting toward ever more fulfilling states of reality.

By asking a question, a concept is formed. Then, consciousness relates concepts to one another in a proposition form. Propositions become more coherent through argument and scientific testing, building into reasoning itself. To "reason" is to compare and contrast, pattern match things in reality. Abstractions can be analyzed, synthesized, and patterned (i.e., matched in a spectral matrix of patterns).

### 4.3 Reason

**NOTE:** When individuals want to discuss things rationally, then they bring themselves into the commons. All individual, rational beings have the potential for seeing and processing the commons in common. This is only rational.

In objectivism, that which is known as 'reason' is defined as the means by which individuated consciousness learns about the world, about one self, and one's needs. Thus, human knowledge - all human knowledge - is a result of a process that extends from perceptual observation through logical inference. Reason is one of humanity's survival tools, and the process of logic is not the "cold, calculating dead hand of reason", but instead enables one to live a life aligned with the real world, some might say, part of the virtue of integrity and honesty in a community. So, if humans reject reason, if they reject non-contradictory identification and logical integration (i.e., critical systems thinking), then what are they left with other than feelings (subjective affective states), political statements (subjective opinions), and prophets (subjective authorities). Things like these cannot be logically integrated into a conceptual and logical model of the real world - they are "disconnects". When societies are structured upon these disconnected concepts they are likely to lead to social and economic systems that thwart

real world fulfillment. In other words, their encoding into the social and economic structures of a society (into markets, politics, and leaders) has the consequence of creating an environment where inherently insufficient fulfillment leads to the generation of corrosive behaviors that even further inhibit or degrade fulfillment.

Humankind gains knowledge [at least] by perceiving reality with its five senses, forming concepts and principles on the basis of what is perceived, checking ideas for consistency with reality, and correcting any contradictions discovered in the thinking processes (i.e., cognitive adaptation to lower states of entropy). Reason is how those in humankind who follow the scientific method and its ancillary processes discover facts about the world, from the principles of biomimicry to the existence of probability waves to the structure of biological life, DNA; it is how inventors and engineers design life-enhancing machines and devices, from automobiles (locomotion that provides a larger decision space to a community) to heart pumps (extension of the quality of life) to mp3 players (extension of the quality of communication); it is the potential for collaboratively creating a socio-economic system to fulfill all known human needs in a community while sustaining a regenerative environment and reducing the presence of environments that generate personally and socially corrosive states of being, doing and having.

Reason gets you from premises to conclusions. It doesn't tell you which premises are accurate and it only works in deductive arguments. Inductive arguments always have a degree of uncertainty to them.

**INSIGHT:** Reality includes human experience, but human experience may not align with reality (as in, the commonly objective and existent real world reality). Neither experience nor existence is illusory. What we call a map is actually the territory relating to itself recursively -- there is only territory. Even if the map is incorrect, it is still part of the territory at some level. To accurately orient, maps must be changed to match the territory. Yet, even if people have concepts in their minds utterly disconnected from reality, then those disconnected concepts are still part of the territory and part of existence - their structure is accountable for by the whole system. And, there is a correct map for human fulfillment somewhere in the territory.

### 4.4 Critical thinking and philosophy

A.k.a., Cognitics.

Practically speaking, critical thinking is thinking through what "you" accept and what "you" do. Critical thinking requires a sufficiently open mind (i.e., a mind that is sufficiently unattached to currently accepted information sets that is able, in a timely manner, to accept new information and modify existing information. More simply, critical thinking is a process (or set of processes) used to determine whether or not what "you" are

thinking about is true or not.

To make a truth claim while simultaneously denying that truth exists.

1. If, there is no acceptance of the existent usefulness of the concept of:
  - A. Either, the concept of truth.
  - B. Or, the concept of degrees of truth (i.e., probability).
2. Then, there is a truth claim while simultaneously existing a denial (or negation of) truth claim -- there is the negation of logic itself, or more precisely, a negation of a commonly logical relationship to the real world. More colloquially, there is intellectual dishonesty.
3. And thus, there is no ability to accurately orient [socially] in an optimally objective direction.

**NOTE:** Other common words (i.e., synonyms) for 'truth' are: Real, fact, objective, "is the case", "commonly experienced/-able".

Some social configurations hide the "light of truth" by substituting the absolute conditions of human need with the aspirations of power and profit, triggering possessive [survival] instincts. In this way, human wants became human needs, and as they were unique to him/her they also became one's identity. Society then progressed with humans fight over possession in absence of necessity.

Philosophy is the integration of information toward an ever increasingly accurate understanding and action in the [real] world, and it requires the usage of the concept of 'truth'. It could be said that philosophy is the search for a global optimum modeling function:

1. What exists?
2. What can be known about what exists (a discovery/search function)?
3. What is the nature of truth about what exists (an order/sort function)?
4. What is the nature of creation using what exists (a construction function using what exists)?

**A. Rational cognitics** - an explanatory system for a world with meanings.

1. **Ontology (concept visualization structure science)** - the logic (and study) of the structure of what exists. Ontology is the logic about (i.e., figuring out what concepts and associations) are important, and mapping them out, in order to explore a particular direction. Can "I" visualize and explain what I know?
2. **Epistemology (knowledge confidence structure science)** - the logic (and study) of knowing what exists. How do "I" know what I know? How confident am "I" about what I know?

- i. A significant epistemological question is: What is the [strength of the] confidence in the statement (claim, belief, etc.) as related to the evidence in support of it, applied recursively.
- B. **Rational physics (object visualization science)** - an explanatory visual and conceptually descriptive system for a world with objects.
- C. **Experimental physics (test evidence science)** - a testable, statistical system for a world with quantities and qualities.
- D. **Ethics/morality (socio-technical science)** - a prescriptive socio-technical system for what is most likely to lead individuals and the social toward greats fulfillment, well-being, and ecological restoration. What should "I" do, what should "we" do? Ethics/morality refers to orienting the resolution of a state decisioning (possibly with conflicting interest) under conditions of shared purpose. To share a purpose with others in society for the betterment of all.

There is an existence beyond that subjective that can be commonly known and operated within by individual consciousness - there exists and objective (common) and subjective (individual consciousness) world; a 'real world'. This real world can be known, and is known with some degree of accuracy (i.e., probability). An individual and social population can share information on how it operates, and how we (the individuals among a social) can best operate within it.

If there are no facts, then there is no truth, no real-world, and no objects. If there are no facts, then there is no history and no science. And, there is no real news, only interpretations about news. And if there are no facts, then how do we explain the truth of conditional (i.e., contingent) true sentences, such as, "The dog is on the mat."?

**STATEMENT:** *It makes "your" ability to determine what is optimal for your fulfillment in any given situation difficult.*

"The book is against the wall", is a 'true' contingent sentence. Thus,

1. How does someone know that it is 'true', except by seeing (or otherwise sense perceiving, observing, experiencing) that the book is against the wall?
2. What is this seeing (experiencing, feeling) if not the seeing of a 'fact', where a 'fact' is not a 'true' proposition, but the truth-maker (i.e., subjective claim) of a true proposition?

This seeing of a fact is not the seeing of a book (by itself), nor of a wall (by itself), nor of the pair of these two [physical] objects, nor of a relation (by itself). The seeing

of a fact is the *seeing of a book's standing (existing) in the [geometric] relationship of being against* (Read: a type of logical relationship) a wall. Some people say, that the seeing of a fact is the "seeing/sensing of a [truth-making] fact". If facts/truth exist, then there is a category of information (i.e., categorical inventory) that composes information with some knowable relationship to a commonly experienceable (i.e., experienceable with everyone with the sense to experience) existence, a real, factual, objective [at least] world. The relation, however, is not visible, as are the table and the wall. So how can the fact be visible, as it apparently must be if I am to be able to see (literally, with my eyes) that the table is against the wall? That is our problem.

Let "023" symbolize a contingent relational truth about observables, such as, "The table is against the wall". It is then possible to setup a problem:

1. If one knows that "023", then one knows this by seeing that "023". The table against the wall can be pointed to.
2. To see that "023" is to see a fact.
3. To see a fact is to see all its constituents (i.e., all that it is composed of). A table object against a wall object.

Facts are claims about observable, experiential things. At a higher level, facts are an information category useful for decisioning within a feedback system (in a real, commonly experiential world). If there are no facts about observable things, then it is reasonable to hold that there are no facts at all. The real world is conceivable as objects and relationships in a situational environment.

#### 4.4.1 Assuming facts and results

Logic and set theory can be used to "prove" facts. Logic set theory start with:

1.  $\neg(A \cap B) \equiv \neg A \cup \neg B$
2.  $\neg(A \cup B) \equiv \neg A \cap \neg B$
3.  $A \Rightarrow B, \neg A \Rightarrow \neg B$

If there is a desired result (an outcome), then there must be facts.

1. If *facts*, then *result*.
  - $\text{facts} \Rightarrow \text{result}$
2. It is impossible that there are *facts* and no *result*.
  - $\neg(\text{facts} \wedge \neg \text{result})$
3. There are no *facts* or there is *result*.
  - $\neg \text{facts} \vee \text{result}$

Thus,

1. Ultimate facts  $\Rightarrow$  result
  - $\text{Ultimate facts} \subset \text{result}$

If there is no result (no set outcome), then there are no facts.

1. If there are no *facts*, then there is no *result*.
  - $\neg \text{facts} \Rightarrow \neg \text{result}$
2. It is impossible that there are not *facts* but *result*.
  - $\neg(\neg \text{facts} \wedge \text{result})$
3. There are *facts* or there is no *result*.
  - $\text{facts} \vee \neg \text{result}$

Thus,

1. If there are *facts* and only then there is *result*.
  - $\text{facts} \Leftrightarrow \text{result}$

All engineered systems have a result (or, are a result), and therefore, there must be facts to inform the result. Solutions to real world problems are based on real world knowledge ("facts"). It is from this knowledge ("facts") database that technical (engineering, InterSystem Team) solutions are developed and applied at the level of the local habitat service [city] system.

#### 4.4.2 Assuming no facts

If there are no facts, then everything is subjective-interpretation (opinion), upon which no thing can be safely engineered. If there are no facts, then there is no possibility of accounting for real world events. If there are no facts, then what anybody says is as valuable/useful as what anybody else says. If there are no facts, then when organizing society, humans are likely to fall back on "might makes right".

#### 4.4.3 Assuming truth

What is truth?

1. In community, that which is truth is:
  - A. That which best matches the objective reality.
    - In other words, what is true is that which best matches external reality.
  1. People's experience of the same reality, wherein, only their interpretation is it different.
2. For local rational conversation, that which is truth is
  - A. People creating words and defining their meaning.
3. In an authoritarian environment, that which is truth is:
  - A. The opinions and beliefs of people, particularly people with authority.
4. In the market, that which is truth is:
  - A. A strong belief.
5. In the public sphere, that which is truth is:
  - A. That which everyone agrees to it.

## 4.5 Contradiction in integration

*"For if you [the rulers] suffer your people to be ill-educated, and their manners to be corrupted from their infancy, and then punish them for those crimes to which their first education disposed them, what else is to be concluded from this, but that you first make thieves [criminals] and then punish them."*

*-Sir Thomas Moore (1478-1535), Utopia, Book 1*

When conceptual understandings are adopted and integrate without conscious thought then there is a high likelihood that undesirable concepts will slip into someone's habitual thinking processes and pollute their entire information system, causing them to act in some higher degree of dis-alignment with the fulfillment of their needs. To reach higher states of fulfillment it is necessary to question new concepts, to re-evaluate concepts, to update them, and to inquire into the contradictions between them. People are often willing and do integrate a whole litany of things that have nothing to do with an alignment with existent reality. These "disconnects" (or disconnected things) take root in their mind and warp their perceptual and conceptual alignment with reality, and hence, their behaviors to others in reality.

As a community, we do not integrate into our knowledge structures ideas that are contradictory and opposed to the facts of reality, or have not been sufficiently verified, for if we ever do then our community would begin a path opposing our well-being and our lives on a planet that functions in a particular, fact[ual] manner. We would essentially be put on a path that risks our very survival; for we will no longer be tracking the reality we exist within and which maintains our existence. In other words, we would no longer perceive the truth of reality with great frequency, frequently - we would have a "lower vibrational" alignment with the existent reality in which we have real needs.

Humans appear to have a natural propensity to seek the removal of contradictory understandings from their minds. Long practicing thinkers will tell you how in deep states of meditation, contradictions that one unknowingly held, were revealed for their true and identifiable and relatable nature - maybe the mind naturally performs some form of logical defragmenting and clean up when experiencing a conducive "mentation" state. Some of us need to rearranging things in our mind so we can think more coherently, more simply and effectively. And, there are tools effective for this process: meditation; systems thinking; critical thinking; and analytic thinking; ayahuasca.

If someone is having difficulty arriving at solutions to problems with a cause, then it might be wise of them to re-evaluate their knowledge map of the world for they may have integrated concepts in a conflicting (incoherent) manner and generated claimed "knowledge" that conflicts with the factual, technical principles of

the real world. They may have accepted traumatic programming. Arbitrary concepts and knowledge are highly likely to corrupt someone's information model of the world, reducing their decision space for fulfillment to a subset of the space needed to understand and solve the problem.

How is someone to know if s/he is contradicting herself at a given time and in any given moment? Since human awareness is finite and limited, how is s/he to know whether some proposal or idea, which may sound plausible, is consistent with what s/he already accepts, since her mind cannot compare old contents and new in a flash of synaptic incite. Since it cannot hold in a single frame of awareness all of her relevant former ideas and a new item being considered. There is only one apparent alternative. Humans must work to integrate new ideas. A conceptual consciousness as an integrating mechanism demands the integration of all its contents. One movement at a time she must relate a new item to her previously accepted items and ideas. To the extent of her knowledge s/he must search for aspects, presuppositions, patterns, implications and applications of the new idea that bear on her previous understandings. And s/he must identify explicitly the logical relationships s/he discovers. If s/he finds a contradiction anywhere s/he must elucidate it on the basis of available evidence. And, if evidence isn't sufficient then she might activate a 'perceptual inquiry protocol' to gather or discover more data. On this basis, s/he must amend her former views, defer, or reject the new claim. As a community, we must do the same with our information systems. Concepts must be integrated at a community level through common semantics, syntaxics, symbols, and systems.

In the social information system of the Community, when contradiction appears or ideas present the necessary discovery of new information, the Data Domain is activated to acquire more data to fill in the knowledge gap in the Knowledge Domain for the community in common.

The opposite of the process of integration is exemplified by the "concrete bound mentality", which is a label for someone who establishes no relationships among his mental concepts. To him or her a new issue is a new concrete, unrelated to that which came before, to principles, or to any systematic context. To him, the context that would reveal the absurdity of the new idea is itself unreal. He does not integrate his mental contents, or only integrates within an arbitrary space or compartment. Herein lies the realm of what is known as 'mental compartmentalization', which is induced [by at least "schooling"] and is highly prevalent in early 21st century society. The compartmentalization of concepts and knowledge prevents optimal movements toward the fulfillment of a unifying set of needs in the real world. Early 21st century society is composed of so-called "sovereign" entities who desire acquisition from others, and who believe and work in the cult of the corporation-states, the business.

Some thrifty people even invent contexts that don't

actually exist in reality to give the illusion of rightness to their behaviors and claims. Instead of using their imagination to envision a better world, they use their imagination to fill in gaps in between beliefs.

The type of non-integration being discussed here is known as "compartmentalization". A mind that compartmentalizes does not examine the total implications for the integration of an idea. It is a form of mind that does not question the ramifications of an economic system to all the domains of a society. It is a type of mind that does not perceive the existence of behaviors in a human society as connected to the social organization of a society. It is a "mental system" out of unified and integral alignment with reality. Such a mind often relegates the thinking about these things the domain of another, regularly called an "authority".

Compartmentalization [in part] involves a disorienting form of specialization. It consists not merely of specialization, but in regarding a specialty as a dissociated fiefdom unrelated to the rest of knowledge. Therein, integration is not the systematic specialization of emergent functions in structural organization for the overall benefit of the whole. Compartmentalization disregards the fact[ual] idea that all knowledge about a common interconnected system, which exists and is experienced, is itself interconnected. To cut off a single field, any field from the rest of cognition and from reality is to drop the vast [systems] context, which makes that field possible and anchors it to reality. One might perceive the anchors as our belief systems, the ultimate product of which become articles (constitutions and other declarations) of faith and dogma that reduce the progression of independent thought. And there, the ultimate result, as with any failure of integration, because ultimately some concepts cannot be integrated, is "floating abstractions", self-contradiction, cognitive dissonance, discontinuous thinking, and systemic social problems: a world out of context. A world where collective concepts that do not originate from the real world, filter our experience and become encoded in the systems that we "hope" and have "faith" will make us "peaceful" and "happy" people.

When logical errors (i.e., fallacies) go unrecognized they disrupt the ability to integrate and logically infer in an optimal and coherent manner. The "confirmation bias fallacy" is a 'cognitive bias' and it occurs when someone does not accept new factual information for the reason that it conflicts with old, pre-existing information. If integration, introspection, and unlearning skills are not possessed by someone, then this cognitive bias is not likely to be recognized when it occurs. To understand reality consciousness must "override" cognitive biases, something that can be exceptionally challenging to do. And, for someone to have the opportunity to do so there cannot be punishment for failure in learning, ever.

When we are more coherent in mind we are more likely to be coherent in our communication, and vice versa. We have mind and matter. We have things that exist, and then we have knowledge about things that

exist, and it seems that we need a process to integrate mind and matter. This is known as logic. Logic is a process by which a human being synchronizes its mind with reality [without integrating information into isolation (in isolated ways) so that self-realities don't interfere with the common-self-reality, or what is in the real world].

Objectivity and subjectivity only make sense as concepts in their relationship to one another. They are in essence, polar ends of a contextual spectrum. Objective thinking takes place in reality, and involves existence, consciousness, and identity. At the other end of the spectrum lies the pure subjective experience as all of reality. At the pure subjective end, consciousness experiences itself AND the separation of identity does not exist IN existence. In other words, there is no commonly identifiable existence, there is no individuated consciousness. Objectivity may be defined as the minds ability to relate to an identifiable, collectively shared, reality. The subjective experiences of consciousness about a common reality can be objectively made known through logic, language, and verification. In objective reality humans are cooperatively creating structures known as technologies within a shared material experience. Herein, 'objective concepts' are concepts that correlate with reality, synchronizing with the real world.

Identifications must be made explicit in order to step back and comprehend systematic relationships. There is a complexity of information that must be understood individually to "get the big picture" and to resolve the "big issues". Complex systems must be approached with complexity.

The very idea of knowledge relates to the existence of a common reality and to identity in that common reality. Knowledge presupposes identities - that there is a foundation to that which we are trying to describe through language. Knowledge and truth are based on the fact that existence does exist; that things cannot be in the same space, at the same time, and in the same respect. A cup isn't a lizard. If things in reality didn't have an identifiably separable nature (or existent signature), then there would be no such thing as car accidents because all cars and people could occupy the same space at the same time. In some discoverable sense, nature doesn't have contradiction.

And, our knowledge of what is true changes and becomes updated and optimized as we go through time ( $\Delta t$ , state change), and gather more facts that we didn't previously have access to. Herein, our knowledge of truth itself is always evolving, which does not mean that what was the old truth is now the new truth; it just means that we have an updated and more whole grasp of what is true (if we were accurately integrating the whole time). A "contradiction" would be an apparent break in the signature identity in existence. The following would be an example of such a break: when a wooden object formed into the structure of a functional table could be a biological lizard at the same time and in the same respect.

There is a critical thinking method known as the Dialectic Method. In process, it "argues" all sides of a philosophic argument while discovering and introducing evidence to the point that there is no longer any "argument" [between those who are openly inquiring]. The method applies logical reasoning to the generation of a semantic and syntactic unification of the argument. And yet, a philosophic argument doesn't just involve argumentation with others, but it involves argumentation within one's own mind (i.e., dialectic or omnilectic [all sides] - internal, external, and all perspectives; spectral thought). We all have the potential of thinking systematically.

In a very general sense, the dialectic method involves:

1. Identify all known information about the matter to be considered.
2. Identify and define abstract or ambiguous terminology and concepts.
3. Acknowledge the existence of apparent contradiction, paradox, and nuance.
4. Acquire new information.
5. Repeat steps 1, 2, 3, 4 while also moving to step 6.
6. Determine commonalities and points of connection.
7. Generate the most coherent model of the matter in light of information gleaned through elucidation of both paradox and connection.

The idea of "debating" is a futile effort, and it may be contrasted with directed inquiry and philosophic discovery. A debate is a game with gaming strategies that have been renamed in their lexicon as "debating strategies and tactics". Debating tactics involve the application of sophisticated fallacious arguments and logically de-contextualized statements in order to win the debate. Debating is a characteristic of a political system, not a philosophic one.

Those with intelligence do not reduce themselves to a Cartesian point on a graph, at a single moment in time. When reduced to an anonymous point, singular nothing-ofsorts, a mind can be easily manipulated to suit the needs of whatever corrupt regime is in power at the moment. It is a mind calculating the experience of selective consciousness limitation.

In a topological version of mind the mind is modeled in-time. The mind-in-time models the complexity and ordered-coursing of a mind over time. So, over time it occupies a greater mind space (or "dimension") through a finer, ordered integration of thought. A reduced mind-space occurs when some distortion or disruption reduces the mind's progressively ordered connectedness, its larger context. Over time, such disruptions can be seen as shrinking the dimensions of a mind during the given period. By consequence, a less connected mental space generates a smaller decision space. A well-integrated mind suffers fewer disruptions; herein, a well-adjusted mind seeks greater refinement--a finer, larger coursing

of information over time. It retraces the development of its thought and re-analyzes. It integrates observations with as much of its past and future context as it can reference. It either picks up key strands of earlier thought to further correct and develop them, or it suffers a loss of mind space [and decision space] over time.

## 4.6 Philosophy

**APHORISM:** *Through philosophy we can come to de-mystify the truth. Philosophers see no authority beyond the open inquiry for greater states of truth.*

The nominal definition (i.e., definition in name only) of the term 'philosophy' comes from two Greek concepts, *philos* (the love of) + *sofia* (wisdom); so the "love of wisdom" is essentially what philosophy concerns. It involves studying and coming to know the aspects of our mind and of reality for the love of doing so for oneself. As a field of study, philosophy is the general study of real world problems, such as those connected with existence, knowledge, values, reason, the mind, fulfillment, and language. It is distinguished from other ways of addressing such problems by its critical, generally systematic approach and its reliance on 'rational argument', and in more modern times, visualization. As a process, philosophy starts with the habit of asking questions about declarative sentences; for declarative sentences are conclusions, are potential beliefs and judgments, and are decisions. They are encoded within human systems, they can affect behaviors and they are capable of being spread. Instead of just passively accepting the claims of others, philosophy engages a framework of conceptual activities that are designed to break down, synthesize and communicate matters under inquiry in greater alignment with the truth and the real world. Hence, a "philosopher" desires to know how a conclusion (a why explanation) was arrived at; otherwise knowledge is just a case of "because I say so" or "because the authority said so". As a conceptual framework, philosophy activates the ability to recognize patterns and to communicate those patterns for more accurate action. Some even go so far as to say that "the only true philosophy is that of self-exploration and inquiry, which need not even be called a philosophy". Philosophy could also be said to be the continuous inquiry into that which is "universal".

If philosophy were said to have a goal, then it might be to align perception with that which is already there, that which has occurred (i.e., truth). Wherein, conflicts in perception present a potential opportunity for greater philosophical understanding. Yet, information and its integration can quite easily become "truncated".

Practically speaking, philosophy is the search for truth through integration, which becomes a thoughtfully constructed and explained set of perceptions, beliefs, values, conclusions, and practices that are (1) directed toward understanding the nature of reality and

existence, and (2) offer a set perspectives and guidelines regarding how individuals make sense of existence, determine what gives meaning and direction to life, what goals to strive for, how best to act and operate, and how best to navigate through the conditions of existence they encounter. Notice here that no institution exists regarding implementation.

Let us all start on our way toward developing an autonomously inquisitive philosophy, which is something we refine and use every day of our lives. As individuals, we can share knowledge, but we cannot share the task of thinking for ourselves. And, it is due to the three axioms of a non-contradictory philosophy that we can all communicate, share our observations, think for ourselves, and slowly embody the change we want to be in the world.

In an objective philosophy a common reality really exists (metaphysical realism) and individual consciousness can come to know and identify with reality through perceptual sensation. This is an inherent principle in philosophy. Reality is experienced through perception, which contains descriptive information. Reality doesn't exist "beyond" perception; it interfaces with the perception of consciousness. Some interfaces are more "clear" and less "attached" to mental constructions than others. In order to perceive, there must be some interface or connection, some relationship between the subjective experience of consciousness and the objective experience of an existent common reality. If there was no interface then what would anyone be perceiving?

Reality is not dependent upon humankind for its existence. It exists in nature independently from humanity. Existence has a basis in reality, and is a component of truth. It is inherent to the system we exist within and are conscious of. Existence is not caused by humanity or any one individual. There is a real world and we can at least know it with some sort of probabilistic, statistical certainty.

Reality involves [at least] a system of discoverable technical principles, as conditions that exists, that are both binding (they have an effect, not dependent upon belief), and immutable no matter what someone does, that effect cannot be changed, that condition is there and it is there because "creation" or some larger system put it there. And, humankind is not in a position to change their effects. They are existing conditions that are both binding and immutable.

These principles are sometimes referred to as [natural] laws, though more accurately they are principles that govern and act as the governing dynamics for consciousness in reality. Their existence brings a decision space and consequences; with which comes the possibility for inquiry and integration, which leads to higher states of potential.

Philosophic epistemology depends upon two crucial concepts: that of the nature and the validity of concepts in aligning with nature. If concepts refer to things existing in reality, then knowledge is real and reliable. If they do

not, however—if instead they are imaginary constructs adopted from authority or by social convention without reference to existence, then knowledge is baseless and inherently undependable (i.e., it cannot be depended upon to facilitate moral decisions). The validity of humankind's knowledge depends on the validity of concepts.

Some schools of "modern philosophy" counter the idea of knowing reality with the idea that humans cannot know anything for certain and that there are no absolutes in reality. This singular idea has the effect of drawing people away from its opposite, idea that things can be known, that fact and truth exist. It leaves everything open to interpretation and flexibility, to the rightness of opinion. There exist a wide variety of expressions related to this idea, such as, "it may be true for you, but it is not true for me". This expression indicates that somehow objective knowledge is impossible. Other examples of such an expression are, "everyone is entitled to their own opinion" and "every opinion is valid", as if all opinions are equal because everyone having one is a person. When all opinions are equal, all philosophical arguments end in a "draw" and not a deeper understanding of reality and the truth. Such thinking, of course, finds that which is behind a statement or opinion to be irrelevant, disregarding the validity of the knowledge base and methods from which the statement or opinion appeared. Ideas must be left in the form of working hypotheses open to critical inquiry and the approximation of truth found by the process of exploration and experimentation. Herein, nonsense takes the place of learning and effort. Instead of taking responsibility for testing the veracity of ideas, affective preference obviates knowledge. For the very stability of a society, individuals must be free to experience and experiment for themselves, unhampered by the mere conventions of culture. Unfortunately, this line of thinking, this ideology (not a philosophy), invites people to dismiss logic entirely. A stable society-scale community cannot exist on these subjective grounds where all opinions are equal and the substance behind every opinion is not critically and factually examined.

Philosophic arguments to knowledge are valid, invalid, or unknown. Newton didn't just "get his way", Einstein didn't just "get his way", Darwin didn't just "get his way". They synthesized novel information that was later verified and has become part of humanity's common and emergent pool of knowledge.

If the problems are based on mass psychoses, then real and rational solutions will be of no avail until the psychoses themselves are addressed.

For a community, to accept declarative statements on faith without critical thought (or rational discernment) is a recipe for disaster. If logic is a means of objectivity, then a logical conclusion must be derived from reality, it must be warranted by antecedent knowledge. Logical conclusions are systematically contextual, must relate to prior knowledge, and cannot simply be arbitrary, they must rest on earlier knowledge and so on back until one reaches the perceptual truth, the data of sense.

Reason is the process by which individuals identify and integrate the material of their senses, their percepts. This kind of chain, and nothing less, is what is required for philosophic proof of an idea prior to the arrival of a decision that impacts a community. Philosophic proof is the process of establishing truth and reducing conceptual propositions to axioms (and ultimately to sensory evidence). Such analytical reduction is the primary means by which humankind has of discovering the relationship between non-axiomatic propositions and the facts of reality. An in general, in a society that was taught logical integration from a young age and performed it habitually, then social conversations would not require large scale analytical reduction with each social discussion (as they often do now, which leads [sometimes falsely and sometimes truly] to claims of reductionism).

Ideas must be subject to scrutiny. If they are not, then illusion is bound to begin, masking an individual's perception of true reality. Individuals in regressive social information systems (i.e., high entropic societies) are highly likely to cease conscious discovery of reality and begin creating structures that further lead them out of alignment with reality, and hence, out of states of higher fulfillment. If an individual ignores the principles that govern the reality that s/he exists in, then how could it possibly be said that s/he will create formations that serve needs or meet root desires? Without realization a society's creations might take on disconnected and erroneous forms, "[social] belief constructs", that are adverse to our individual's reality-based needs.

It does not follow that if a claim is not axiomatically true, that it is therefore false or even self-refuting. If a claim which is not self-evidently true can be logically reduced to the axioms of existence, consciousness and identity as well as to the facts that inform them without breaching the methodological principles of systems dynamics, then it has a basis for being true. After all, that is the purpose of logic: to tie conceptual cognition to the perceptual level of awareness. Through systematic and philosophic methods we are more greatly able to explain and understand the why and how of various natural phenomena, which exist interdependently and must therefore be understood systematically. If any interdependent factor is missing, then the phenomena will be incompletely comprehended.

If a communicator doesn't identify truth before communicating to another human being there is a high likelihood that s/he is going to spread a whole host of non-truths. The world today is substantially based on things that do not exist, non-truths, illusions, frauds and deceptions.

Philosophy involves the unocculted keys of learning that provide a potential for people to set themselves free. Early 21st century society does not teach people how to discover the truth for themselves, how to think systematically, and to experience critically; it does not facilitate any meaningful adoption of the actually methods and methodology. Instead, the "authorities"

just get the populace to accept what they say. Acceptance leads to order following, and to order following without question, in particular. An order follower is someone who acts upon an order stimulus, which has been artificially programmed into an individual's stimulus-response mechanism. Order following involves a programmatic response to a stimulus with identifying the contents within and behind both the stimulus and the action that is being ordered to be carried out. Therein, conscious inquiry and intention are absent - that is the definition of order following. Order following is a mental abdication that accompanies not wanting to own one's own personal responsibility, which is a very dangerous path to go down for it quickly leads to a totalitarian culture. Order following involves a stimulus and response, and a squeezing out of conscious thought. Freedom and choice come from that space in consciousness, and anything less is a possible form of slavery.

Hence, a few useful reasons for philosophy are:

1. Some people lie.
2. Some people can't discern fact versus fiction.
3. Some people don't discern facts consistently.

Correct thinking is the most reliable guide to action we humans have. Thinking is a conscious mental process performed to solve a problem, make a decision, or gain an understanding. Thinking is the most reasonable way to test emotions and insights. What would the term "critical thinking" mean if there is no truth. We assume it means learning to discern truth, but if truth does not exist, then instead it becomes a tool for shaping thought. Critical thinking is not as many school teacher's guides would have one believe, "Thinking that is focused on deciding what to believe and what to do" ... with a predetermined (or preselected) outcome set by those in authority.

Have you been dissuaded from looking into philosophy, from looking into nature, from looking into the truth of that which exists? A governing and controlling class, an "elite", would not have an interest in facilitating individuals' understanding of reality for it could easily lead to the systematic questioning of their power structure. Many people can look at the who, what, when, where, and maybe even the how, but when you ask them to explain why, to explain the causal and root factors; why is it like this, and more importantly, why does it continue to persist, most people do not have an answer - hence an indication that the causal factors are not actually understood. If you do not understand causal factors you cannot get to a diagnosis regarding the root or causal problem so that you can then work to change the causal factors and therefore set the problem "right" and fulfill real needs. If you don't have access to the causal factor, then there is no possibility for solving the problem.

The greatest social messages are promoted through movies and drama, through the fixation of

emotive sequences, not logical and factual sequences. Emotively desensitizing content implants experiences and affective reactionary states into the psyche of a consciousness, lessening rational thought. Emotional content is "absorbed", rather than going through a conscious and logical integration process. There are few philosophic dialogues in mass media and mass amusing entertainment; it is mostly propagandistic messages and other Aristotelian box memes (i.e., the placement of people into Aristotelian boxes). When someone is "being downloaded" through fiction their guard is down. The sensory filtration part of the brain is not engaged. It isn't saying "yes I agree with this" or "no, I disagree with that", and asking, "is this contradictory?" as must be done in a philosophic discussion or conscious integration. Instead, the observer is in an alpha state being "downloaded" and "programmed" with new ideas and reaction patterns, and having prior programming reinforced.

When reason is bypassed then contradictory and agenda-based information ends up creating a chaos of the psyche and the individual may become dependent upon the authority of the day as the primary source of information.

The objective philosophic understanding of existence:

1. There is a physical reality which exists independent of humans.
2. Human consciousness perceives reality.
3. The primary material of a human's consciousness is the information received from its senses, its sense interfaces.
4. Sensations allow humans to become aware of existent entities (i.e. perceived as identifications of sensations).
5. Isolating particular entities according to their differences from other entities is the process of identification.
6. Understanding the relationships (similarities and differences) between identities transforms entities into cognitive "units" of information.
7. Measurement is the language of describing quantitative relationships between units.
8. Measurement's purpose is to relate an unlimited scale of knowledge to man's limited perceptual experience.
9. The facts established by measurements are the same regardless of the particular measurement standard that is used.

#### 4.6.1 Solipsism and philosophy

Solipsism is a form of relativism that makes the claim that there is no such thing as objective truth and that everything is only subjective opinion - nothing can actually be known, everyone's definition and/

or explanation is valid. To a solipsist, thought cannot achieve ever greater approximations of the truth through the action of non-contradictory identification and logical integration, for there is no truth or existence in mind - there is only ones own egoic mind. The philosophical concept of solipsism asserts that the only certainty is that one's own egoically projected mind is sure to exist. It is the negation of the idea of objective truth, and often, existence in a commonly interrelated and interrelatable environment. By its own postulate, solipsism is both irrefutable and yet indefensible in the same manner. Solipsism is a preoccupation with oneself, focusing strictly on the "me" to a socially dysfunctional degree. The extreme form of solipsism denies the possibility of any knowledge other than of one's own existence. The less extreme form claims that there is no such thing as objective knowledge of factual reality, but that knowledge is the social construction of multiple minds. Solipsism is a radical preoccupation with the indulgence of one's feelings, desires, and egoistic self-absorptions. It is a preoccupation with oneself or one's own affairs. In short, "it's all about me!" Solipsism is disconnect and detachment from truthful reality, rendering the solipsist clueless about the real world, yet giving them the false notion that they are aware of the world around them. Solipsism mistakes the perception of an object for the object itself, which inhibits the thoughtful processing of illusion and the arrival at solutions that might otherwise become evident.

If one accepts on its faith the notion that there is no such thing as objective truth, then essentially, there is no such thing as knowledge. Nothing can ever be truly known. If nothing can be truly known then ask yourself what would someone be willing to believe? You could get someone who is a solipsist to believe anything. Or it could be looked at another way; you could never truly get a solipsist to accept anything. Soren Kierkegaard states, "There are only two ways that humanity is ever fooled. The first is to believe that which is not true. And the second is to refuse to accept that which is true." There is objective truth and it is a natural goal of any conscience being to discern that which is. Once someone does not accept the concept of logic, then it's over, then anyone can get that person to believe anything given time and manipulative intelligence.

1. **The grammar of solipsism:** Latin [sol-us = alone] + [ipse = self]; the self is alone.
2. **The logic of solipsism:** Self is the object of real knowledge, no other existent.
3. **The rhetoric of solipsism:** Egoism = no proof of existence other than his or her own mind.

The solipsistic approach is a non-relational approach and does not optimize the human condition. If someone thinks that there is no true, existent common reality and that s/he is simply creating reality on their own (i.e., alone), right now, then how is s/he to come to know that which a community of humans might call the common

'human conditions' for fulfillment. Common fulfillment does not exist in the solipsist's world; it isn't discoverable and can't be inquired into. Because the [believed-in] thinking framework that is "solipsism" generates a decision space that lacks a common reference among individuals it is a structure that is incapable of adaptively evolving the socialized individual who identifies only with their egoic selves and nothing broader - someone who has placed a border around their existence is no longer learning of their broader and larger selves..

Many contradictory and disconnected ideologies (solipsism being one of these) have the resonance that they do because of the methodical way in which they are fed to people, often inculcated through some form of fear or passive amusement.

Solipsism is the ideology that no one can know anything, and are thus, continuously held in a subtle state of fear [of the unknown]. Solipsism comes from the Latin sol-us = alone + ipse = self, all by oneself, all alone. It is the ideology that there is no truth because there is no objective reality. The only thing that exists is the contents of ones perceptions. Only ones perceptions are assured to exist and anything outside of ones perceptions is completely unknowable, unsure. Therefore there is no truth and the universe revolves around our perceptions at any given time. If that is ones ideology then the individual can never truly come to know anything. Nothing about the external reality can really be known. There is no objective reality so you can't know anything. How could someone possibly dispel fear when s/he holds to such an ideology. This is what knowledge is ultimately about,

Aligning ones value system in the direction of a higher state of fulfillment (i.e., wisdom) is what a community does with what individuals in the community have come to understand through knowledge. If we do not develop that knowledge and understanding and put it into practice in our lives, then we are always going to be in a state of fear, we are always going to lack the understanding that dispels fear and our behaviors are ultimately going to be chaotic and are not going to align with what actually is, a real environment and real human needs. When knowledge is not available or not employed, then a community is going to get things that is says it doesn't want.

The idea that there is no truth to arrive at, that there is no map in the territory, that it's just all perception, feeds into other ideologies, in particular, moral relativism. If there is no truth, then there can't be any morality; there can't be objective right or wrong if there is no objective truth. From moral relativism it is a short step to totalitarian thinking, because if there is no moral right and wrong alignment with real world fulfillment then every human gets to decide what is right and optimal for him or herself, and this becomes a dangerous state when combined with the belief in authority. Truth is no longer something that requires discovery; instead, everyone can "make it up" according to their likes and dislikes or preferences or whims or perceptions in the

moment. See the relationship between the belief that truth is a dirty word and the idea there is no such thing as objective truth. It is an ideology that will invariably lead to moral relativism and moral relativism is [in part] a movement toward a totalitarian society.

Belief takes precedence when meaning becomes obscured. How can there be coherent communication between individuals if they can't grasp how one another are using the words they are using. Solipsism is a perpetual "memory hole".

Imagine a world where individuals could have conversations and all parties unifiably had the goal of achieving a higher understanding. The opponent in the conversation becomes the wrong answer, not the other person, not the other persons look or clothing, not the other persons size or skin color. The conversation becomes one of "lets together exchange our information and come to a better understanding, for that is ultimately what is better for both of us.

## 4.7 Solipsism and systems thinking

**NOTE:** Among community, individuals understand the danger of delegating their own understanding to others.

The very concept of proof presupposes the conceptual axioms of existence, consciousness, and identity. You cannot prove that other people exist (or that anything exists in a common system), only validate it. It is the material of proof, which is presupposed by any process of proof. Systems are an interconnected relation of existent identities composing a whole. Systems thinking is not a component of a solipsist's ideology. The idea of systems thinking makes no sense in solipsism, and it is not a possible part of its paradigmatic expression. When the paradigm is flawed, the paradigm's logic is consequentially flawed.

There is a world of objective reality that exists independent of human beings and that has a determinate nature that is knowable. Principles that supply a systematic level of understanding must be based on the facts of reality. To survive and flourish humankind must come to grips with the fact that it exists in a common reality. Everyone is constrained by what is metaphysically real. And yet, many people live the majority of their physical lives in a fluid unreality.

If, however, nothing exists, then there can be no consciousness: a consciousness with nothing to be conscious of is a contradiction in conceptual terms. A consciousness conscious of nothing but itself is also a contradiction in terms: before it could identify itself as consciousness, it had to be conscious of something. If that which you claim to perceive does not exist, what you possess is not intentional consciousness, but is instead programmed consciousness.

By virtue of solipsists' attempts to convince others of solipsism, solipsists reveal an implicit acceptance of the existence of other minds and an external objective

reality. When a solipsist makes any attempt to convince or confront a "critic" they marshal facts, employ logic, and use reason in the explanation / debate. Each of these actions reveals an implicit affirmation of a common frame of reference to an external objective reality and the existence of other minds, which are to make use of it (their mind) in understanding the argument. In the very act of arguing for solipsism, the solipsist affirms and upholds the very principle he seeks to dismiss.

The ability to defend oneself from sophistic[ated] ideologies (e.g., solipsism) has gradually been lost to those who are considered by society to be "informed" and "well educated". Without being able to detect lies, their freedom of choice slowly slips away.

Solipsism, like other "flights from understanding", blocks the insights that the creation and sustainment of fulfilling socio-economic situations demand. Wherefore, solipsists follow unfulfilling policies and inept courses of action as situations deteriorate and demand even keener insights, and as they are blocked, policies become more unintelligible and action more inept (i.e., the mind space becomes confused). What is worse, the deteriorating situation seems to provide the uncritical, biased mind with factual evidence in which the bias is claimed to be verified. So, in ever increasing measure intelligence comes to be regarded as irrelevant to practical living. Human activity settles down to a decadent routine, and initiative becomes the privilege of violence. This is exactly what Zbigniew Brzezinski talked about in his book "Between Two Ages" (published 1976). He said, "Shortly, the public will be unable to reason or think for themselves. They'll only be able to parrot the information they've been given on the previous night's news."

A "flight from understanding" blocks the occurrence of synthesized knowledge that would upset an otherwise emotionally "comfortable equilibrium". A human's mind must grasp the relationship between the facts of existence and his/her life if there is to exist true emotional equilibrium, equanimity. Clearly, a person can be mistaken with respect to their value decisions. Consciousness can be wrong regarding what a human's authentic needs really are, the actual relative importance of his needs, and the goods or services that truly fulfill needs.

The human mind is regularly contrived in early 21st century society by the pushing of non-rational buttons and by the putting of maladaptive ideas into consciousness to keep people from thinking clearly. If people were thinking clearly and emotionally stable, would they spend vast amounts of money on things like disease causing (patho-) fizzy sugar water? No, they would not. But, the economy depends upon having people consume a lot of things they don't really want, certainly don't need, and would be better off without. The perpetuation of early 21st century society relies on the manipulation of consciousness to contract its ability to think and to make it fixate on something that someone else wants it to fixate on ... often for profit (in the Market). Advertising is [in part] there to manipulate

emotional buttons and to make it hard for individuals to think such that the next time they see a bottle of fizzy brown sugar water they have a craving for it, or they can't think about anything but consuming it. The market itself is a competitive system where players are incentivized to generate cravings (and misunderstandings) because it is profitable.

Modern consumer States and market institutions are run on manipulation of the public, of the consumer, and of the voter. These institutions rely on manipulating these entities to do things that are not in their best interests, by compressing and contracting their sphere of conscious thought by way pushing individuals emotional buttons and implanting self-destructive concepts in their psyches (e.g., "authority"). Early 21st century society promotes gut level, unthinking irrationality, which is generally prompted by people at a distance pushing emotional and physiological buttons. Primal biological drives are hammered on over and over again until they swamp the capacity for [rational] thought including fear, lust, greed and a handful of other primal biological drives - over time the egoic mind comes to believe that it is the only mind in existence. Images of food and of being accepted or rejected are flashed over and over again in front of consciousness to keep people in a state of unconscious consumption and production -- to impulsively act on their self-concept instead of reflecting upon and integrating every self-concept. Scary images and soothing images are scientifically studied by governmental agencies and businesses and are sequentially replayed in front of the unthinking public to promote overtly expressed profit agendas and covertly thought out power agendas. These aberrant structures degrade the expanded potential of human consciousness to that of a programmable machine. Those who use such manipulation tactics are not your friends; yet, they too are here to learn and to grow from experience. Do not let them fill your mind with garbage. Wherever there is profit and social power there is also deficit. And, the deficit more often than not is one of consciousness.

Fundamentally, solipsism is an anti-philosophy that occults knowledge and counterfeits wisdom. It is the philosophic corruption of the conscious integration of reality through the absence of reason and the destruction of identity, wherein reality becomes something that either doesn't exist, cannot be known/identified, or cannot be known of commonly (i.e., existence does not exist, is not identifiable, or cannot be coherently communicated; everything is just subjective interpretation - common creation becomes challenging here, for engineering requires objectivity, and we are all creators in reality). Like every belief, solipsism holds learning for those who have temporarily chosen to partake in its limitation.

When we begin to doubt and question, then we begin to explore, then we won't buy the social narrative that keeps our consciousness trapped in a state of perpetual suffering for the pseudo-fulfillment of the few and the ultimate suffering of all.

**NOTE:** *The truth is always harsh to the fearful.*

*One must realize that one is not the center of everyone else's universe - this is known as de-centering. A fulfilled society would facilitate in the de-centering of the young of their species. To de-center is to both realize that consciousness can take many forms and that one's egoic self-conception is not the center of the universe. And further, to de-center is to realize that there is an objective reality outside of everyone's subjective experience of reality.*

## 5 The linguistic method

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*A.k.a., Linguistic logic, grammatical classes, word classes, the parts of speech, the parts of language.*

Language touches every aspect of human behavior. Language is a type of thinking and communication tool. As a tool with a function, there is a logic to its construction (design) and application (usage). Language is a rule-based system that enables an organism to think, as well as communicate with other organisms. Language is a tool that provides organisms with a way to frame their thoughts and decisions. Language is the basis of communication. Language conveys the ability to approach problems and decisions from a constructive perspective. Importantly, for optimal thinking and communication, language must be defined first; otherwise, "we" don't understand ourselves, or what anyone is saying. Individuals and teams in society are unlikely to have meaningfully productive discussions if the words they use do not have precise meanings. Language is used to communicate, to understand, and to program.

**APHORISM:** *Language matters. Words program minds to think certain ways.*

In a different [perceived] environment there exists a need for a different language. If we are to live regeneratively in a fulfilling environment versus unsustainably in a commercial environment, then we need a new, more up-to-date language. Language determines the concepts (or conceptual understandings) that are available to consciousness, which filters perception. Language can become a trapping that accompanies the programming and social engineering of the mind, and it is the principal tool for the inculcation of a [limiting] belief system, which may occur through any (or every) form of media and social interaction. Language can always be redesigned to optimize clarity, logic, and precision. Language is a referencing technology. As such, it is a tool for programming our perceptual cognition. Language must be recognized as the determinant organizer of cognition. Human language is far more than communication. Considering the effect of language on society is just as important as considering the effect of society on language.

**APHORISM:** *Language becomes seriously important when you do serious thinking.*

Of the many entrenched barriers to positive change, communications is one of the most intractable. Language has evolved over centuries through ages of scarcity, superstition, and social inefficiency, it is how we make sense of the world around us, and it is continuing to evolve. Entire socio-economic systems are built around the application of language and the discourse of semantics. Language that is continuously influencing

and creating the culture and society that individuals see around them.

Language is an invention, a construct, and what "we" call something has no bearing on what it is. Pluto exists, and its properties are unaffected by whether or not we decide to call Pluto a planet. Individually and together we can represent reality with language, our natural sensory linguistic nature provides for organized understanding and cooperation. With language we categorize, distinguish, and create thoughts and material constructions.

## 5.1 [The tool of] Language

Language is a necessary tool for all forms of communication and all forms of understanding. Languages are necessary for understanding anything as well as doing anything together. The linguistic method is composed of a system that integrates the production and reception of understanding via a set of physical-medium interfaces:

1. Sight.
2. Hear and touch.
3. Vocalization.

It is a method of collecting and integrating information so that its meanings are understandable and capable of being understood by another receiver. This process requires precision in the design of the language itself as it is expressed over the three sensory mediums:

1. Spoken (spoken conceiving; speech).
2. Written (textualized conceiving; document).
3. Visual (diagramming; diagram).
4. Count (numeralized numbering; quantity).
5. Math (formula/operation done to numbers; measurement).

Language may also be viewed as a set of models (they are models because they systems):

1. Verbal model (written and spoken).
2. Image-scheme model (pictures for objects and concept models for concepts).
3. Animation-timeline model (object animation and timeline for events).
4. Mathematical model (numerical formula).

Language forms understanding, which can then be communicated and updated:

1. There are objects with shape that can be pointed to.
  - A. Point to object to identify.
  - B. Draw object in image to confirm understanding [single object; single unit].
2. There are motions that occur to shapes that can be explained:

- A. Show motion of objects in animation to explain relationships [one or more objects in motion].
- B. Explain relationship(s) with written-spoken-formulaic language.

There are three elementary forms of communicating and understanding via language (a.k.a., communication languages, self-/social-understanding languages):

1. **Text[ual]** and **Spoke[n]** (*a.k.a., textual language, written language, spoken language, written-spoken language, text-spoken language, written/spoken language, symbolic-spoken*) - is made up of words that create sentences that are intended to communicate coherent/articulated/clear thought.
- A. **Spoken** - A spoken language is based on an evolved human capacity. Spoken languages are passed on effortlessly from generation to generation, from parents and grandparents to children and grandchildren. They need not be taught in school: children arrive in school already knowing how to speak. All spoken human languages consist of words, which consist of syllables, which consist of phonemes—vowel and consonant sounds. Distinctions between phonemes signal differences in meaning.
1. **Phonetics** is the reception and production of a vocalized language; it has three elements:
  - i. Acoustics (mechanistic physics).
  - ii. Auditory perception (by a sensing organ or device).
  - iii. Physical articulation (of speaker or voice box).
- B. **Written/Text** (orthographics, orthography is the whole writing system of a language) - A writing system is a way of writing down a given spoken language. It is completely artificial, and there can be any number of ways of writing down the same spoken language: using symbols or pictures that represent phonemes, syllables, parts of words, entire words or, as in the case of English, nothing in particular. The best and most popular way to write down languages around the world is phonetic—based on an alphabet, where a letter or a combination of letters invariably represents a certain phoneme. Orthographics refers to:
  1. Orthographic mapping: The mapping of phonemes (sounds) to text.
  2. Orthographic processing: The understandings of rules by individuals.
2. **Visual[ual]** (visualization language) - is made up of illustrations (drawings and models) and/or simulations, and possibly therein, text.

- A. The language of diagrams (all diagrams have the following):
1. Symbols (signifier).
  2. Words (signified).
  3. Numbers (quantity).
  4. Lines (relationship).
  5. Text (not all diagrams have text).
3. **Math** (mathematical language) - is made up of symbols and formula.
- A. Software programming (computational languages).

**NOTE:** *If someone only communicates in one of these language forms, then the receiver of the communication ought lower their confidence that what is being communicated has a very high certainty. It may in fact have a high certainty, but the receiver must still put up a strong critical thinking gate, because anything less than using all three language forms to communicate means the sender is less than an "expert". An "expert" is someone who can communicate a system using all three languages. Essentially, communication in all three languages is necessary for a high-level ("expertise" level) of understanding.*

In relation to a language's ability to express precision, there is:

1. **Informal** - more imprecise language that can be written and/or spoken.
  - A. **Natural language** - a language that developed culturally and wasn't significantly designed by intention. This language can be used to describe and explain, but is considered imprecise.
    1. Common language [terms].
    2. Chat language [terms].
2. **Semi-formal** - more precise language that can be written/drawn and spoken.
  - A. **Technical language** (this language can be used to both describe and explain, so that there is understanding):
    1. **Scientific language** [terms] - an intentionally evolving language the changes as more information is discovered and integrated. Scientists have to write up documents in language so that other scientists can say, I see understand the procedure, materials, and results; let me try that.
    - B. **Visual language** [visualizations] (this language can be used to both describe and explain, so that there is understanding):
      1. 2D graphical languages, such as illustrations, flow charts, and concept models.
      2. 3D animation languages, such as movies and sliding picture frames.
3. **Formal** (formularization language, universal

language) - is the most precise language for description.

A. **Mathematics** - a language that can only describe, it is a language of quantitative adverbs only (i.e., math has nothing other than quantitative adverbs). Mathematics has no adjectives. Adjectives qualify objects. Math cannot explain anything to anyone, it only describes.

1. Mathematics is the domain of all languages, not just the natural languages, because all languages and real-world phenomena have patterns.
2. Math is the language that physicists use to describe processes that they observe in nature. A set of math or set of equations describes the entire universe (no matter what context or perspective).

In relation to a language's construction, there are three elements:

1. **Phonemes (sounds)** - sounds made by human mouths and speakers; these are vowel and consonant sounds. Phonemes are mental representations of speech sounds made by the mouth. For example, the |p| sound in |spoon|.
  - A. Can be:
    1. Heard.
    2. Spoken.
  - B. Cannot be:
    1. Seen.
2. **Graphemes (mapping)** - letters (or combinations of letters) which are mapped to phonemes. Graphemes are individual letters and groups of letters that represent single phonemes, like the "s" and the "oo" in "spoon".
  1. Heard.
  2. Spoken.
  3. Seen.
3. **Letters (written symbols)** - are the cardinal alphabet in the form of symbols (visual building blocks) that makeup written words.
  - A. Can be:
    1. Seen.
  - B. Cannot be:
    1. Heard.
    2. Spoken.
4. **Morpheme** - is the smallest meaningful unit in language.
  - A. Base morphemes:
    1. Lexical (free).
    2. Functional (free).
    3. Derivational.
    4. Inflectional.

## B. Affix morphemes

1. Of the type: prefix-.
2. Of the type: -suffix.

## C. Morpheme procedures include:

1. Prefixing and suffixing - attaching a bound morpheme at the head or foot of a word:
2. Compounding free morphemes - the process of forming compound words by combining free morphemes.
3. Blends - are created by joining two or more words, at least one of which must be clipped.

**NOTE:** *Words are constructed hierarchically. The word inconceivability is broken down using a morphology tree (taxonomy).*

Languages are composed of words (bounded meanings) for which there are two rule-sets:

1. **A rule-set for the spelling of words** (*rules for arranging letters to make words*) - there are rules for spelling. A precise language should have no exceptions.
- A. Morphology types:
  1. Compounding.
  2. Prefixes and suffixes.
  3. Blends.
2. **A rule-set for the usage of words in sentences** (*rules for arranging words to make complex meaning*)
  - there are rules for grammar. There are rules for the structuring (placement) of words in a sentence, which account for word classes, their conjugation, functions and relation.
  - A. **Grammar** refers to the rules for how words are modified and arranged in a sentence to convey coherent meaning.
  - 1. **Syntax** is a part of grammar, indicating the way in which the words are sequenced to create sentences.

### 5.1.1 Semiotics

Semiotics refers to information being represented in the form of symbols. Information in the form of symbols can be presented on three conceptual levels:

1. **Syntactic:** The syntactic level deals with internal relations between symbols (e.g., grammar in a language). All engineering products are on the syntactic level. Syntax is the ruleset for a language; the rules for grammar and spelling. A syntax rule-set describes the systematic ways in which words are combined to create sentences of meaning.
2. **Semantic:** The semantic level considers the meaning of the symbols to someone or to some population of people (i.e., possibly including the

relationship of the meaning with reality). Semantics is a way of classifying concepts in relation to one another:

- A. **Hyponym** - denotes a set of hierarchical semantic relationships.
- B. **Meronymy** - denotes a set of relationships that form parts of a whole.
- C. **Synonymy** - when words have the same meaning.
- D. **Antonym** - when words have opposite meanings.
- E. **Homonymy** - when words have different meanings.
3. **Pragmatic:** The pragmatic level includes the utility and value of symbols. Math, for example, can be used to develop computational software systems. English, for example, can be used to share information globally. Some languages are designed to maintain a deference to authorities.

### 5.1.2 Universal language

*a.k.a., Common language, linguistic unification.*

Without linguistic commonality, integration, and precision [life in] society is likely to become conflicted and fractured. Without a common language how are we supposed to build complex and socially meaningful structures. Not having a common language is equivalent to chaos and it is ridiculous to debate. Yet at the same time, attempting to forcing linguistic assimilation [through what would necessarily be akin to violence] is unhelpful. Forcing assimilation through coercion is still coercion.

**INSIGHT:** *The names applied to concepts and objects determine how easily concepts and objects may be understood, integrated, and visualized. The wrong names are likely to confuse understanding and limit thinking.*

Community seeks a universal language with uniform meaning, so that words, concepts, and sentences are not open to [subjective] interpretation, and hence, confusion, discord, and unnecessary conflict. A best linguistic choice is a language that is uniform by meaning so that it is not subject to interpretation and allows for universally recognized objects and concepts. It becomes very difficult to make progress when the lexicon (vocabulary) is not agreed upon.

Vocabulary is formed into:

1. A term list is vocabulary.
2. A taxonomy is typically hierarchical, added both structure and descriptive power that derives from the relationships between terms. A taxonomy is created by attaching descriptive tags, or labels, to

items of information.

- A. User-generated taxonomies ("folksonomy").
- B. Contribution team-generated taxonomies.

### 5.1.2.1 Modality

In linguistics and philosophy, "modality" refers to the ways language can express various relationships to reality or truth. An example of a formal linguistic modality may be:

1. According to [a set of rules, assumptions, beliefs, observations, animations, etc.] it is [necessary, possible] that [the main proposition] is the case.
  - A. According to:
    1. [a set of rules, assumptions, beliefs, observations, animations, etc.]
    - i. it is
  2. [necessary, possible]
  - i. that
  3. [the main proposition]
- B. is the case (is a fact, the truth, real world, etc.)
  1. with some calculated/reasoned percentage.

The set of propositions which forms the basis of evaluation is called the *modal base*. The result of the evaluation is called the *modal force*.

**CLARIFICATION:** *The term, "modality", has different definitions depending upon the context/discipline in which the term is used. The engineering use of the word generally means: the way or mode in which something exists or is done (this is the common dictionary definition of the term). However, there is also the linguistic use of the term, where language can more, or less, greatly be used to communicate a fact (the truth, the real world, the reality, the existence), with some degree of logical certainty.*

The two modes for which there is a degree of certainty in between are:

1. Being totally correct that something did occur (event), is occurring (process), or simply is (an object). This is simply, being right.
2. Being totally wrong that something did occur (event), is occurring (process), or simply is (an object). This is simply, being wrong.
3. And, in-between, whether or not it is possible to know that something did occur (event), is occurring (process), or simply is (an object). This is the certainty measure.

### 5.1.2.2 Translation

A common language is optimal for clarity and efficiency of communication. In the early 21st century, there are many languages used. Hence, in community, different languages require translation for mutual understanding

and decisioning.

Without commonly defined concepts, there is no possibility of validly translating the term associated with this concept from one language into a similarly understood term in another language.

## 5.2 Words [in a language]

**CLARIFICATION:** *Words are only containers for meaning itself.*

A word is an elementary bounded meaning made up of letters or other symbols. The best and most popular way to write down languages around the world is phonetic - based on an alphabet, where a letter or a combination of letters represents a certain phoneme. Herein, a word is a sequence of phonemes (Read: sounds that are heard and spoken). A phoneme is the smallest phonetic (sound) unit in a language that is capable of conveying a distinction in meaning. The alphabet [of a language] makes up the words of that language. Words are a form of human communication. All words in a language are listed in a dictionary (list of words) where they are defined. Words may also be identified in a taxonomy.

**CLARIFICATION:** *Spelling refers to the correct rules (or memorized exceptions) for writing words with letters and diacritics.*

### 5.2.1 Linguistic word categories

*A.k.a., Word classes.*

There are two linguistic word categories in concern to communications:

1. **Content words (content word classes; object and concept variables)** - are containers/categories for identifying clearly objects and concepts. Content words are a word-type that relates to: objects (nouns) and concepts; wherein, concepts include: actions (motions, verbs) and attributes (adjectives and adverbs). Hence, the content words are all: nouns, verbs, adjectives, and adverbs.
2. **Function words (logic word classes; logic operations)** - are words that form the expressed structure or grammar (logic) of a language, such as prepositions, pronouns, determiners, conjunctions, and interjections.

For example, in the sentence "It(object) rapidly jumped to the next step", the content words are "it", "object", "rapidly", "jumped", "next", and "step", while the function words are "to" and "the". Content words and function words have different roles and properties in a language. Content words usually carry the main meaning and information in a sentence, while function words help to connect, modify, or specify the content words. Content words are usually stressed and can be modified by other words, while function words are usually unstressed and

cannot be modified. Content words are also more likely to be given multiple meanings by different people and have different people change their words classes (e.g., verb to noun as a reification). While, function words are more fixed and stable; because they form the logical structuring of the (variable) content.

There are two linguistic word categories (open and closed word classes) (McRoy, 2021):

1. **Open class (content class words; data category concepts with defined written meaning and concept modeling and objects with named visual images and animations):** is an axiomatic class of words that commonly accepts the addition of new words. New objects and concepts may be imagined and added to the open class. People may invent new names, new objects, and new concepts. Open class words are (a.k.a., content words, as opposed to functional words):
  - A. Objects (a.k.a., nouns).
  - B. Concepts:
    1. Verb (a.k.a., label of motion).
    2. Adverbs (a.k.a., label of qualifier of concept; modify any concept; adverbs modify verbs, adjectives, or other adverbs).
    3. Adjectives (a.k.a., label of object property; modify nouns).
2. **Closed class (functional class words; grammatical/functional concepts):** is one to which new items are very rarely added; because, they compose the logic of existential relationships between the language and the real-world. Closed classes of words are: articles, adpositions, pronouns, prepositions, conjunctions, etc.

## 5.2.2 Word classes

*A.k.a., Word categories, lexical categories, syntactic categories, .*

The words of a language can be grouped into [...] so-called word classes, also known as lexical categories or parts of speech (POS). Word classes group words together according to a number of shared phonological, morphological, syntactic and semantic properties. (Basciano, 2015) A word is assigned to a particular class according to its role in a phrase. Words are used to create distinction between "things".

At least three criteria are used in defining syntactic categories:

1. The type of meaning it expresses.
2. The type of affixes it takes.
3. The structure in which it occurs.

Languages have different categories of words. In a

rational language, every word in the dictionary can be divided into two categories:

1. **Object:** that which has shape separate from another shape. Objects are given "names". Objects are the only type of noun.
2. **Concept:** a word that invokes or embodies two objects. You need two objects to define a concept; meaning that the word object must be defined before the word concept. A concept is a relation between two objects. The definition of the word concept means that two objects are required beforehand. An object is to one what a concept is to two.
3. Here, OBJECT is to ONE what CONCEPT is to TWO.

A rational language could also be one where objects are separate from concepts, but the name of an object is considered a concept too:

1. **Objects:**
  - A. **Static object** - can be pointed to (2D or 3D).
  1. **Dynamic object** (object dynamics) - object being shown in motion (or animation).
2. **Concepts:**
  - A. **Static concepts** - names of objects.
  1. **Nouns** - names of objects. Here, nouns come without adjectives, without qualifiers. For example, it is just a ball, table, car, etc.
  2. **Pronouns** - the identifier for a living organism (animate object). Pronouns replace the noun's label with a designated identifier:
    - i. I, you, she, he, s/he, they, them, they
  3. **Proper noun** (the complete name is: proper substantive noun). These typically start with a capital letter.
    - i. Peoples' names (e.g., John, Elizabeth, etc.).
    - ii. Authority abstractions - are labels that indicate authority (the relative degree of power-over-others):
      1. In the form of "country" (States) names - geographic locations, jurisdictions, where a group of people have power-over-others. For example: England, Persia, Zaire, Vietnam, etc.
      2. In the form of people with "authority": President, Minister, Judge, Officer, etc.).
  4. **Non-proper nouns** (the complete name is: non-proper common substantive nouns).
    - i. Authority abstraction types (E.g., European).
  - B. **Dynamic concepts** - name of relationships and types of motion:
    1. **Verbs** - names of processes occurring to objects. Names of types of motion.
    2. **Abstract nouns** - ideas and feelings.

**NOTE:** To eliminate authority abstraction, eliminate the verb "to be" ("is"). For example, I have a British passport versus I am British or I am a British citizen. The E-Prime English language alternative presents this as a solution to reduce reification. Note here that there is no problem using the verb "to be" before another verb to represent the continuous tense, for example, "I am eating".

A more complete and complex way of viewing the structure is as follows (McRoy, 2021):

## 1. There are **objects (nouns)**.

- A. **Pure objects (nouns):** Everything in materiality is an object that can be visualized and/or pointed to. For example: rock, soil, air, ball, cup, human, cat, insect, etc.

### 1. **Subjects (life-form nouns, animate nouns):**

There are individual organisms that animate matter. These are identified with special nouns:

- i. **Pronouns** - non-name identifier of a lifeform; replaces name of noun. For example: I, you, she, he, s/he, they, and it (note, it is generally used a pronoun for non-animate objects, not for animate ones).
- ii. **Proper nouns** - name identifier of a lifeform. For example: Anyone's name.

### B. **Reifications (abstraction nouns):** Authority other purely concept/abstraction type nouns.

1. Proper noun authority abstractions.
  - i. Country names and the titles of authority.
  - ii. For example, governments.
2. Non-proper noun authority abstractions.
  - i. The subjects of an authority.
  - ii. For example, money.

## 2. There are **concepts**.

- A. **Verbs (actions or states)** - are processes or states as the result of processes. A verb is a process in the real-world. Waste is a verb (process), and not a noun, it is a set of choices. All values are concepts, are processes, are verbs, including: sustainability, open source, freedom, and justice. Other words for a verb include, but may not be limited to: action, state, motion, process, behavior.

- B. **Modifiers** - change, clarify, qualify, or limit a particular word in a sentence in order to add emphasis, explanation, or detail. Modifiers tend to be descriptive words, such as adjectives and adverbs.

### 1. **Adjectives (Ad+jectives; noun modifier, object modifier, noun descriptor):** All adjectives modify nouns. All adjectives name

an attribute (property/characteristic) related to an object. Adjectives qualify objects. An adjective is a word that modifies a noun or noun phrase or describes its referent. Its semantic role is to change information given by the noun. Effectively, adjectives are noun sub-classifiers.

## 2. **Adverbs (Ad+verbs; concept modifier):**

modify the quantity or intensivity/quality of another part of speech. Adverbs are characterized by combinability with verbs, adjectives and words of adverbial nature.

### i. Categories of adverbs:

1. Quantitative adverbs and qualitative adverbs - are essentially the same thing. Qualitative adverbs express immediate, inherently non-graded qualities of actions and other qualities. The typical adverbs of this kind are adverbs in -ly. Qualitative adverbs are, in part, subjective. Quantitative adverbs are specific lexical units of semi-functional nature expressing quality measure, or gradational evaluation of qualities. Quantitative adverbs can be measured and compared. These are derived from numerals: twice, threefold, tenfold, etc.

### ii. Adverbs can be applied to describe or modify any of the following:

1. Verbs (verb modifier) - expressing the property of an action.
2. Another adverb (adverb modifier) - expressing the property of another property.
3. Adjectives (adjective modifier) - circumstances in which an action occurs.

## 3. **Adpositions (Ad+positions; spatial or temporal modifier)** - used to express spatial or temporal relations:

### i. **Prepositions / postpositions / circumposition**

**circumposition** - It is best to call these words pre-position; because, they indicate position differences between relations. These words link a noun to another word by indicating their relative positioning. Prepositions can indicate:

1. Location - reference of a location relationship between objects
  - a. For example: Above, behind, with, atop, under, abottom, between, below, above, etc.
2. Location in time - reference of the time relationship of an object relative to other objects.

- a. For example: In, after, with, before, on, about, from, to, until, as, while, for, of, etc.
- 3. Role/function - reference to a work position. The role of a person or object. Used to refer to the function or character that someone or something has.
  - a. For example, the "as" in the following sentence: "She has a task as an InterSystem Team member.
- 4. **Articles** - are category and singular object classification differentiators. Articles identify whether it is a specific object/concept, or the general classification of an object/concept that is being referred to:
  - i. **Definite article (category reference; category)** - refers to a singular noun or group of nouns (refers to the category; plural, as in, all of a category of object). Refers to the category, and not a specific instance.
    - 1. a, an.
  - ii. **Indefinite article (instance of category reference; one in a category)** - refers to a specific [instance of an] object (singular, one instance).
    - 1. the.
- C. **Referential chain linkages (a.k.a., conjunctions, logical transformers, functional words)** - identify a separation of relationship, while simultaneously tying parts of a sentence together allowing for more complex meaning to be expressed. Words that provide links between meaning sets in a referential chain of meaning. These words function to chain/link/join together groups of meaning [in a sentence, and between sentences]. A conjunction is a word that transitions precisely/appropriately from one concept context to another.
  - 1. **Conjunctions** - are words that join/link words, phrases and clauses, and sentences together, such as:
    - i. Coordinating conjunctions.
      - 1. For, and, nor, but, or, yet, so, actually.
    - ii. Subordinating conjunctions.
      - 1. After, although, as, if, since.
    - iii. Correlative conjunctions.
      - 1. Either...or, neither...nor, both...and.
- D. **Emotive vocalizations** - used to express an immediate feeling or reaction, a short exclamation:
  - 1. **Interjections (emotives)** - a word or

expression that occurs as an utterance on its own and expresses a spontaneous feeling or reaction. They are words that express emotion. Reactionary emotive macro-expression vocalizations.

The syntactic (top-level axiomatic language classes) categories are:

1. Core concepts:
  - A. Nouns (objects):
    1. Object singular: Measurement.
      - i. Number: Counting, sequencing.
    2. Plural: Measurement.
      - i. Number: Counting, sequencing.
  - B. Verb:
    1. Motion: Measurement.
      - i. Number: Counting, sequencing.
2. Modifying/qualifying concepts:
  - A. Language functional concepts:
    1. Articles, adverbs, preposition, adpositions.
  - B. Content functional concepts:
    1. Adverb: modifies measured motions.
    2. Adjective: modifies measured.

Special labeled word sub-categories include, but may not be limited to:

1. **Determiners** - are the pointers to objects and/or motions in the real-world:
  - A. the, a, an, that, these, this, those.
2. **Interrogatives** - are typically prefixed with "wh-" (or, how) and are used for posing questions (inquiries) and are thus sometimes called interrogatives.
  - A. who, what, when, where, which, whose, and why and how, how much, how many, etc.
3. **States (structures)** - the wing suffixes all indicate being-in-state or state-of-being:
  - A. -age, -ancy, -ence, -ety, -ity, -ibility, -cion, -sion, -ion, -tion, -tude, -ship, -hood, -ness, -th, -acy, -osity, -y, -ism, -cracy, -dom, -ery, -ty.

Even another view on the system of simplified word classes is the following (McRoy, 2021):

1. **Object words (referenced by pointing):**
  - Point to the object(s). Show picture or animation.
- A. **Nouns:**
  1. Labels: e.g., bowl, cat, human, table, ball, etc. (are names).
    - i. First "object" - name of object.
- B. **Pronouns:**
  1. Subjects: e.g., I, you, s/he, they (them), we (us).
    - i. First "person": I (singular person)
    - ii. Second "person": you (singular person)
    - iii. Third "person":

1. she, he, s/he (singular person).
  2. they, them, we, us (plural persons).
  - iv. Possessive pronouns (possessive subjects):  
e.g., Mine, yours, his, hers, ours, theirs...
  1. Possessive "person" - his, hers, ...
  2. Objects (third "objects"): it (indicative pronoun).
- C. Proper nouns:**
1. Names (e.g., first to last, or last to first).
- 2. Concept words (referenced by thinking):**
- Think about relationships between objects. Explain events.
- A. Verb (process classifier):**
- Think about motion.
1. Action.
  2. State.
  3. Motion.
  4. Process.
  5. Behavior.
- B. Adjective modifier (a.k.a., noun classifier, noun modifier):**
- Think about composition [scale-type] of object.
1. Modifier of noun; classification modifier.
- C. Adverb modifier (a.k.a., process classifier, verb modifier):**
- Think about motion sub-classification type.
1. Modifier of verb, adjective, or adverb; attribution modifier.
- D. Identity classifier (numerical):**
- Think about amounts.
1. Category (articles: a, an, all) .
  2. Singular (article: the).
  3. Noun classifier (numerical quantity).
  4. Verb classifier (numerical frequency).
- E. [Ad]Position classifier:**
- Think about spatial and temporal location.
1. Temporal classifier (noun or verb).
  2. Spatial classifier (noun only).
  3. Role classifier (noun and verb only).
- F. Conjunction modifier (a.k.a., joining classifier, linking modifier):**
- Think about complexification of meaning.
1. Links two separate meanings.
- 3. Concept models (referenced by looking and thinking):**
- Visualize conceptual understanding of relationships between objects.
- A. Objects:**
1. Names (labels).
  2. Images ("picture, or it didn't happen").
- B. Processes / Relationships:**
1. Structural relationships:
    - i. Composition.
    - ii. Aggregation.

- iii. Assignment.
- iv. Realization.
2. Dependency relationships:
  - i. Serving.
  - ii. Access.
  - iii. Influence.
  - iv. Association.
3. Dynamic relationships:
  - i. Triggering.
  - ii. Flow.
4. Requirements relationships:
  - i. Requirements.
5. Relationship connector:
  - i. Add / Or logic.
6. Operations connector:
  - i. Designs.
  - ii. Constructions.
  - iii. Operations.

**NOTE:** A fully visualized concept model could itself be considered a word.

Another view on the system of simplified word classes is the following:

1. **Object-Concept axiom:**  
**Objectification** - naming of objects.  
A. Objects (nouns) - names of that which has shape; can be pointed to.
2. **Concept-Object axiom:**  
**Taxonification** - labeling within a model of relationships.  
A. Function (verbs) - relationship between concepts (states).  
B. Concept (verbs) - relationship between objects (processes).  
C. Modifier (verbs) - relationship between objects, concepts, or objects and concepts (added description or qualification).

Simplified rational scientific word classes are:

1. **Object** - that which has shape.  
A. Noun - name for that which has shape.
2. **Concept** - a word that embodies or invokes more than one object or location. A concept is a relation between two or more things or locations. (synonyms: notion, idea, mathematical object, particulars, member of a set, relation, to relate).
  1. **Verb** - what an object does.
  2. **Static concept** (does not invoke motion) - For example, a ratio is a static concept. We can look at a circle with a line drawn down the center and conceptualize the concept  $\pi$  in a single image or frame.
  - i. **Adjectives** - True adjectives (flat,

continuous, unbounded, straight) and prepositions of location (at, on, in, below/above, behind, among) are conceptually static.

1. A word that modifies and is used to describe an object.
2. An inherent, static, objective, property or attribute of an object (e.g., flat, continuous, straight, discrete, spherical).

**3. Dynamic concept (invokes motion)** - In order to conceptualize a dynamic concept such as a rate, we need to see the thing move for two or more frames.

i. **Adverbs**

1. A word that modifies or is used to explain a concept.
2. A qualitative (Physics) or quantitative (Mathematics) relation between two dynamic concepts.

The word classes may be broadly associated with the systems of any given society:

**1. Material: Object (noun).**

- A. Item category or 1 of category (**article**).
- B. Descriptor of object (**adjective**).

**2. Social: Concept** (one or more objects in relation).

- A. Event category or 1 event with category (**article**).
- B. Static concept - state (configuration).
- C. Dynamic concept - motion (process, **verb**).
- D. Definition of concept (**adverb**).

**3. Decisional: Solution (adposition).**

- A. Position (qualifier).
- B. Location (modifier).
- C. Time (tense).
- D. Allocation (role).

**4. Lifestyle: Realization of life experience (pronouns).**

- A. **Feelings** and **understandings** of conscious beings.
- B. **Needs** and **preferences** of conscious beings.

**5. Project control: Referential linkages (conjunctions).**

- A. **Coordinating** - coordination connection (priority recognition; positioning)
- B. **Sub-ordinating** - sub-ordering connection (order recognition; ordering)
- C. **Correlative** - one-to-another connection (comparative recognition; comparing).

It is possible to provide a complete breakdown of the axiomatic sub-systems of any given society by word class:

**1. Social** (axiom).

A. **Direction** (purpose) - reason or intention for action. Humans have two motivations, one for nouns and one for verbs.

1. Human physical needs (nouns). we have [physical] needs for objects...that require processes to produce/exist.
2. Human feeling needs (verbs). We feel -- is an action word.

B. **Orientation** (values) - qualities of actions that serve as the intrinsic reinforcer (adverbs).

C. **Approach** (methodology) - methods are processes (verbs).

**2. Decision** (axiom).

A. **Resources** are objects (nouns).

1. **Persons** are subjects, living objects (subject nouns).

2. **Specifics** are qualities (adjectives).

B. **Processes** are motions (verbs).

1. **Objectives** are [system] states (adverbs).

C. **Solutions** are models (configuration combinations).

**3. Material** (axiom).

A. **Objects** are composed of atoms/materials (nouns).

B. **Teams** are a combination of people (subject nouns) and tools/materials (nouns) + methods/process (verbs).

C. **Roles** (adverbs) //note that in the market, roles are often prepositional phrases or verbs. Roles describe how an object (person, tool, or material) participates in an action-relationship.

D. **Services** are processes done to provide a physical-habitat and conceptual-knowledge (verbs) to a population.

**4. Lifestyle** (axiom).

A. **Life cycles** are processes that conscious embodiment experiences (verbs).

1. **Contribution cycles** requires technology support

2. **Exploration cycles** requires exploration support.

3. **Restoration cycles** requires life support.

B. **Life experiences** (interjections).

The temporal tense of any statement can exist in one or more of the following phases on a timeline:

1. Present [tense, timeline phase].

2. Continuous present [tense, timeline phase].

3. Past [tense, timeline phase].

4. Future [tense, timeline phase].

Words are arranged in different ways in different languages, and even in different types of sentences in the same language. This is called word order. Some

languages have no articles, for example, Russian. One serious problem of English as it is constructed in the early 21st century is that one word can be a verb or a noun or an adjective in the exact same form. And the real meaning of articles is to indicate which exact part of speech the word is now. Like "milk cow" and "milk a cow". Do you feel the difference? In the first instance "milk" is an adjective and in the second it is a verb. In Russian, verbs, adjectives and nouns even with the same root have different forms. As a result one can never confuse them. It is achieved by adding specific endings to words, so it is really easy to discern them in speech. So, Russian has no need to have articles, and never will. There are no articles in Russian. There are no articles in Russian because we don't need to designate definitions every time about every object. You just say "dog" or "person" instead of "the dog" or "the person", and significant differences in meaning are conveyed at the end of words. It is possible to use some similar article-based logic in Russian by using *odin*, "one" or *nekotoryj*, "a certain", where English would use "a", or using *etot*, "that", where English would use "the". but Russian speakers feel no need to specify them before every single noun, and they're almost always omitted, unless clarification is requested explicitly.

### 5.2.3 What is a noun?

The question, "What is a noun?" is an important question for the design and utilization of language. What is a "noun". In many English speaking areas of the planet, people are taught in school that a noun is: a person, a place, or a thing. In order for something to be a "thing", it has to be an object, something that can be visualized. There are some things that people call nouns that are not objects, such as novelty, science, knowledge, judgement, reality, tragedy, government, money illusion, are not things (i.e., not objects). There is no such object as knowledge. There is no object that can be pointed in these cases. These are a word of a different order of reality. These are words about relationships between objects ("things"), not about the name of objects ("things") themselves.

Herein, there is problem with a language when this distinction is lost, like in English, where the distinction is not identifiably present. When there is the distinction then challenging arguments become easy to resolve between people; because, in the case of an argument around an object, the object can be pointed to and visualized, and in the case of a concept, a concept can be reasoned with objects (as the subject). It is easy to decide what makes sense when objects can be pointed to and visualized, and concepts can be rationally reasoned. Settling arguments in languages where there is no distinction between objects and concepts.

Arguments can easily persist and degrade between people when a language that doesn't separate objects from concepts is used. Without an object, a "thing" that exists to recourse to, there is no way to fully settle the argument. Relationships between objects ("things") are

treated as objects ("things") themselves, with their own properties independent of someone's evaluation. The process for treating relationships (concepts) as objects (things) is called reification (to reify a concept into an object, and then think and behave as if it exists).

In English, many of these concept-type (as opposed to object-type) words have very clear noun endings that mark them as reifications. They often end in: -ty, -cy, and -tion, -ence, -ism. It is also relevant to note that in English, for many reifications, the article-word "the" is generally the default value (e.g., the resolution, the vitality, the evil). The problem here is that people begin to believe that the world is actually, really, divided into "authorities" and/or "properties". They end up thinking that this projection of their own mind, which is likely a projection of the minds of many others at the same time, is the world, and then they all treat the world as if it is really that way.

**NOTE:** *More precise languages use less -isms (or even, none at all).*

The problem with turning verbs into nouns ("nounism") is that it erases our common humanity, and it helps us objectify each other. Is a woman who engages in prostitution a "prostitute" or a "prostituted women"? Nounism is also used in religions and cults to create the dichotomies they rely upon to divide and conquer (the saved/the unsaved, believers/doubters, suppressive people, angels/angelic/demons/demonic, and so on). Nounism adds a layer of abstraction overlayed on peoples thinking and decisioning that pulls their actions away from global human fulfillment. We don't have to think about dissociating people from their actions: people become their actions. We are very well aware that doing something once does not justify nouning someone: lying once in your life, or even a dozen times, does not make you a liar. We do have the concept that in order to be justified nouning, the nouning must refer to something habitual, ongoing, or innate in the person.

#### 5.2.3.1 Nouns and verbs

It is possible to understand concepts as nouns and verbs. As a noun, a house is a physical object and can be pointed to. As a verb, a "house" (housing) is a long-lived temporal process/state/event. Objects are things with names that can be physically pointed to; concepts are thinking relations. In relation to the concept of work, there are humans and machines, which are the contextual nouns (objects). Then, there is the verb, contribution:

1. Contribution is the state (verb) - where contribution actions are taking place.
2. Contributing is the process (verb) - whereby people work with objects to complete tasks in service to the population.

### 5.2.4 Decomposition of words into letters

The alphabet is an ordered succession of items devoid of any cardinal information. Both the alphabet and numbers seem to be represented on a 'mental line'.

**INSIGHT:** *An over emphasis on spelling (the lowest form of critique) tends to obfuscate the priority or higher significance on meaning and integration of that meaning into the unified whole [information base].*

### 5.2.5 Illogical linguistic rules

Many informal languages contain rules that do not make logical sense and cannot be reasoned. When there are exceptions to rules which must be memorized, then the language is not optimal, because learners (and users) sometimes just do not understand the logic.

## 5.3 Precision of language

*A.k.a., Accuracy of language.*

Precision of language improves understanding and communication. Precise communication starts with definitions and meanings. A "definition" is a list of conditions by which a word (term, concept, or encoding) is used. When the word(s) used are not defined (i.e., left undefined), then there is additional, unnecessary space for error, because of the lack of a definition within an argument (i.e., when "you" don't define words, "you" leave unnecessary room for error). To explain causes, there must be objects (of which there are two types: informational (conceptual, concepts); and spatial (material, physical). We use definitions to foundation the measurement of accuracy in all communication. Here, it is essential to recognize that It is possible for languages to carry biases that alter the perception of their users when speak.

**INSIGHT:** *The language of the universe is illustration, and not mathematics, which formally describes the behavior of illustrated objects.*

Communications is significantly based on language. Language is extremely important for safe operation together, and the imprecise use of language can cause conflict, even unintentionally. And yet, there are different dimensions to linguistic precision:

1. In concern to a system (e.g., the State), every user (e.g., authority) has a "working language" that feels most comfortable and natural to them. Here, there is technical jargon (or, technical deception).
2. In concern to teamwork, in order to more easily resolve conflict, precision of socio-technical language is important when contributing together. Here, there is clear language, description and

visualization. In order to more easily resolve working tensions, precision of language is important.

3. In concern to personal feelings, in order to more easily resolve tension, precision of felt-need language is important when living together.

**INSIGHT:** *It is always wise to question the concepts we have encoded into our selves and our community. Here, we might ask, :Do we really want these concepts encoded into our community system?"*

Precision of language, in part, means a language that includes all of the following, together:

1. A coherent, stable numeral convention (with the dimensions of):
  - A. Conceptualizing (a.k.a., idea, issue, conceiving, thinking).
  - B. Counting (a.k.a., numbers, numbering).
2. A coherent, stable naming convention.
  - A. Label [object] convention (a.k.a., data categorization-pointing; labeling the real-world).
  - B. Concept [objects] convention (a.k.a., language, linguistics, conceiving, thinking, conceptualizing).
  - C. Counting [objects] convention (a.k.a., math[ematics]).
3. A syntax (rule structure) without exceptions that require no memorization after learning the logic.
  - A. No declension or conjugation tables to memorize.
  - B. No unique article rules to memorize.
  - C. No male or female words.
4. Has orthographic rules.
  - A. No separately memorization of how each word is written and how it is pronounced. It is a system that can be reasoned—not memorized.
    1. For example, to learn English spelling is to memorize thousands of obsolete spellings of words: "whale" still has an "h" in it; "gnat" still starts with a "g". Children are forced to cram such non-information into their heads in order to pass tests that allow them to get on in life.
    - B. Embodies the alphabetic principle of phoneme-grapheme correspondence. It builds phonological awareness.
5. Is rational (has rational rules).
  - A. Separation of objects and concepts; no turning of objects into concepts, and no moving of concepts around like objects. Here, it is not rational to assemble an axiomatically impossible system.
  - B. Integration of objects and concepts in physical technologies (Read: habitat operations) and

- conceptual-model standards (Read: the societal specification standard). Here, it is not rational not to assemble a possible [better] system.
6. Uses a unique symbol set designed to work around dyslexia and various visual and learning impairments. It should not trigger, or is less likely to trigger, dyslexia.
  7. It can be written quickly, and legibly.
  8. It is a tool that allows for a way of converting between sight and sound, and back, that can quickly become effortless and automatic.

### 5.3.1 Precision mapping

A language tool designed for precision accounts for the following design principles/characteristics:

1. **Mapping precision without ambiguity:** If a language is based on an alphabet, and it is written phonetically, then learning to read and write it is straightforward: once you learn which letters and combinations of letters represent which sounds, you can then read and write most anything you can speak, and vice versa.
  - A. In a well-designed, rational writing system a small set of rules determines how a word is written down by mapping phonemes to graphemes. The mapping should be unambiguous; there should be exactly one way to write a word, and there should be exactly one way to pronounce a word. This makes a language as easy to read and write as it is to speak. Many languages follow this prescription quite closely, providing a short and relatively simple path to literacy for nearly everyone who speaks them. (Orlov, 2022)
  1. There are some languages where the writing system is so simple that all one has to do is learn which symbols (or combinations of symbols) indicate which sounds. In these languages, a spelling competition would instantly bore everyone. Learning to read and write equates to learning to listen and to speak (using symbols in place of sounds in a one-to-one relationship). These languages include, but are not limited to: Turkish, Hungarian, Finnish, Estonian, Hawaiian, etc. (Orlov, 2022)
  - B. Poor design involves ambiguous mapping of phonemes (sounds) to graphemes (symbols or symbol groups), wherein:
    - i. There is more than exactly one way to write a word, or
    - ii. There is more than exactly one way to pronounce a word.
1. Written English in the early 21st century does not follow the precision mapping principle of one-to-one. For example, take the grapheme "th": it corresponds to two phonemes: [θ] (the sound in "thing") and [ð] (the sound in "this"). Therefore, it is not possible to determine how the grapheme "th" is pronounced. Going the other way, take the phoneme [i], which is the sound in "keen," "bean," "people," "fierce" and "creme." There are many graphemes that correspond to it. Therefore, it is not possible to determine how the phoneme [i] is written. Unfortunately for those who seek to learn to read and write English, these two examples are typical cases rather than exceptions. Not a single letter in the English alphabet is pronounced unambiguously, and not a single sound of the English language is written unambiguously. (Orlov, 2022) In English, there are some words that can be said to obey some set of rules, but they are vastly outnumbered by the exceptions. Any given sound can be written several different ways, and any letter or combination of letters can be pronounced in several different ways, such that learning to read and write becomes largely a process of memorization. This memorization is not only tedious, but it also gets in the way of learning other, more important things. Unlike most other languages, written English isn't based on how it's spoken, but on how words were spelled in other languages, some going back centuries, and most of them extinct. Barely half of the English language is spelled "regularly"; having learned the words "over," "open," and "only" sound alike, the learner finds to their dismay that "other" and "osprey" do not.
- iii. There is more than one way to write down the same sound, but there is almost always a consistent way to pronounce it.
  1. This group includes languages such as Spanish, French and German. (Orlov, 2022)
2. **No vowel reduction:**
  - A. There is a group of languages that have a phonological process called "vowel reduction": stressed vowels are pronounced fully, but most

unstressed vowels are reduced. The reduction rules vary by language and even by dialect. This group of languages includes Portuguese, Russian and English. In English most unstressed vowels decay to something called a "schwa": an indistinct middle vowel. The question is, how does one write down a schwa? It does have the clumsy symbol 'æ' in the International Phonetic Alphabet, but it is used for phonetic transcription, not any actual writing. Giving it an orthographic identity by assigning an orthographic symbol to it means promoting an automatic phonological process (something everyone does unconsciously as a matter of habit) to the status of an orthographic rule, and that is a very strange thing to do. More importantly, words definitely do contain the non-reduced versions of the vowels: they just aren't being pronounced fully when they aren't stressed, but they are pronounced fully when they are. Take the word "syllable": we know that the second vowel is an [æ] (the vowel in "cat") because when the stress is shifted, as in the word "syllabic," we do hear it. For this reason, a precise language (e.g., "Unspell") does not directly represent vowel reduction, and unstressed vowels are written down based on how they would sound if they were stressed: the "a" in "syllable" is written as the "a" in "cat" because that's how it sounds when you stress it "syllAble". (Orlov, 2022)

- B. A precise language (e.g., "Unspell") does not directly represent vowel reduction, and unstressed vowels are written down based on how they would sound if they were stressed: the "a" in "syllable" is written as the "a" in "cat"; because, that's how it sounds when speaking it (i.e., you stress it), "syllAble". (Orlov, 2022)
- C. Vowel reduction introduces some unavoidable complexity into a precise language, which does not create too much difficulty with reading (after all, vowel reduction is automatic and unconscious). However, it does make it harder to write. Through software technology, it is easy to create a language-checker that will prompt the user/inputting agent to make a choice based on context. (Orlov, 2022)

**INSIGHT:** "Slave speak" refers to the language of the slave that perpetuates their own enslavement. Language can be used to free as well as to enslave. If you don't read into language and critically analyze it, then it can be highly programming in a non-beneficial way.

### 5.3.1.1 English Prime (E-Prime)

A.k.a., *English-prime, É, E'*.

E Prime is an English language alternative where the verb "to be" has been eliminated from the language. E Prime removes the "is" of identity, the verb, "to be". Simply, E-Prime the English language without the verb 'to be' or any of its conjugates. The premise underlying e-prime language is that humans often overstate their perceptions and turn them into "facts". Some have called this process "reifying" a concept, taking an idea and treating it as if it were absolutely true—when in fact it may not be. Note here that the other definition for the term 'reification' is taking a concept and turning it into an object. (*E-Prime Language*, 2023)

Reifying statements that make something into a fact are often directed at the following targets:

1. Objects in the world,
2. Socio-psychological targets:
  - A. Other people, and
  - B. Oneself.

Reifying statements about oneself or others might include, "You are a bad boy." Or, "You are so stupid." These statements carry with them a false completeness or false absolutism; because, so-called "bad boys" do lots of good things, and so-called "stupid people" do lots of intelligent things. These statements, repeated often enough, can become "true" to the listener and perhaps introjected into their personalities so that they come believe them. These statements then become internal, self-limiting beliefs that constrain one's growth and development. People can become identified with these limiting and false beliefs about themselves. And, when not accepted by another as a valid identified of oneself, they breed defensiveness (and even, aggression) in social relationships. Reifying statements about the identities of individuals are dangerous in general, because they tend to perpetuate stereotyping and limiting beliefs.

Note that this line of reasoning does not mean that the verb "to be" should never be used, particularly when it comes to objects.

### 5.3.2 Precision alphabet

There are a number of reasons why a precise language doesn't use the Latin alphabet, including but not limited to (Orlov, 2022):

1. A precise language uses a unique symbol to represent each English phoneme. The Latin alphabet doesn't have enough letters to accomplish that. Various Latin-based languages use a number of additional characters, such as ç, ñ, å, š, ī and ø, but that approach would make English look confusing and be even harder to write.

2. Reusing the Latin alphabet for a precise language would cause interference effects with spelled English (which will likely remain on the planet for a while longer) by making it difficult to remember which is which. Because the symbols of a precise language look so different from the Latin alphabet, your English spelling will not deteriorate no matter how much you are exposed to a precision language.
3. Inventing an entirely new set of symbols will allow a precise language to solve a range of additional problems. A precise language is designed to accommodate special needs students who have trouble with the complicated curved shapes of Latin letters. English language students whose native language is not Latin-based (especially if it is Chinese, Japanese, or Korean) find the stroke-based graphics easy to learn. A precision language is easy to write quickly, but, because the shapes are so simple, very hard to write illegibly. It can be written calligraphically using a brush or a pen and stencilled without modification. When embossed, the visually impaired can read it using a fingertip. It is easy to carve and embroider. It can be entered using a touch-interface using stroke recognition software. It can be processed by OCR software even when hand-written. Because the shapes are rectilinear, it scales down to very small bitmap sizes without loss of legibility.

### 5.3.3 Precision of labeling

*A.k.a., Names, naming conventions.*

Labels can be disabling in terms of critical thinking, because once "you" have labeled, "you" know, because "you" have named, and therefore, "you" think there is no need for any more critical thinking about the conception itself. After labels comes application, and so, without continuous analysis about the veracity of the label, the conceptualization can become continuously conformed to the biases/assumptions (if there are any) inherent in the label. In other words, once "we" label something a lot people tend to stop thinking about what else might be going on. "Cognitive fusion" is a psychological concept that indicates that people perceive things the way they label them. A label is a focus, and what we focus on biases what we move toward.

**NOTE:** *If people can't agree on what a label means, then progress in a conversation is halted. In the process of removing contradiction, sometimes labels need to change.*

There are some functional label-type words that describe the object's function, such as "transparency paper". There are also labels that describe how the object was made, such as "butter paper", because the butter

made the paper transparent. A good name should give "you" some information about the structure/function.

It is important to be careful of the words/concepts used, because they will partly shape the perception of and solution to [real] social problems. The way of conceiving of the problem is part of the problem itself. When a war exists, you have an enemy. First, though, we have to find out what an "enemy" is/ There is something about the war metaphor that reveals something about the people who use the term. It says that their first instinct is to reach for the gun instead of achieve an understanding of the actual problem with human need fulfillment.

In general, it is best when a concept is easily understood by its name (i.e., just by seeing its name, it can be understood).

**INSIGHT:** *The names we use determine how easily concepts may be integrated. The wrong words limit our thoughts. We must be careful of the language that we use because it shapes social and economic problems.*

Language can give the illusion of knowing when "you" (or others) don't really know. If "you" have language for something, can label it, then "you" think "you" know it, but is it actually known or is there just language for some expression of it. Just like labels, all definitions (no matter the language) should be considered probationary.

**INSIGHT:** *There is a difference between knowing the name of something and knowing something.*

#### 5.3.3.2 Mislabelling

*A.k.a., Misnaming.*

Misnaming leads to all sorts of assumptions that lead to all sorts of false conclusions. Under a complete scientific process, names/labels can always be updated, given new definitions, understandings, and assumptions. Most importantly, the discoverer of something is not the same as the thing itself. The thing itself should not be named after the discoverer so as not to cause confusion for others, and to provide intuitive first sight (when anyone sees it for the first time they can reasonably approximate its meaning because of a set of rules without exceptions).

#### 5.3.3.3 Scientific misnaming

**INSIGHT:** *The scientific vocabulary works everywhere.*

Spaces which have been investigated and found to be of interest are usually named after one or more of their investigators, this practice unfortunately leads to names that are irrelevant to the properties of that space.

Science using individuals' names to name things creates a whole host of problem. Among the problems it creates are that it leads to future scientists believing in something [that does not exist], because they have faith in the former "scientists" imagined superior intellect.

By naming phenomena after individuals the individual becomes an authority, and in an authoritarian society it is considered disrespectful to question the authority. If the thing is named after an honored authority, then confusion becomes more likely, and the letting go of bad ideas and labels becomes more challenging.

Often in science in the early 21st century, because of ego and the market, the name of scientific/technical things does not help a user/observer actually uncover or understand the difference between things. In other words, often in science, the name given to a thing has no relation to the thing itself and its classification. In general, scientific labels come from the name(s) of prominent individuals and inventors.

Science names given that don't mean anything in relation to the thing itself. In early 21st century science, all of measures and units have mostly been named from their "inventor". There is a common saying, "The beginning of wisdom is to call things by their proper names."

**NOTE:** *It's always a bad idea to let science terms have more than one meaning.*

#### 5.3.3.4 Honor/eponymous naming

Honor naming (a.k.a., eponymous naming) is a form of scientific misnaming. For example, electricity is measured in units of power called watts. A watt is the unit of electrical power. It was named to honor James Watt, the inventor of the steam engine. Eponymous naming is naming things in reality after people, after subjective individuals. In physics, the name of measurements is eponymous as are the units as are processes. Unfortunately, by using individuals' names, scientists end up cluttering the information landscape with useless drivel.

It is selfish and unfortunate when people name discoveries, ideas, and theories that relate to the natural order of reality after themselves (or, others name it after them, which is more often the case). Egotistical and ownership-oriented mis-naming/mis-labeling just make life harder for others. One of the few ways in which a scientist can gain lasting recognition (often after they are deceased) and make life (and learning) more difficult for everyone else is by having a scientific discovery named after them. Such behavior, and the resulting linguistic-conceptual non-coherence creates a more confusing world for everyone and further obfuscates reality. Some scientifically identifiable items, such as species have two names, the scientific name and the common name. The question is, why have two names, which causes confusion; wherein, the common name is what the "everyday" person calls something and the scientific name is what scientists call something to coherently differentiate it from other things in the same group/family/section/category/type. Also, some scientific names reflect the common names which may not follow acceptable naming rules and conventions.

#### 5.3.4 Precision of language and oppression

**INSIGHT:** *Language in cults is controlled because language is powerful in shaping human thought and behavior.*

There is a belief, incorrectly, that using precise language is oppressive in some manner. When in fact, it is the conflict that arises out of imprecise language that generates an oppressive environment. Community encourages precision in speech and thought. Of course, it can sometimes be important in the formation of coherent thoughts to ramble, think out loud, construct an argument as you go along, or say anything provocative.

**NOTE:** *It is possible to control the way people think by controlling their language.*

Precision of language refers to being precise in the identities we refer to in communication. There is a profound danger in watering down our discussion of identity. Doing so ensures that the conversation remains about interpersonal slights rather than about the larger systems, which may be the true problem. There is a profound danger in watering down our discussion of identity by removing any mention of societal power, oppression, and privilege. What is dystopian is a world where most people are uninterested in clarity in communicating ideas. Language, like other forms of communication, can have sub-perceptual properties.

**NOTE:** *In community, there are no words approved or disapproved by any authority figure.*

In the novel, 1984 by George Orwell, one of the ways the government controlled its subjects was to control their language. If people can't use the right words, they can't have the right thoughts.

**APHORISM:** *When you learn new words you will have new thoughts. And, when you are in denial of something, it is hard to know how much you are in denial of it, because you are facing away from it.*

#### 5.3.5 Mathematical language optimization

The language of math can be composed more and less efficiently.

##### 5.3.5.1 Multiplication

Multiplication is taking a set (group) of something that is the same and copying/identifying the set a number of times:

- 3(5)
- May also be written as:  $3 \times 5$  or  $3^*5$  or  $3 \cdot 5$
- Three groups (sets) of five of the same objects (or, movements) each:
- Three is the count of groups (of sets of objects or

actions).

- Five is the count of objects (or action repetitions) in each group.

### 5.3.5.1 The fraction (ratio) in both languages

A fraction differentiates (or “measures”) parts versus the whole.

- XX/YY.
- XX is the part.
- YY is the whole.

In the English language, this read as: XX parts of YY. Note that the number representing the whole comes at the end.

In the Chinese languages, parts of a whole are stated as: YY 分之 XX. Note that the number representing the whole comes at the beginning. When expressing a fraction in Chinese, the whole (denominator) is always said before the part (numerator).

For example, in concern to the fraction 2/3:

- 2 is the part.
- 3 is the whole.

In the English language, it is read as:

- Two thirds.
- Two [parts] of three [parts].
- Two over three.
- Two [out] of three.

In the Chinese languages, it is read as:

- From three [pieces] there are two [pieces].
- Three pieces, two.

### 5.3.5.2 Percentages in chinese

In the Chinese languages, the same basic “part of whole” construction is used. In this case, the whole is 100 or 百 and the part is the actual percentage (as represented by an integer). Hence, the expression is as follows:

- 百分之 XX = %, where XX parts of one hundred (XX%)
- For example, 20% may be expressed as: from 100 there is 20%

### 5.3.5.3 Decimal in different languages

Fractions can be stated as decimals easily in Chinese. This is because each digit of the decimal fraction is stated individually. So instead of remembering tens, hundredths, thousands, etc., the numbers following the decimal point (to the right) are numerically listed.

The decimal point in Mandarin decimal fractions is stated as 点 (diǎn). If the number begins with the decimal

point, it can optionally be prefaced with zero or 零 (líng).

Here are two examples:

- 1.3= 一点三 (yī diǎn sān)
- 0.5674= 零点五六七四 (líng diǎn wǔ liù qī sì)

The West reads and writes from left to right but the numbers come from India and Arabia where one reads and writes from right to left. In English 14 is pronounced as fourteen but it should rather be ten·four. 21 is pronounced in proper order as twenty·one, but is better pronounced as two·ten·one, so that the decimal positional system is also supported by pronunciation.

### 5.3.5.4 Counting (value incrementing) in both languages

Counting from 0 to [1 through] 10 in English and Chinese generates ten unique words, which symbolize the ten numbers of the most widely used base-10 digit system (0-9). From 11-20, the English and Chinese ways of linguistically expressing count begin to differ.

In the English language, to count from 11-20, ten additional words are required. Hence, to count from 1-20 in English, 20 unique words need to be learned. In the Chinese language, to count from 11-20, no new words are introduced. Instead, the Chinese language reincorporates the same words used for 1-10, to cover all the numbers from 11-20. If “you” can count from 1-10 in Chinese, “you” can count to 20 by default.

In the English language, to count from 21-100, eight new words are introduced (thirty, forty, fifty...hundred.). In the Chinese language, to count from 21-100, only one new word is introduced: hundred. No new words are introduced to count from 11-99 in Chinese.

Therefore, to count from 1-100 in English, someone needs to account for 28 words. To count from 1-100 in Chinese, someone need only account for 11 words. This is a significant difference and impacts learning. While the English number words from 11-100 undergo sound changes, the Chinese numbers remain predictable.

After a child learns to count from 1-10 in Chinese, one additional logical concept/rule is applied (iteration), and they can seamlessly count from 11-99. The logic stream remains, and the child doesn't have to learn a single new word to count from 11-99. By learning to count from 1-10, they have learned everything they need to count from 1-99. Further, there are no additional spelling complexities and exceptions that need to be learned.

Watch a child learn to count in English. What happens after they learn 1-10? They get confused, because it's ten new words to count from 11-20. And what happens after they count to 20? They often get stuck at each ten segment for the simple reason that it's a new word – thirty, forty, fifty, etc.

### 5.3.5.5 Measurement in both languages

How to express a certain amount or quantity [of

something] is different in different linguistic expressions of numbers.

Counting in Chinese requires the use of a special class of words called "measure words". Some words in English perform similar functions, but the difference is that in Mandarin all words require a measure word when being counted. These serve to give units for counting and classifying nouns. In Chinese, there are 'measure words' for [almost] everything. Many of the measure words may be applied to multiple different [types of] objects. Every object has a measure word that must be known (and is to be used when expressing a measure concerning that object).

When counting objects, Chinese uses the following formula:

- Number + Measure Word + (Object)

When counting fractions of a thing, Chinese uses the following formula:

- Whole Number + Measure Word + Fractional Number + (Object)

For instance:

1. For pens, it is said, "three sticks of pens".
2. In English, one could say that there are three sheets of paper. In this case, the word "sheets" would act as a measure word. It would not make sense in Chinese to say, "three papers" (as in, "I have three pencils and three papers in my hand").
3. It is not possible to say "one person" or "two people", as in English. Instead, it is said, one *ge* person or two *ge* people. Here, *gu/ge* is [one of] the measure word for person/people.

In English, counting things involves two inputs, the quantity, and the name of that which is being counted.

For example,

1. [There are] a *quantity* [#] of objects [name].
2. [There are] three pens.
3. [There are] three pieces of paper.

English does, occasionally, use measure words.

- For instance, how many 'heads' of livestock are there? Herein, 'heads' is a measure word. There are nine heads of livestock; nine cows.

The linguistics around measurement in Chinese make quantification and comparison unnecessarily more complex by requiring users to remember and apply an additional word. Therein, that word may or may not be inherently relevant to the conceptual characteristics of

the measured object itself. And, it certainly introduces the likelihood for conceptual confusion. For instance, in Chinese, the concept 'stick' is used as the measurement word for quantifying pens; as in, "three sticks of pens". To a large extent measure words pertain to an objects shape or a significant characteristic, but this is not always the case. For instance, there is a measure word pertaining to long flexible/flowy things, "tiao". For example, a fish, dragon, and pair of pants all use *tiao* as their measure word. There is a measure word for things that are flat, and this word is used for pieces of paper and for tables (even though tables are not flat, but have legs).

### 5.3.6 The "Unspell" alternative way of writing the English [spoken] language

**INSIGHT:** *Changing language arbitrarily is the same as imposing law arbitrarily.*

The "Unspell" written language is an alternative way of writing down the English language that is fast and easy to learn. It adheres closely to the alphabetic principle, in that each symbol is used to represent exactly one phoneme (speech sound). The human mind is wired for the distinct tasks of speech perception and speech production, and phonemic memory is the vital link between the two. Every child comes equipped for building a mental dictionary, and the symbols that comprise this dictionary are not letters but phonemes. In most languages, in which letters map directly to phonemes, this distinction is largely irrelevant, but the incomplete mapping of written English is a major impediment to learning. This is because the human mind, and especially a child's mind, is not especially good at memorizing sequences of abstract symbols, such as phone numbers, lists of random pictures or the spellings of English words. It expands the reading horizons of children by removing the barrier of learning English spelling, allowing them to immediately start reading whatever they like. For some children it can be a way around dyslexia and other learning disabilities. It gives children of all abilities a shortcut to learning how to read and write English by focusing on the important part of language learning first - the words themselves, and the ideas they represent - leaving the rote memorization of how they are spelled for later.

Project Unspell has produced a precision written language known as, "Unspell" as an alternative to the latin-based writing system of the English language. The "Unspell" language was designed by first selecting a minimum set of phonemes that captures all the key distinctions of spoken English across all the major dialects. The goal was to be neither overly precise (that would make it more difficult to use) nor overly general (leading to incorrect pronunciation and confusion). The number and significance of minimal pairs was taken into account; thus, Unspell distinguishes pin/pen and pull/pool, but not cot/caught. (Orlov, 2022)

The second step was to map the phonemes to symbols. This was done in a way that renders the most

common phonemes using the fewest strokes. As many symbols as possible were made to resemble the shapes of corresponding Latin letters (making them easier to learn). Vowels and consonants were made to look different at a glance, using the same set of symbols for both but distinguished by their height, thus halving the number of symbols that have to be learned. Paired voiced and unvoiced consonants, such as p/b, f/v, k/g, etc., were distinguished using a single stroke (a voicing mark), further reducing the number of symbols that need to be learned by eight. Overall, similar sounds were assigned to similar symbols. (Orlov, 2022)

The overarching principle that was applied throughout the design of Unspell is the "Principle of Least Astonishment": there are no surprises, except for the initial shock of encountering something radically new. In other words, optimal design means that if a necessary feature has a high astonishment factor, it may be necessary to redesign the feature (design > test for astonishment/intuitiveness > redesign where astonishment/unintuitive). In general engineering design contexts, the principle means that a component of a system should behave in a way that users expect it to behave; that is, users should not be astonished by its behavior (i.e., more intuitively expected behaviors are better). (Orlov, 2022)

Additionally, the Unspell symbols map onto the QWERTY keyboard that is standard throughout the English-speaking world, taking up both upper- and lower-case registers. Stressed vowels (which are wider than unstressed ones) and the eight paired voiced consonants are accessed via the shift key. Those who can already touch-type English on a QWERTY keyboard will find that they have very little to learn. (Orlov, 2022)

### 5.3.7 The failure of the current written English language to meet the linguistic requirements of humanity

English is a relatively simple language to learn: a simple, analytical grammar with no declension or conjugation tables to memorize, a largely international vocabulary mainly derived from French and Latin, and a sound system that features just a few sounds that are exotic.

In spite of that, around 50% of all native English speakers struggle with learning to read and write, and the levels of functional illiteracy in English-speaking countries are often many times those of other developed nations. Of the billion or so students around the world who are studying English at any given time, only a very small percentage go on to achieve any sort of competency in it. In many English speaking countries, children spend approximately eight years memorizing the spellings of words to achieve basic competence in written English. But eighth-grade-level reading and writing skills are too limited for most practical uses, such as understanding law, science, medicine, technology or commerce. In contrast, schoolchildren in countries where the national language has a regular, consistent orthography achieve

adequate literacy in just a year or two, by memorizing a small set of rules, and are then free to learn other things. It is little wonder that many of these countries are surging ahead while English-speaking countries are falling behind. To learn English spelling is to memorize thousands of obsolete spellings of words: "whale" still has an "h" in it; "gnat" still starts with a "g". Children are forced to cram such non-information into their heads in order to pass tests that allow them to get on in life.

The reason for this is perfectly simple: English spelling is a nightmare. It was haphazard to begin with, but then it was simply frozen in time sometime in the 17th century. Since then, the way English sounds has evolved almost beyond recognition. English has no orthographic rules, just an assortment of patterns. Which of the many patterns applies in any given case depends on what word it is. Because of this, to learn English one has to separately memorize how each word is written and how it is pronounced. It is not a system that can be taught or learned—only memorized.

A poorly constructed language system makes learning the language and learning other things in life more difficult, and more likely to fail its users in its purpose to optimize communication and understanding. Illiteracy has many wide-ranging effects (Orlov, 2022):

1. Students waste years on a memorization task they may not be ready for, rather than learning something interesting.
2. Job training and retraining is more difficult for trainees as well as potential employers.
3. Public health and safety is impacted when people can't read safety brochures or health information.
4. It can put you in jail: as a barrier to legitimate employment in the modern-day world, illiteracy can force people to commit economic crimes.

*"In spite of the vast resources and effort directed at achieving basic literacy in English-speaking countries, and in spite of the excessive failure rate of these efforts, few people have dared to ask the simple question: Why is this? Yet all you have do is look, to find both the source of the problem and its solution. It is curious how a culture that embraces radical change in some ways chooses to remain tradition-bound in other ways, even where these old ways inflict great harm."*

-Orlov (Orlov, 2022)

The typical sequence of events in learning to read an alphabetic language is as follows:

1. Learn what sounds the letters make.
2. Learn to form syllables out of these sounds.
3. Learn to form words out of the syllables.

In a language where the mapping is ambiguous, the learner has to memorize the spelling of each word as a whole and then look up its sound in non-verbal

memory. For many people, unfamiliar words become incomprehensible, because the learner is afraid to sound it out for fear of making a mistake and remembering it incorrectly. (Orlov, 2022)

In this case, the learner is not being provided with something vital: a way of converting between sight and sound, and back, that can quickly become effortless and automatic. This is the main cause of trouble with basic education in English-speaking countries which accounts for both its inefficiency and its unacceptable failure rate. (Orlov, 2022)

The precision language [tool] is a way to cleanly circumvent all of these difficulties. "Unspell", for example, uses a simple set of just 13 symbols which, with 4 equally simple modifications that group symbols into sets (vowel vs. consonant, voiced consonant vs. unvoiced, etc.) represent all of the 40 speech sounds of the English language that signal changes in meaning. Most of these symbols are not part of the Latin alphabet, making spelled English and "unspelled" English impossible to confuse. The learner sounds out each symbol, then groups sounds into syllables, syllables into words, and words into phrases. (Orlov, 2022)

## 5.4 Intelligence and language

Language has a direct impact upon cognition. Language has an impact on our psychology and a limited language can limit our understanding of self and other. We are all profoundly impacted by the language we adopted from childhood. It is akin to software running in the background that we might not be aware of. The principles of a language can set our minds free or restrict our thoughts and our lives. Imprecise languages can slow down the learning process for children and potentially even reduce capabilities (e.g., math). (Vangelova, 2015) Languages with higher precision will be learned more quickly, because a set of rational/logical rules is used for their construction, without needing to memorize exceptions. Additionally, languages that convey more precise technical elements will convey a higher intelligence (better understanding and decisioning) for the people who use them. Language is a tool, if someone has a precise technical tool, then it can be used to do work precisely, and therein, communicate and understand more effectively and efficiently.

For example, in general, Chinese speakers do mathematics better than those who don't speak Chinese natively, because the Chinese language has a more precise language around mathematics. Chinese speakers are technically more precise in their language around mathematics, and so, they are literally more intelligent when it comes to mathematics.

**INSIGHT:** *If it can't be encapsulated in language, then a conversation about it becomes somewhat impossible. If you don't have the vocabulary for a subject matter (e.g., colours), then you aren't going to have a nuanced understanding of that subject (e.g., the total spectrum of things that*

*you might see).*

## 5.5 Machines and language

The common language of machinery is logic. Within the intricate circuits, algorithms, and operations of machines, logic serves as the universal language - a language that enables the animation of machines to express behavior, functionality, and intelligence.

Machine language, also known as machine code, operates on the basis of binary logic. Binary logic, or Boolean logic, is a system of logic that deals with operations using only two values: true (represented as 1 or ON) and false (represented as 0 or OFF). In the context of machine language, the fundamental operations and instructions are based on binary logic, manipulating sequences of 0s and 1s to represent data, instructions, and commands that computers can understand and execute.

There are three axiomatic logical operations in machine language:

1. AND
2. OR
3. NOT

*Note: these three operations may be combined in a variety of manners.*

These operations form the basis for the computational processes within a computer's processing units (CPUs), enabling the manipulation of EM signals, interpreted as data by software and human users. At the hardware-power level, the execution of instructions takes on a binary format. While high-level programming languages may abstract away much of this binary logic, the hardware machine language directly deals with these binary instructions, making it the fundamental layer of communication and operation for computers.

After "binary" [hardware] machine language, computers often utilize "assembly" language as the next level of programming language. "Assembly" language is a low-level programming language that uses mnemonic codes or symbols to represent the instructions understood by a computer's processor. Although "binary" language is readable by humans, "assembly" language is considered the first really useful human-readable and human-workable representation of machine instruction.

Each mnemonic in "assembly" language corresponds to a specific machine code instruction. However, assembly language instructions are still closely related to the underlying architecture of the computer's CPU, and they provide a more intuitive way for programmers to interact with the hardware. Higher-level programming languages like C, Python, Java, and others are built on top of "binary" language or "assembly" language machine code; most are built on "assembly" language machine

code. They offer more abstraction, increased readability, and greater portability, allowing programmers to focus more on problem-solving and less on the specific details of hardware. These high-level languages are translated into machine code or assembly language by compilers or interpreters before execution on the computer.

Compilers and interpreters are software used in the process of translating higher-level programming languages (which are closer to human-readable and workable form) into "binary" language computers can execute, or "assembly" language that is then converted into "binary" language. Compilers and interpreters provide the same function of converting one language into another lower language (language conversion software tools),

1. **Interpreters** are used for real-time conversions and executions. Each time the program runs, the interpreter reads and processes the source code, translating and executing it in real-time (i.e., "on-the-fly"). Interpreters functions like a real-time language interpreter, translating and executing the source code line-by-line or statement-by-statement as needed during runtime without producing a separate translated version.
2. **Compilers** are used for producing a stand alone executable object that no longer requires the original source code, or even the compiler, to run. Compilers create executable final files. Compilers function to translate an entire body of content (source code) into another language (machine code) before execution.

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## TABLES

**Table 25.** Differences between the system thinking forms.

Methodological Thinking	Systematic Thinking	Systems Thinking	Systemic Thinking	Synthetical Thinking
Thinking about methods.	Thinking methodically (i.e., using a systems-oriented method).	Thinking about how things interact with one another.	A techniques for finding systems-wide focus and gaining systemic [root] insights into complex systems.	Synthesizing an understood identification of complex interactions of patterns (i.e., similarities) in a system. Whereas analytical thinking is an identification of differences.

**Table 26.** Linguistic word classes divided by the axioms of concepts and objects. For example, if the verb is living (process); the adverbs (modifiers) are alive and dead. Alive and dead are adverbs, because they embody a process or relation. The noun is chair, the adjectives are color (property) and red (quality). Note here that a concept is a relationship between (Read: associates) two or more objects.

Parameters	[Motion] Concepts		[Shapes] Objects	
Word Classes	Verbs	Adverbs	Nouns (including: pronouns and proper nouns)	Adjectives
Rational Word Classes	Dynamic Concept, Not Object	Static Concept, Not Object	Object [Name], Not Concept	Object [Property], Not Concept
Functions	Define [Concept]	Modify [Concept]	Describe [Object]	Qualify [Object]
Axioms	Conceptual	Conceptual	Physical	Physical
System Labels	Process (Action)	State (Relation)	Shape (Volume)	Property (Attribute)
System Attributes	Motion (Action)	Configuration (Relation)	Location (Distance)	Quality (Expression)
Requirement to Understand	Animation of Shape(s)	Labeled Animation	Image of Shape	Labeled Image
Static and Dynamic Representations of understanding	Dynamic representation of concepts (action): # of image frames	Static representation of objects before, during, or after motion: configuration Static representation of concepts: state	Static representation of object: image Static representation of objects: image	Static physical representation: position (volume) Dynamic physical representation: Δ location

**Table 27.** Functional linguistic word classes are all concepts, because they explain relationships between concepts. There are four functional classes: Articles and numbers, conjunctions that join meanings, adpositions that identify spatial location, and roles that identify working/using functions.

Parameters	[Functional] Concepts			
Word Classes	Articles	Conjunctions	Adpositions	Roles
Rational Word Classes	Numerical-Category Concept, Not Object	Link prepackaged units of meaning	Spatial, Temporal	Team
Functions	Identify Category, or 1 of Category	Link, Join	Identify Spatial and/or Temporal Location	Human objectives
Axioms	Conceptual (Category and Number)	Conceptual (Complex Meaning Associations)	Physical (Spatial) and/or Conceptual (Temporal)	Conceptual (Work)
Category	A/an, or The	Link (function)	Location	Work (Service)
One of	Quantity of The, or Quantity in Category	Association sub-type	Time	(Service) Habitat Standard

## TABLES

**Table 28.** Table outlining some broad axiomatic categories of mathematics along with brief descriptions of each category, including the axiomatic concepts of variables and constants.

Axiomatic Categories	Description	Use of Variables	Use of Constants
<b>Algebraic Mathematics</b>	Focuses on relationships between quantities (mathematical structures) including: vector spaces, matrices, and linear transformations based on algebraic operations.	Utilizes variables to denote unknowns or changing quantities.	Involves constants as fixed values or elements in mathematical structures.
<b>Number Theory</b>	Studies properties of integers and their relationships, including prime numbers, divisibility, and number patterns.	Involves variables to denote integers, variables for exploring number properties.	Often deals with constants such as specific numbers like 2, 3, or mathematical constants.
<b>Calculus and Analysis</b>	Deals with rates of change and accumulation functions, limits, derivatives, integrals, and their applications in analyzing change and continuous phenomena.	Utilizes variables to represent changing quantities, rates of change.	Involves constants for fixed values, such as mathematical constants like $\pi$ or $e$ .
<b>Probability and Statistics</b>	Involves probability theory, statistical analysis, and methods used in analyzing data, making inferences, and dealing with uncertainty.	Utilizes variables to represent random variables, outcomes, or unknown parameters.	Includes constants for probabilities, fixed parameters, or statistical distributions.
<b>Geometry and Topology</b>	Studies shapes, sizes, properties of space, and relationships between geometric objects; topology deals with properties preserved under continuous transformations.	Utilizes variables to represent geometric properties, coordinates, or transformations.	Involves geometric constants like $\pi$ for circles, or fixed properties of shapes.
<b>Mathematical Logic</b>	Studies formal systems, reasoning, and proofs, including propositional and predicate logic, set theory, and formal proofs.	Involves variables to represent logical statements, predicates, or unknowns.	Utilizes constants for fixed logical values or properties in formal systems.
<b>Combinatorics</b>	Deals with counting, arrangements, combinations, and permutations of discrete objects and structures.	Utilizes variables to represent counts, arrangements, or combinations.	Involves constants such as factorials or specific counts in combinatorial problems.
<b>Mathematical Modeling</b>	Utilizes various mathematical tools and principles from different branches to describe real-world phenomena and systems.	Utilizes variables to model real-world quantities, parameters, or properties.	Includes constants for fixed parameters or known quantities in mathematical models



# The Data and Knowledge Domains of the Real-World Community Model

Travis A. Grant,

Affiliation contacts: [trvsgrant@gmail.com](mailto:trvsgrant@gmail.com)

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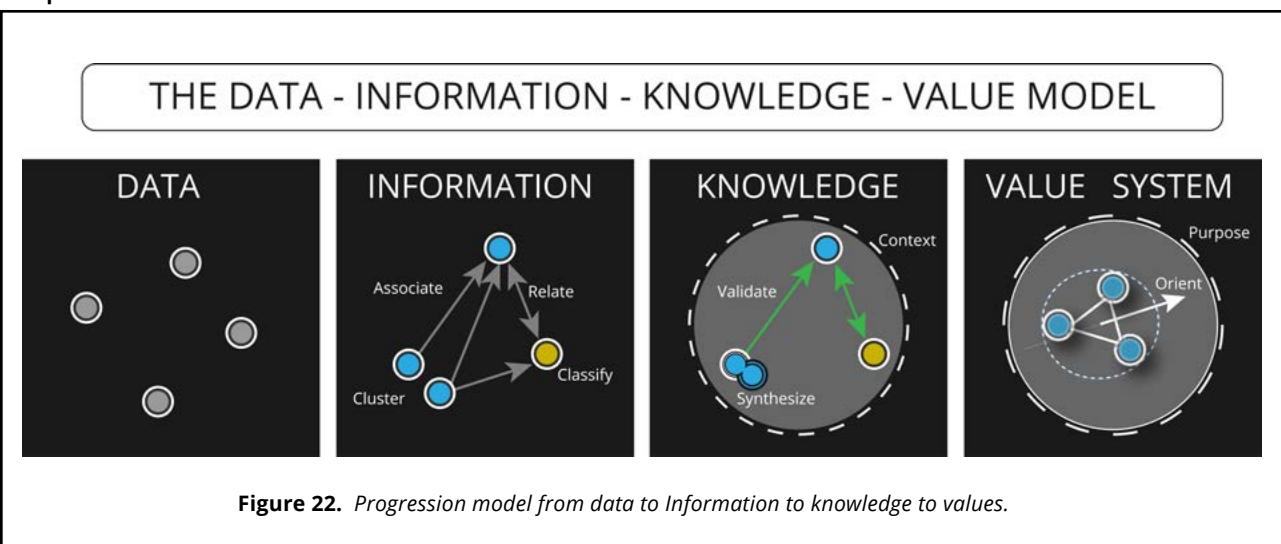
Last Working Integration Point: *Project coordinator integration*

**Keywords:** social data, societal data, data structuring, data organization

## Abstract

The organization of the social system is a two dimensional layer - it is a data platform, consisting of data that is ordered/categorized according to some meaningful process. All new information, and all existing information at its axiomatic-unit level, is data. Data can be more or less useful for the purpose of taking decisions (i.e., more or less actionable). Data with some association to the output of experimental science is called, a body of knowledge. Data with some association to the output of rational science is called, a model. Data with some association to the input of a sense or survey is called feedback. Feedback, if allowed, can be integrated with existing knowledge to produce better results for the consciousness intending a better result.

## Graphical Abstract



# 1 The percept domain

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**NOTE:** If "you" don't know that something is an issue (or even exists), then "you" are unlikely to record that data.

From a philosophical perspective, the Data Domain represents perceptual data and observable phenomena, known as 'percepts'. The term 'percept' refers to perceptual sense data (both human sense data and technical sense data; sensory input) gathered through [open and objective] observation. Percept is the automatic integration of sensation that leads to awareness of a specific existent (or, event in space and time). Herein, concepts involve the mind's organization of percepts [as well as other concepts] into groups based on their essential characteristics that differentiate them from other entities.

For example, take color and texture and solidity, which are perceptually emergent if we consider the behavior of solitary electrons, protons, and neutrons. Color, texture, and solidity are not 'properties' per say, but are 'percepts'. This is how we perceive these properties of the [object] system under observation. This is a phenomenon which belongs to the realm of epistemology (i.e., how do we know what we know?), not metaphysics (i.e., what is reality?). Percepts cannot be reduced to properties, in spite the fact that perception is a valid representation of reality - it is a mental phenomenon. It can only be said that a certain atomic structure is responsible for reflection of light waves of certain frequency and length which we perceive as a "red color". Fundamentally, the perception of color is an extremely complex scientific issue. The perceived color is not just a function of the wavelength of light reflected off a surface. It depends upon the receptors in our eyes; it depends upon the background and surrounding colors in a given field of view. It depends upon the color of light striking the object. Sometimes, it can depend upon the angle of viewing the object.

The elements of perception are:

1. **The object** of perception [in an environment].
  - A. **The media** (signal, light waves, sound waves, atoms, etc.) that transfer information and material [in an environment].
  1. **The organ(s)** of perception.
2. **The concept** of consciousness [recognition of environment].
  - A. **Conscious awareness** integrating input from perception organ (i.e., the subject, the experiencer, the self, the being).

*Note: The conception of a 'percept' is a combination of these elements of perception.*

Perception is a process of active interaction between sensory input and information which has been previously

stored in brain and modeled by it. In other words we have ready templates of percepts (as subconscious schemata or automata) that interact and interface with sensory input. This makes the process of recognition of objects very quick. But, mental model templates are not identical to sensory input, and hence, the brain has to compensate, which creates the phenomena known as 'perception blindness'. Perception blindness is one of the many reasons it is prudent to account for perception at the social level with common tools and environmental feedback.

Certainly, humankind's current sense organs do not have the same precision and accuracy (or at least have not been trained to) as many of its technical and scientific measuring tools, which have been developed through the shared communication of knowledge. Although we as individuals perceive reality through our own individual sense organs, we can use science and technology to commonly discover more accurate data about reality than our five physical sense organs in their current form are capable of doing. In other words, there are two ways in which a community of individuals might collect data and "percept reality": (1) individually through their own sense organs; and (2) socially through collectively developed technical sense instruments (i.e., scientific measuring & surveying instruments) -- perception that correlates to experimental, clinical, and scientific data. When we seek to socially understand our environment and arrive at decisions that involve everyone, we principally apply those tools that are best for commonly measuring and identifying our common, objective reality. This [in part] ensures that our community's information structures maintain an objective alignment with our intentional direction in a common reality [and are less likely to become delusional trappings]. A reluctance to face [a shared] reality in the name of ego-protection is a common barrier to self-development. The idea that we can acquire common data about our common reality through collectively developed technological instruments as well as common methodologies (and methods) is an essential understanding for a community of individuals who seek common and optimal fulfillment.

Before any systematic (and intelligent) expenditure of energy there must first exist an observation of the environment [for input]. Observation leads to the collection, recognition, and structuring of data, such that it persists in a uniquely identifiable and functionally accessible location – so that it is recognizable by the larger community and its information system. This allows for the systematic prioritization of time and energy in all future accessing and processing of the data.

The data domain represents the collective data-base of the community and it is composed of data from three primary sources, which [in part] represent the analytical and critical approaches:

1. **Scientific inquiry** is used to discover a data set for building reliable knowledge structures of the natural world. Through hypotheses, testing,

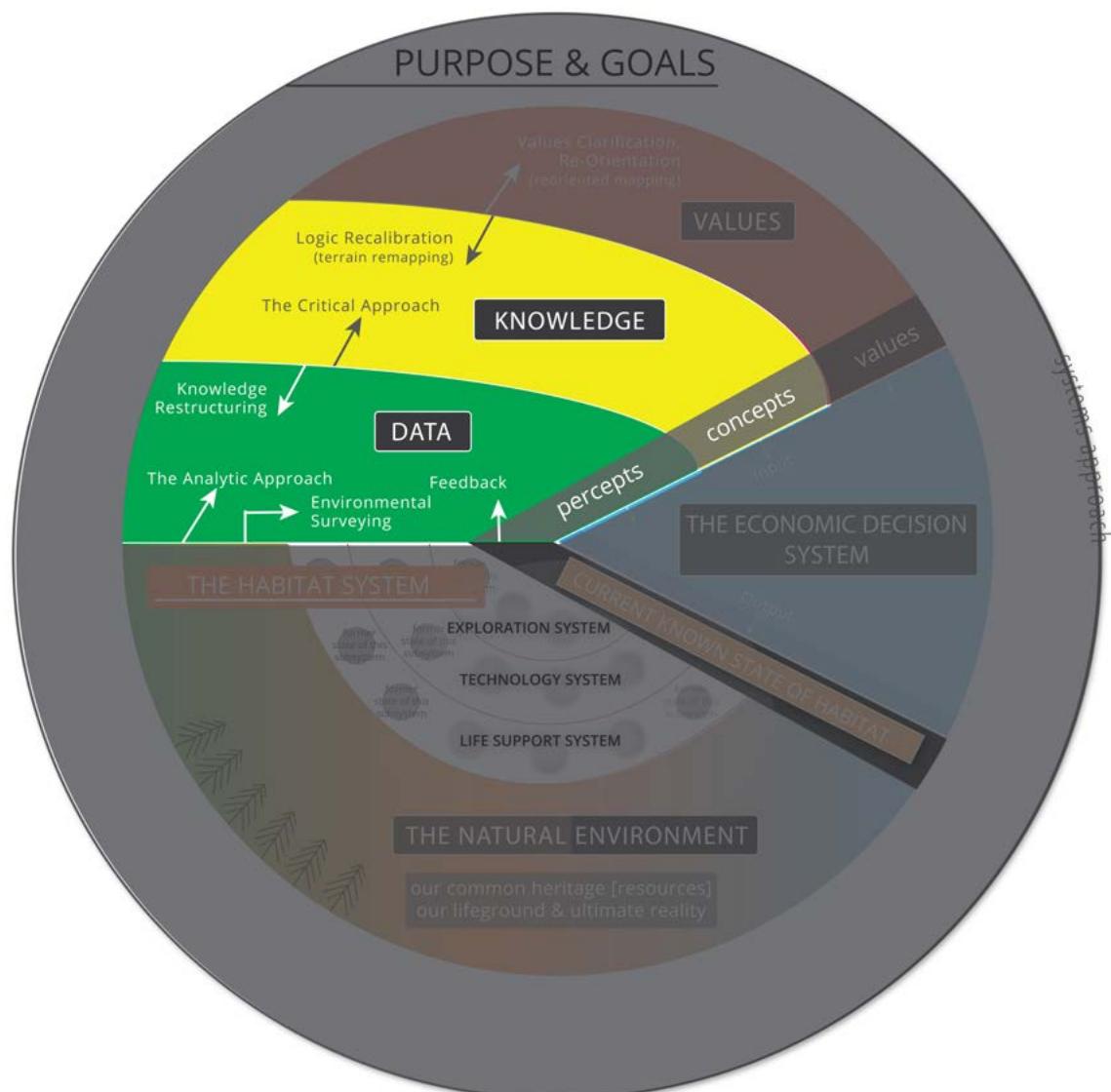
and experimentation we discover more about ourselves, our real world, and its existent cause and effect relationships. Controlled experimental [research] studies are an example of scientific inquiry.

2. **Environmental surveys** are conducted to inform the community's information model about the state of the environment. Two common surveys are: surveys of resources, their allocation and availability; and empirical community surveys that collect data about the needs and preferences of the community.
3. Data from electronic environmental real-time **feedback sensors** feed data [in real-time] about every systems of which the community is composed [excluding protected personal

information resources] into the Data Domain (Read: technological sensory feedback). There is a continuous feedback loop between our actions and the world. Here, our view of our selves is informed.

Wherein, verifiably conflicting data points call for more data and a re-evaluation of the models and measures used in the collection and structuring of the data. And herein, we are necessarily called to measure how much we are measuring.

If our sensors fail or we fail to recognize that our sensors provide data, then our actions are much more likely to be based on beliefs that are much less correlated with the actual environment, and hence, they are more likely to dis-align our decisions for a common intentional purpose. And, if our actions are poorly calibrated [to the factual environment], then there will be "miss-steps" in



**Figure 23.** Isolation of the data and knowledge domains (with the values domain less visible) as components of the social organization of information in the real-world community information model.

action, which is bad for our survival.

## 1.1 Philosophical data axioms

Axiomatic concepts are the foundation and precondition for objective data, information, and knowledge. They are irreducible and fundamental. They are a starting point for [scientific] reason. The very idea of objective data has axiomatic concepts built into it; every effort made to perceive facts depends upon concepts that must first be recognized. It is by means of these axiomatic concepts that individuated consciousness is capable of maintaining a state of conceptual awareness of data, information and knowledge as a continuous function of a purposeful orientation within a common reality. Axiomatic concepts represent the first layer of interconnection between perception and mental conception. It is axiomatic concepts that identify the preconditions of conceptual data, information and knowledge: the distinction between existence and consciousness, between reality and the awareness of reality, between the object and the subject of cognition. Axiomatic concepts are the foundation for the continuous conceptual orientation of the human organism in the real world. Data about the real world [system] is: understandable objectively (objective axioms, data), collected scientifically (scientific axioms, knowledge), and processed systematically (systems axioms, information).

In a real world information system there are three known types (or "value sets") of axiomatic conceptual recognition, related to data, information, and knowledge. Respectively, they are the conceptual axioms of *objectivity* (data), of *systems* (information), and of *science* (knowledge). These conceptual axioms provide a source for moral orientation and direction in a real world reality. Axiomatic concepts frame all contexts and understandings - they are the first universal constructs (or encoded abstracts) for the conscious visualization of reality. Herein, frameworks, contexts, and methodologies are regarded as fundamentals for conceptual existence in an information system - how do we come to know what we know (i.e., epistemology).

Without a recognition of axiomatic concepts all awareness, interpretation, orientation, and communication of data, information and knowledge become like the telephone game - where people overlay the source of existence with their own narratives, obfuscating the source and corrupting information pertaining to it. Possibly, something akin to "subjectivism" as described in the Social System specification. Hence, it is always important to perceive the original, the source, rather than copies, and to see it through accurate prototypical perception rather than egoic illusion and programmed belief. In other words, it is necessary to have self-awareness: to remain open to what is, to experience objectively without judgment, and to observe without filtration - to "take in" that which is with as little perceptual and cognitive distortion (i.e., biased analytical overlay) as possible.

When looking at objective data an individual is essentially looking at an identifiable aspect of conscious existence. Existence can either be perceived for that which it is or it can be perceived for that which it is not. Regardless, perception is not the totality of reality. The truth (as that which has occurred or is occurring) exists independent of perception. Perception is "how" an individual perceives those events occurring and "how" they are recorded for future posterity as data. The "how" can either originate from a place of axiomatic truth, or it can not. In either case, truth and existence are (Read: exist) independent of perception. Essentially, when broken down into its etymological roots, 'perception' means "to see through" - to see through the lens of the individual, seeing through their mind (and psyche) - to see through to that which is or is not.

Essentially, perception is a process of active interaction between sensory input and information that has been previously stored in the mind/brain and modeled by it. In other words we have ready templates of percepts which interact with sensory input; metadata are an example of this. Such schema may make the process of the recognition of objects very quick ('subconscious automata'). But, templates are not identical with sensory input, and hence, the mind/brain must compensate, to varying degrees.

The truth is something that has the possibility of being observed and sensed by every other being around it, even if it is not accurately sensed or sensed at all. If it is true for one person, then the perception and sensing of that, whatever the predicate of the subject, it has to be true for all - if it is not true for all, then it is not true for one. Things in reality have commonly identifiable *characteristics, attributes, and states / dynamics*. This is a foundational understanding for how we engage with our world and how we communicate [truthfully] with others. An inquiry into truth, a philosophical inquiry, eventually fosters a "natural morality" - a morality that recognizes the natural common needs of all ecologically related organisms.

So, the question becomes, is an individual "subjectively" seeing through to that which is objective, systematic and scientifically observable as true, or are they seeing through belief systems and other filters that prevent a perception that is accurately aligned with truth? Said in another way: to what degree does an individual resonate with the potential that may be resonated with? There are many different perspectives, but not every perception aligns with what actually has occurred, which is objective and independent of perception. Perception can be aligned with truth or it can waver widely from that actuality. Accurate perception involves the attuning of an individual's "perceptual axiomatic frequencies" to the truth such that perception comes into contact with truth with a high degree of frequency (i.e., very frequently) and only wavers from it slightly. In part, it is the work of consciousness to align its perceptions with the truth instead of choosing to remain in opposition to that which is by a refusal to accept truth, which may be emergently

known. It could be said that human beings ultimate work is to align perception with reality so that they have a more accurate understanding of the truth and are thus more capable of designing systems and arriving at decisions that align their behaviors and actions with true and verifiable fulfillment.

Herein, philosophy is a process of inquiring into truth, of uncovering and discovering truth. As we become more familiar with that which exists we become more capable of creating in alignment with our real needs. Philosophy is the continual process of engaging will (Read: determined intention) to discover that which is, to align perceptions to reality, and to create in alignment with that which is truly fulfilling, which is truthful[ly shared].

Belief exists in opposition to truth. When consciousness holds a belief, it is essentially just "going with" whatever perception it happens to have in the moment, or whatever it has been told by an accepted authority. Belief does not involve fact checking, it doesn't involve data, it does not involve verification, it doesn't involve an alignment with that which is, and it doesn't involve the attuning of perception to that which has actually happened and is occurring. Instead, it is [in part] a "runaway" imagination.

Imagination is important for it allows consciousness to envision and visualize (a) truth and (b) something different, something which is desired or desirable, and then facilitates creative action; but if imagination goes unchecked, then it can turn into naiveté, blind belief, and a rigid sceptical mindset. A "runaway" naive imagination involves the imaginative creation of "evidence" and the encoding of unverified structures of information. A lack of real evidence leads to thoughts, behaviors, and actions that may be quite out of alignment with real world fulfillment as they are not based upon that which is. Alternatively, someone who is "rigidly skeptical" has imagined something that is not true, and is attached to that imaginative belief such that s/he ceases to openly inquire; instead, such a person has this idea of "knowledge" that they are holding on to that isn't in alignment with that which is; yet, they are so imaginatively convinced that they are accurate that the so-called "knowledge" has become a total believed in paradigmatic system of understanding, an "-ism", to them.

In community, we do not think in belief systems. By recognizing belief systems we maintain critical thought and are sufficiently capable of designing systems that are thoughtful to our resilience and ultimate fulfillment. We are less interested in "what" is believed (although it is relevant) and more interested in "why", in substantiation.

When "you" use certain language some people can't hear "you", but that doesn't necessarily call for "you" to use different language. It may mean that the divide between what "you" are saying and what they are believing is too great for them to overcome [at the present time]. This gap or distance in [f]actual knowledge is sometimes known as an *inferential distance* (or differential difference). It is

the gap that needs bridging between a more coherent knowledge model and a more confused mental model of the real world.

Belief has nothing to do with that which is, which was, or with data. It has nothing to do with the ability to discover that which is, which comes about through systematic, critical and scientific inquiry into existence and truth. A belief system does not depend upon a process of inquiry, of discovery, of observation, of logic, of verification, and of synthesis into the understanding of that which has actually occurred. Instead, belief involves the process of developing or passively accepting [as given] imaginative "mental constructs" in an individual's own mind with no actual verifiable evidence to back up that constructed (or "fabricated") perception.

Belief and prejudice are similar concepts. They both conceptualize the idea that someone is prejudging, presupposing, or fabricating an opinion without sufficient inquiry, evidence, and validity. And therein, the beliefs of any one individual affect how s/he interrelates to others in society as well as to his/her own life/learning experience. What is believed is not the truth, otherwise it would not be belief. What is believed is not useful information, otherwise it would be knowledge. What is believed tremendously affects the perception and the experience of the truth and knowledge. Belief systems limit reality to a sub-set of the solution space that does not contain the answer to any real world problem.

"True believers" are people so completely captured by their belief that they can't think (or imagine) of their belief as a trap. True believers don't mind "a little inconsistency"; they just ignore it and go on. When "you" are a true believer "you" don't care if there is information to the contrary; "you" just deny it and go on. Yet, falsifiable evidence is not a thing to deny and go on, it's a thing to embrace and integrate, and move forward. Usefully fulfilling information gets ignored and humans experience suffering when evidence conflicts with true belief.

Ultimately, beliefs begin with someone not wanting (or having been conditioned not) to take on the personal responsibility to discover truth for themselves. Some people [for discoverable reasons] would rather listen to someone else and take that into themselves as a belief instead of remaining open to possibilities and looking at what actually is knowable for themselves. In "early 21st century society, where there exists a high degree of conceptual chaos (i.e., high entropy), any inquiry into truth requires a lot of challenging and diligent work. In early 21st century society, human minds, which would otherwise be used as tools for discovery and fulfilling creations, are highly controlled and have become like an atrophied and unused muscle. Herein, belief ends when open inquiry and self-respect begins, and the individual re-engages their will and desire to do the work to discover the truth for themselves while admitting when there appears contradiction.

All data about something (an object/entity) has to come from somewhere (the real world; space-time).

If information that consciousness uses to take action comes from beliefs and presumptions, then the resulting consequences of the action are likely to be as out of alignment with fulfillment as are the beliefs and presuppositions.

An objective, "natural law" philosophy, which facilitates the collection of objective data about the natural world by consciousness, involves three axiomatic subdivisions (or branches). The three subdivisions of this type of philosophy are:

- 1. Metaphysics** - the world as it exists, the world around us, what is (objective reality, entity). What there is to know? What is real? What are the axioms of reality? How may one acquire knowledge until one has established that there is reality to know?
- 2. Epistemology** - we are conscious of existence (percept, concept, reason, and logical). The study of knowledge, or more exactly, the ultimate nature of knowledge and how it is acquired. How do you know what you know? How do we know things, and how do we know they are valid? What are the requirements of [living] things in reality?
- 3. Identity** - things are what they are (non-contradictory identification). Identity references something specific [in the real world]. How do you identify what you know? What is error and how is it minimized? Identity concerns both metaphysics and epistemology as the identification of [axiomatic] reality and the identification of knowledge.

The purpose for the an objective, natural philosophy is the discovery of truth and "correct" moral action, as that which is logically and empirically aligned with human (and ecological) fulfillment and flourishing, through the non-contradictory identification and logically verified conception by consciousness of that which exists. The term 'natural philosophy' may be used to pertain to the work of analysis and synthesis of common experience and logical argumentation applied toward the explanation and description of nature (i.e., natural synthesis by logically integrating the experiences of consciousness). An objective philosophy has a basis in nature (existent reality), which is based in truth and it is not made or caused by humankind. Objective reality is not a construct that exists only in the minds of human beings. An objective philosophy involves an inquiry into that which is inherent and objective in nature, and may be perceived, but is not perception. It seeks to identify those existing conditions in nature that are both binding and immutable. Thus, its discoveries are considered binding in the sense that it doesn't make a difference whether someone believes in them or not, or even understands their operation [or not], consciousness is and will still be held under its (i.e., natures technical) effects regardless. It is not within

a human beings power to change these discoverable conditions (or "universal technical principles"), they are always in effect and they are unchangeable by anything that anyone is capable of doing. This is a philosophy that seeks to discover the immutable and not man-made, binding conditions that act as the ordering principles and "governing systems dynamics" in the world, which have use in designing more fulfilling habitat systems. When this form of philosophy is practiced habitually, it facilitates an individuated consciousness in remaining in [frequency] synchronization with the existent source [system] dynamics of reality.

Epistemologically, the formation of axiomatic concepts is an act of abstraction, a selective focusing on and mental isolation of metaphysical fundamentals; but metaphysically, it is an act of integration—the widest integration possible to humankind; it unites and embraces the totality of someone's experience. From the perspective of source reality it involves the letting go of all abstracted attachment and a stepping into (or reconnecting to) the universal flow of all of existence.

Most concepts that people use in discourse are contingent on some other preceding thing (i.e. concept) that has to be accepted, whether it is realized and has been accepted or not. For example, the concept of 'blasphemy' has no meaning if you don't believe in a divine authority. The concept of 'leisure' or 'holiday' (as defined in early 21st century society) has no meaning unless work is alienating.

Generally in philosophy, reduction occurs along two parallel lines: on the one line consciousness can reduce assumptions, and on the other consciousness can reduce concepts. The axiomatic method is a way to reduce assumptions used in a theory to a few basic principles. Reducing assumptions means that they are derivable from other assumptions; reducing concepts means that they are definable from other concepts. Eventually no further reduction is possible [with the given information available], leading to the emergence of axioms and "primitive" concepts. Primitive concepts are those which are not defined given the information available. Therein, the purpose of axioms is to describe some inherent part of the underlying conceptually structured nature of the real world, accepting that the world has [levels of] structure. Axioms are useful in describing a class of structures, as well as in describing a single structure, though only incompletely.

The axiomatic critical thinking structure is composed of an ordering of meaning:

- 1. Axioms** (a.k.a., first principles, foundational principles, universal property principles, core assumptions, basic assertions).
- 2. Data** - the raw signal.
- 3. Information** - where the raw signal has meaning.
- 4. Knowledge** (and visualization/communication) - where the meaning can be shared and used to do

something useful.

A **data axiom** is an irreducible conceptual state expressed in the form of a concept (or proposition) that identifies the origin (or source) of data about a common real world, and it pertains to any further statement of that data, such as those of information and knowledge. In other words, a data axiom is a [conceptual] statement necessarily contained in all others about data, whether any particular communicator chooses to identify it or not. In other words, the objective data axioms also pertain to all objective information and objective knowledge.

'Axiom' is a term of logic and it means an irreducible truth (or proposition) that cannot be proved by means of analysis because all means of proof and evidence depend on this proposition. In philosophic discussion, these axioms become propositions that cannot be argued against and are not a matter of arbitrary choice. They are something that an arguing party would have to accept and use in the process of any attempt to deny them. Here, it is necessary to recognize that not every true statement of a system can be proved by deductive reasoning from other statements, or there would exist infinite regression. These primary (or source) statements and principles on which all others are based, and from which the others are "proved", are known as axioms.

As Rand (1990: 55) explains:

*"Axioms are usually considered to be propositions identifying a fundamental, self-evident truth. But explicit propositions as such are not primaries: they are made of concepts. The base of man's knowledge—of all other concepts, all axioms, propositions and thought—consists of axiomatic concepts. An axiomatic concept is the identification of a primary fact of reality, which cannot be analyzed, i.e., reduced to other facts or broken into component parts. It is implicit in all facts and in all knowledge. It is the fundamentally given and directly perceived or experienced, which requires no proof or explanation, but on which all proofs and explanations rest. The first and primary axiomatic concepts are "existence," "identity" (which is a corollary of "existence") and "consciousness." One can study what exists and how consciousness functions; but one cannot analyze (or "prove") existence as such, or consciousness as such. These are irreducible primaries. (An attempt to "prove" them is self-contradictory: it is an attempt to "prove" existence by means of non-existence, and consciousness by means of unconsciousness.)"*

In rational philosophy, axioms are perceptual self-evidences. Conscious organisms in their pursuit of useful, objective data about the real world [toward the intention of well-being] necessarily require a set of axiomatic concepts that describe their interaction with the source from which their data originates (a useful relationship and context).

In concern to axioms and fallacies, there is the "stolen concept" fallacy refers to the using of a concept while denying the validity of its requirements (or "genetic roots"). There is absurdity in arguing against a position when the argument depends upon that position.

A data axiom refers to a fact of reality about the system from which the data was derived. It is ascertained by observing the fact that it cannot be escaped, that it is implicit in all data, and that it has to be accepted and used even in the process of attempting to deny it.

When someone declares that axioms are a matter of arbitrary choice, and proceeds to choose complex, derivative concepts as the alleged axioms of their alleged reasoning about data, one can observe that their statements imply and depend on *existence*, *consciousness*, and *identity*, which they profess to negate, but which are smuggled into their arguments in the form of unacknowledged, "stolen" concepts. "Stolen concepts" are an indication that an individuated consciousness has not performed the process of conceptual reduction sufficiently to become aware of those concepts underlying the concepts they are using.

*Existence*, *identity* and *consciousness* are the axiomatic values of objectivity; and hence, all objective data. They provide an objective framework for the experience and "correct" interpretation of all data. Data acquired under the value conditions of objectivity maintains the attributes of identifiably existent entities and events in the real world, which have a probability of being comprehended by consciousness qualified by the accuracy of the other identified structures used to know it - how do we come to know what we know? Forming a coherent awareness of primary facts is one of the crucial epistemological functions of axiomatic concepts. It is also the reason why they can be translated into a statement only in the form of a repetition (as a base and a reminder): Existence exists; Consciousness is conscious; A is A. This converts axiomatic concepts into formal axioms. An axiomatic concept (argument or proposition) does not "prove" that the objective data axioms of existence, consciousness, and identity are true. Instead, it is only an individuals unobstructed experience that they are axioms at the base of all data, information and knowledge, and thus, inescapable.

The axiomatic philosophical logic of being [in the context of data] includes:

1. Consciousness - It comes into presence.
2. Existence - It is always present.
3. Identity - It moves through presence.

*Question: If consciousness, identity, and existence, and their corollaries, are not axiomatic conceptual propositions for all data, information, and knowledge in a given society, then what are the axiomatic concepts that inform said society's information structure and all if its framework decisions.*

'Existence' is objective, perceptually self-evident, incontestably true, implicit in all knowledge, and conceptually irreducible. It is a challenge to identify a starting point which does not assume the truth of the axiom of existence.

The objective concepts of existence, identity, and consciousness are axiomatic in the design of the social organization of the Community - they are paradigmatic propositions for the adaptive alignment of the orientational value state of the Community toward a fulfilling purpose in the real world. They are presupposed in all cognition, as well as every communication and decision. Individuals that acknowledge these concepts have a level of perceptual cognition that may be said to maintain some form of accurate alignment with the objective characteristics of reality.

It is relevant to note here that the most important question for language bias is whether a concept description language is universal or whether it imposes constraints on what concepts can be learned subsequently. This is relevant because the integration of some concepts and their spatial orientation to other concepts in someone's cognitive schematic model has the potential to set limits on the future integration of more accurate conceptual understandings. If you consider the set of all possible examples, a concept is really just a division of that set into subsets.

Yet, the inaccurate integration of information subsets often leads to obscurity and confusion in the integration and understanding of the system as a whole. Wherein, a universal language is one that is capable of expressing every possible subset of examples. Therefore, it must originate with axiomatic concepts that are universal, and in particular, the axiomatic concepts of objectivity, of systems, and of science to remain sufficiently open and universal to all of real world existence so that existence as a whole system may be perceived and worked within.

Axiomatic concepts are epistemological guidelines. They sum up the essence of all human cognition: something *exists* of which I am *conscious*; I must discover its *identity*.

Additional comments on data axioms include:

1. The standard test for calling two objects the same is **Leibniz's law**: if they are the same, then whatever is true of one is true of the other and whatever is false of one is false of the other. Herein, reductionism's mistake [in identification of that which exists in consciousness] is to confuse a *necessary condition* with an *equivalence*.
2. An **axiomatic concept** is not [identifiably] reducible within epistemology. That means it does not have any other propositions or concepts which are necessary to understanding the axiomatic concept. An axiomatic concept is therefore also one of the first-level concepts, whose meaning is established by its reference to an existent (as opposed to another abstraction).

3. For everything that exists, including consciousness, it is always valid to inquire into how it works and what it is composed of; division rests within composition through the process of 'synthesized reconciliation'.

**QUESTION:** *What does the data suggest is the optimal and most truthful arrangement and structure of that which exists?*

### 1.1.1 Existence

**INSIGHT:** *To wholly understand the world, the world must be looked at as one inclusive [whole] information system.*

The concept of existence, as a singular unit, is undeniable and inescapable. If you are reading this you are experiencing the reality of existence, as well as the data of existence, at this very moment - regardless of how you might be choosing to perceive it - you are sensorially perceiving the signatures of existence with degrees of identifiable accuracy and you are doing so with some degree of self-initiated intention. In any logical structure of systematic concepts and propositions there must be some universal or source starting point (possibly a more encompassing multidimensional system).

Existence is implied in every percept; if it is not, then it is a possible falsehood. The concept of existence is irreducible since it pertains to everything that exists, including mental content, all other concepts, material reality, and all entities which have never been and maybe never will be directly observable. That said, there exists a subset of existence, the real world, and this is our common conscious reality involving natural and discoverable phenomena not composed of chaotic mental constructions. This is the real world that our Community exists within, and it must be accounted for if human fulfillment is sought.

What example can we find of something that is absolutely true at all times and all spaces? The first thing that may come to mind is the axiom of existence: existence exists. Since the concepts 'time' and 'space' presuppose existence as the underlying metaphysical precondition of their meaning, any time must take place sometime in existence, just as any space must exist somewhere in existence. The fact that existence exists is true at all times and all places; although, some things exist in the real world and some things only exist in the minds of those who believe they exist; and, an "objective view" looks at all of this existences as that which exists.

Through existence comes a world space and through a world space comes an [identifiable] 'decision space' that feeds back possibility into the world space creating a navigable environment - a space where consciousness may take choices and cause the world to more greatly respond to our thoughts, for consciousness has that potential as it more greatly understands the nature of the space it is working (or otherwise, being) within.

The identification by consciousness of that which exists in the real world is the first step in turning data into information. Things which exist in the real world have commonly identifiable signatures. Consciousness has a potential [probability] for recognizing these existent signatures and integrating them into the information structures by which it arrives at decisions that lead to greater or lesser entropic coherency and fulfillment. Herein, data allows consciousness to experience patterned space where decisions that are arrived at by consequence lead to greater and lesser states of potential fulfillment.

If it exists, then a basic corollary is that it must all integrate. In order to exist, there must be a larger technical conservation of the ecology - there is a discoverable technical integration that leads to greater states of powerful thought-responsiveness. We must think about how the entire universe can seem to be both physical, yet not made of solids, but of probability distributions. In other words, if we know that there must be conservation in all relationships of all sorts, then how do we both embody and accord with that understanding? What are we doing to improve both ourselves and our community in that regard? We are all transparent in this sense - we all integrate into a commonly identifiable existence.

**NOTE:** *Imagine if someone said existence exists isn't a primary since it can be reduced by every existent that makes up existence. This is a basic circular argument since what is known, is being confused with, how it is known.*

### 1.1.2 Consciousness

**INSIGHT:** *"You" can become conscious of what consciousness is, because you are conscious. Because consciousness is 'now' (i.e., an immediate thing), and you are it, the only way you can know what consciousness is, is by you being conscious of it. Which means, a scientist can't do it for you.*

Consciousness is observed as a self-initiated goal-oriented response[ability] (SIGOR) to an environmental[al challenge] through the active perceptual conception of a living entity -- the generation of an em-bodied sensory awareness with a decision space. Herein, biological action is a fractal of consciousness, it is a self-initiated goal-oriented response. The body is [in part] a highly attuned and adaptive sensory array that interfaces our consciousness through with an environment to which we become a part.

Consciousness is an aware and self-modifying system, and hence, it can evolve itself. Consciousness can put in effort to make better choices to produce lower entropy. It takes effort (work) to lower entropy. There has to be input to run counter to entropy. Therein, consciousness can evolve itself through effort. Consciousness can also de-evolve through lack of effort or through poorly directed effort. Critically, a system (e.g., consciousness)

that does not understand its environment, and its relationship to that environment, may not understand the value, or the dangers, of self-modification.

Consciousness is awareness that takes choices; it is a choice making awareness (Read: "I am, and I choose this rather than that"). If there is the ability to take a choice, then there is some degree of freewill. For any choice, there is a "before the choice" and an "after the choice". If anything happens, now and then (before and after), then there is time. Hence, consciousness, free will, and time must logically exist for any of them to co-exist. Therein, consciousness evolves by ordering its bits, and as it orders its bits it can do more work (i.e., can accomplish more activities). There is usefulness [to consciousness] to the organization of information.

There is always a decision space when there exists an identifiable consciousness. There is a signal of data in existence that consciousness can identify [through embodied sensation] and use to construct; and through its experience, it feeds back information. Therein, the verifiability of existence is common to all consciousness.

Consciousness is axiomatic precisely since all proof starts with it – You cannot know something without first admitting you know anything. It commits one to no other physical or metaphysical claims. Conscious means being aware of something and the ability therein to self-reflect. To say conscious doesn't exist is self-refuting. Consciousness is essentially a phenomenon of information. Axiomatically, consciousness formation given the information available will integrated into a unified whole so that it is impossible to divide into independent parts. That reflects the experience that each instance of consciousness is a unified whole that cannot be decomposed into separate components. (Tegmark, 2014)

Consciousness identifies its existent environment through the naming of unique observations by conceptually relational patterning (by "fractaling"). Identifiable things (i.e., things in existence of which data is gathered) have properties, attributes and characteristics, and behaviors that become interrelated and more meaningful in a compiled and more completely integrated information system (through emergence). Therein, human individuals are capable of identifying existent objects through cognition after the experience of perceptual data from their senses and collective instruments from the existent, real world. All consciousness is consciousness of something. Consciousness has an object[ive challenge for adaptation and growth]. In some respects, consciousness is the distinction of past from present - time, the iterative identification of that which exists by consciousness and initiates the structuring of a potential space of decisions. In this sense, consciousness is a type of information system.

An information system is made out of bits, which are the smallest piece of information. Bits are a yes or a no, a 1 or a 0. If all the bits are random, the system has no information. Random bits carry no information,

but if the bits are ordered, then the entropy of that information system is lowered. If the bits are not only ordered, but also made meaningful and/or useful [to consciousness], then consciousness lowers its entropy. In a sense, consciousness is itself an information system.

Entropy has two general aspects:

1. Entropy is a measure of disorder. If order is increased, organization is increased and entropy is lowered.
2. If entropy is lowered in a system, then that increases the system's ability to do work. Through order there is a greater ability to do work.

In order to create information in an information system the bits must be ordered and the order must mean something. To raise the entropy the bits must be randomized.

When things are identified and organized, then consciousness immediately begins to feel less overwhelmed for it can perceive the landscape that it is navigating through, what it has to work with, and what the next probable step or action toward fulfillment might be. Most "next steps" (i.e., navigation) are easy once sufficient data about the terrain has been collected, correctly identified, and sufficiently integrated - the solutions to decisions (and hence, problems) "unfold". The folding and unfolding of protein structures might be a good metaphor here.

It is only consciousness that is capable of conceptual errors and "perceptual blindness". It is only consciousness that needs a special identification of the directly given, to embrace and de-limit the entire field of its awareness -- to de-limit it from the void of "unreality" (or delusion) to which conceptual errors can lead.

Consciousness has an awareness of itself and its thought processing. There is introspection with consciousness. There is a space between stimulus and response. When that space is attenuated or even non-existent (as when fear and greed are present), then it could be said that one does not have "conscience", that one is of a "lower consciousness", or that one is not [internally/intellectually] free. But again, these are labels, and so they are imprecise descriptions of that which is occurring.

One might ask, what can consciousness do? Principally, consciousness can re-focus its intention and its attention; it can re-direct and re-orient itself as space-time iterates. Syn-chronously, consciousness (the mind-body) can experience, think and identify.

Within the real world there is the potential for life experience [by consciousness]. The very existence of data opens a 'pattern space' for consciousness - a space where identifiable objects maintain the potential for having deeper and more meaningful similarity and interrelationship, a space for understanding, learning, and ultimately, evolution.

**INSIGHT:** *There is no learning by consciousness without [the identifiable] data [of existence].*

### 1.1.3 Identity

**INSIGHT:** *The only meaning that a concept has is precisely the difference between it and everything that is not it.*

Existence and consciousness reconcile through identity. Identity is the first form of integration; it is the *reconciling force* in the Three Forces Model that is detailed in its full description in the Social System specification. The reconciling force integrates and "balances" the other two forces (as existence and consciousness). In this application of the Model, consciousness (or will) is the *activating force*, and existence (or technically bounded reality) is the *restraining force*.

If someone doesn't "do" identification, and hence, integration, then they might end up in an unpleasant place where seemingly random and threatening information pops in from everywhere and nowhere, almost as if they were in a scary children's cartoon. When existence is not identified and integrated, then individuals end up with an amorphous blob of identities and relationships swirling around their psyche. By not identifying and integrating information accurately there will exist a discordance between consciousness and existence (its absolute environment) because the two are not being identified and reconciled - relationships become frustrat[ed/ing]. When we don't reconcile our differences in [value] orientation then there is the potential for frustration in our social relationships.

Also, if someone doesn't have a method for dealing with and otherwise logically organizing information in their mental model of the world, then the information will be integrated in a disconnected manner and its future access will consequently be inefficient. When identity is applied to action [in an information system], then there is probable causality and the potential for iterative prediction.

Without identification (as in, labelling and defining) people can think they are talking about the same thing and in actual fact be talking about multiple different things with potentially conflicting meanings. If you name something it is easier for to think about it and talk about it, while recognizing that names are constructions, and not the actual existing thing. Without accurate identification the probability of social conflict increases.

There are some significant rhetorical questions to ask in relation to identity:

1. How do someone relate anything to any other thing (i.e., identify relationships) without naming?
2. How do someone come to know anything when things do not have identifiable signatures or names?

**INSIGHT:** *In nature things neither hide nor*

*reveal, but signify [to consciousness].*

## 1.2 Perception and cognition

The human mind perceives things not perceptible by the five senses, including relationships, patterns, mathematical entities, and meaning in general. Human beings have real needs and the derivation of meaning from experience by cognition facilitates the more effective and efficient fulfillment of the real needs of the human organism. Wherein, it is a part of the role of cognition to collect and generate knowledge by synthesizing and testing hypotheses, by observing and exploring the stuff of existence, and by searching for a higher potential fulfillment by explaining and logically reasoning what [if anything] these observations and results mean to our evolution in the universe.

The human mind is capable of both experiencing the real world and penetrating into the conceptual space of formative ideas. The empirical can be integrated with the "ideal" (Read: abstract object or mental representation), to structure the facts of consciously identifiable experience into a larger context of meaning and a commonly fulfilling, purposeful direction. Physicist David Bohm calls this combination of relationships the "undivided wholeness in flowing movement". Gregory Bateson called it, the "pattern which connects".

Conception and perception are interrelated; when one is changed the other maintains the potential for change also. The human mind uses concepts to organize its percepts into an information set consisting of systems of knowledge (orienting) and systems of belief (disorienting). Both systems of knowledge and of belief represent conceptual frameworks. Thus, we can talk for example about the Aristotelian conceptual framework, the Newtonian, the Darwinian, the shamanistic, the Christian, the Islamic, the Buddhist, or the philosophical systems framework. Conceptual frameworks are systems of concepts used to organize and explain the occurrence and behavior of phenomena detected by sense data. Some conceptual frameworks are also paradigms (or "viewpoints"). A 'paradigm' is a way of thinking, which is often so ingrained in people's behavioral thought patterns that they aren't even aware of it. It is a set of the most fundamental conceptual relationships adopted by a population that maintains a shared approach to perception and to engaging with an environment. Paradigms might involve assumptions, concepts, values, and practices that constitute a way of viewing reality (i.e., a viewpoint) for those who share them, especially in an intellectual discipline. The 'systems paradigm' is one of the few, if not the only known paradigm that acknowledges the value of emergently open and active inquiry through a recognition that understanding about a system is derived from an inquiry, discovery, and integration into its supra-system through an approach that maintains a corrective feedback mechanism (i.e., material experience) and facilitates in the sustained emergence of a system of knowledge versus a system

of belief. To understand emergence means to recognize the potential for the appearance of new information, which allows for openness to new information. A deep understanding of the emergent nature of thought is essential for any individual to transcend his/her self-limiting and irrational thought processes and behavior. Essentially, 'emergence' facilitates in the individual the logical ability to appreciate when they are proved to be [verifiably] wrong, rather than feeling upset or angry.

It would still appear that consciousness can only know what its perceptual and conceptual processes (or "apparatuses") allow it to know. Hence, for an individual to remain in alignment with his or her higher potential s/he must seek accurate perceptual data and logical conceptual integration into knowledge void of bias and contradiction, and full of recognized patterns and context.

## 1.3 Logical reasoning to information

**INSIGHT:** *Community is a reflection of each individual having an abundance of accurate information about the whole.*

The process of *logical reasoning* takes percepts and integrates them into identifiable concepts for purposes of delineation, to find distinguishing characteristics and relationships in reality for use in reducing the entropy of our information systems and generating greater states of fulfillment and more fulfilling systems. This is not an arbitrary process, and to consider it as such undermines a human's ability to comprehend the existence of a commonly objective, scientific, and systematic reality. What exists is what we as a community have to deal with. If there is evidence of something we must have the courage in ourselves to address the unknown, to apply our observations and skills of identification and definition, our ability to recognize patterns, to dismiss the arbitrary and eliminate the noise so that we are left with a clear and coherent understanding of that which is; so that we may apply that which is toward decisions and actions that better fulfill our common needs (i.e., that which also is). Truly, this is what we are all looking for because it is that which allows us to act with self-confidence and maintain an accurate orientational alignment with a commonly fulfilling purpose.

Concepts and assertions must be capable of being reduced to facts. If they cannot be reduced to facts then why would a community base its decisions on them? The "risk" or unpredictable consequences of a decision increase as the absence of accurate information increases.

Reality exists independent of perception. There are approaches which may be used to determine what is truth and fantasy, what actually exists in the real world versus what is just a figment of someone's imagination. It is possible to follow the truth to wherever it leads. The systems approach is part of that process of discovery and integration. Regardless of what approach is chosen,

ultimately, humankind must align its perceptions with the reality of that which actually exists in the real world if there is to be any real world progress [beyond politics and power and authority and fear].

When someone states, "we cannot know the facts of reality", then metaphorically speaking, they are cutting a community off at the knees. If we cannot know the facts of reality, then we cannot learn and adapt. Herein, the fallacy of the stolen concept becomes salient. This particular instance of this fallacy makes a claim to the belief that human individuals cannot know anything for certain. Although this statement is said with absolute certainty, it must be asked, how can anyone be so certain, for one must apply the concept of certainty to assert a proposition that nothing can be known for certain? The word "certain" in the statement could be replaced with the word "absolute". The fallacy of the stolen concept consists of using a higher level concept while denying or ignoring its hierarchical roots (i.e., denying one or more of the earlier concepts on which it stands). Errors of this kind are widespread and are the intellectual equivalent of standing on an upper floor of a skyscraper while dynamiting all of the earlier floors. The statement that there are no absolutes is an absolute statement in itself, and thus, exists in a state of contradiction -- it cannot be coherently integrated and may lead to the corruption of someone's perception of that which really exists.

As a community we "arrive" at informed decisions using a systematic, analytic, and critical process, as opposed to "making decisions" via subjective human opinion. A pilot can have an opinion concerning his/her altitude; however, this is not sufficient to fly a plane carrying multiple people with a predictable degree of safety. When the pilot arrives at a conclusion about his/her altitude by consulting the Doppler radar readout on the aircraft's instrumentation panel, s/he will know exactly how far s/he is off the ground due to this collectively developed sense instrument, Doppler radar. Today, automated aircraft piloting systems (autopilot) fly and land many commercial aircraft. Most "new" aircraft have 'autopilot'. Therein, Doppler radar is incorporated as a sub-system of a larger collectively developed and formalized automated decision system known as autopilot (with degrees of functionality and complexity). Now, apply this same thinking to the way in which a digital, technological community might organize itself socially and economically. What weight does opinion have when compared to the availability of observable, factual data, which provides someone's cognitive reasoning with an accurately informed decision space? Surely, an opinion is just that, an opinion. If it was based upon fact and data with a real world referent, then it wouldn't be an opinion. As such, when it comes to a social orientation in a finite habitat opinions serve as nothing more than a means to state a perspective. An opinion exists merely as a temporal stance prior to the receipt of verifiable data. Ideologies are wholly composed of opinionated information. A philosophy aligned with the logical integration of reality seeks to filter opinion.

The logical organization of information is important to our well-being as a community, for without it we might drown ourselves in repetition and confused oblivion. We might create and repeat things that continuously generate states of suffering and inflict suffering on others.

*"Objectivity is both a metaphysical and an epistemological concept. It pertains to the relationship of consciousness to existence. Metaphysically, it is the recognition of the fact that reality exists independent of any perceiver's consciousness. Epistemologically, it is the recognition of the fact that a perceiver's consciousness must acquire knowledge of reality by certain means (reason) in accordance with certain rules (logic). This means that although reality is immutable, in any given context only one answer is true, and the truth is not automatically available to a human consciousness. It can be obtained only by a certain mental process, which is required of every man who seeks knowledge—that there is no substitute for this process, no escape from the responsibility for it, no short-cuts, no special revelations to privileged observers—and that there can be no such thing as a final "authority" in matters pertaining to human knowledge. Metaphysically, the only authority is reality; epistemologically, it is one's own mind. The first is the ultimate arbiter of the second. The concept of objectivity contains the reason why the question "Who decides what is right or wrong?" is wrong. Nobody "decides." Nature does not decide—it merely is. In issues of knowledge, man does not decide, he merely observes that which is. When it comes to applying his knowledge, man decides what he chooses to do, according to what he has learned, remembering that the basic principle of rational action in all aspects of human existence, is: "Nature, to be commanded, must be obeyed." This means that man does not create reality and can achieve his values only by making his decisions consonant with the facts of reality."*

*- "Who Is the Final Authority in Ethics?". The Objectivist Newsletter, Feb. 1965, 7.*

## 1 The data domain

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**APHORISM:** *To truly understand, one has to understand what the data (e.g., the numbers), are telling one, without advertising.*

The *Data Domain* functions to identify observable, measurable, and calculable elements of the natural, existent real world and place them into an emergent and initial information structure for functional access by the community, and in particular, the *Knowledge Domain*. The Data Domain's internal structure represents that of an organized and digitized information system for data (i.e., a 'data management system'). The Data Domain involves the identification of data from existence, and the processing of that data into a structural formation for meaningful access and orientational usefulness by consciousness.

Generally, 'data' are a description of empirical facts or observations in the form of identifiable signs (symbols, signals, or signatures) about phenomena; they are the objective facts of reality. A fact is an undeniable observation. A fact is a verbal statement that expresses a relation [of high certainty] between two or more named objects or events. The fact is the effect that we measure. Data are the recorded facts (as attributes or variables) of events, entities, states, relationships, or conditions in the real world. Data is the product of 'research and discovery', and it may or may not be devoid of context, meaning, or intent.

A single piece of data (a 'datum') has little potential for meaning unless the context from which it originated is also understood. A datum (singular of data) is a discrete and communicable reference point to (or descriptive representation of) an event, entity, state, or condition in space-time as the first [identifiable] indicator that orients [consciousness within a common existent reality]. Accurate and timely data is vital for a community that seeks to arrive at decisions that facilitate its continuation and adaptation (i.e., resilience). The Data Domain involves the collection and structuring of data about systems (the real world; the habitat; and the habitat service systems), which is later organized into a system of knowledge through common data processing methods. Data about systems is collected objectively through the methods of science, filtered through critical thought, and put toward the design of new and more fulfilling systems that more accurately express our fulfillment and reflect our nature in the real world. Through data we adjust our orientation as individuals and as a community.

To navigate together using data, the following information sets are required:

1. Semiotics: The iterative process of generating and applying intelligence through data.
2. Data: The symbolic representation of sensations and measurements.
3. Information: The relationship among data

elements.

4. Knowledge: The meaning of the relationships among the data elements.
5. Stakeholders: Those affecting and affected by the data.

In concern to science and data processing (a.k.a., data manipulation), altering data for use in science is only acceptable if:

1. The original data set is preserved,
2. An explanation is provided for how the data set was modified.
3. A reason is given for why the modified data set was created.
4. A description is given for how the modified data set is being used.

The Data Domain involves a long list of processing activities for data with the purpose of collecting, structuring and ordering data into the information space known as "knowledge". Some common collection activities in this domain include: gathering of parts (content); surveying; testing; researching; capturing; discovering; sensing signals, observation and measuring; trial and error; and exploring. The structuring and ordering of data can include a multitude of processing activities, such as calculating, collating; grouping; linking; connecting; aggregating; categorizing; comparing, sorting, associating, relating, clustering, and classifying. Where applicable these processes provide an initial re-organization of the data into a usable [information] structure (i.e., into 'knowledge').

People often use the terms 'data' and 'information' interchangeably. However, it is better to view data as "the raw referential signatures of existence" that are processed into knowledge-oriented information as an output of the Data Domain for access by other systems. Then, information can be defined as the set of patterns, or expectations, that underlie the data.

Here, 'information' may be viewed from two equivalent data-perspectives. First, information is data that have been structured into a "meaningful" and "useful" context for specific forms of access in a larger semantic information structure known as the Real World Community. And second, information is a pre-existing structure in the real world that data [with degrees of accuracy] describes and references. In both cases, information is composed of data that have been given a functional meaning by way of the identification of existent relational connections between data, information, and knowledge. Essentially, when facts are put into a context and combined within a [patterned] structure, then information [which was always present] emerges into the awareness of consciousness. Herein, consciousness is capable of identifying and measuring between that which it has awareness of. In other words, information is data in some form of a patterned

and [measurably] meaningful structure (i.e., data "information"). Information and knowledge are a data construction (herein, "con-" means together with a structurally defined purpose, iterative prediction and our fulfillment). Also, 'data' describes information in a discrete manner - it describes that which it is referencing, and it is essentially referencing information.

Everything is information for there are always associations in the real world, even if they are not recognized. And, the data is there, we may just not be experiencing it. Information "resources" (digital resources) are data -- in a digital system, information is composed of individual units called "bits". A bit (binary digit) is the smallest unit of data that a computer can process and store. A bit is always in one of two physical states, similar to an on/off light switch.

'Data' is bits of information collected to more greatly understand the real world information system and to facilitate the design of community systems that more accurately orient toward higher states of fulfillment. In general, the process of turning data into information involves the identification of similar relationships and patterns between data, information, and knowledge. And, when information is validated and placed into a more cohesive and useful context, then knowledge [of the objective and real world information system] emerges. What is the purpose of science if not to discover what identifiable 'tasked objects' exist in the real world?

Herein, it may be interesting to note that relational information systems (e.g., a relational database) can generate data from the data stored within them. This fact is one of the reasons why the human species is presently seeing the exponential growth of data about the world in which it exists. It is possible to computationally simulate (and synthesize) information from relational information (which is a redundant thing to say). Fundamentally, all data can be tested in simulation.

Data is the first input in an information system [as the first indicator that orients within a system]. Hence, any method for handling information must first account for the data of which the information is composed. The three methodological approaches described in the Social System specification (i.e., the systems methodology, the scientific method, and the trivium method) all account for data first, or they account for data synchronously with other inputs.

The Data Domain correlates [in part] with the general grammar stage of the trivium method, which involves the gathering of data prior to any other logical, critical, or exploratory thought, and prior to inductive logical thinking and reasoning. The gathering of data under the general grammar stage of the trivium method includes the processes of observing, collecting, recognizing and identifying, categorizing, associating, and relating data from an environment.

There are four system-level aspects to data in an information system:

1. **Data availability** – The data exists (or does not), and existing data remains accessible (or available) to the system.
2. **Data collection** – Data is collected via any number of different means, which the system uses to remain in a state of equilibrium and functional adaptation.
3. **Data processing & Structuring** – The processing of data into a structure for coherent integration by the system.
4. **Data as information** – After data is processed and converted to information, its new structure is more complex, more ordered and less entropic (if the data were accurate).

Scientific data are usually "subjected" to data processing in the Data Domain during which:

1. Their form is aggregated, structured, patterned, and otherwise organized.
2. Their content is analyzed and statistically evaluated.
3. They are placed in a proper context for later access.

Within the data domain, data processing occurs. Here, data processing involves the identification of implicit, previously unknown, and potentially useful information from data.

Data domain processing include, but are not limited to:

1. **Data categorization**
  - A. Do categorization (set/group pattern recognition).
2. **Causal understanding**
  - A. Look at an object and identify its causal properties.
  - B. Do connections between data to produce understanding.
  - C. A societally mandated module that demands that you figure out the consequences of your actions.
3. **Causal encoding**
  - A. Look at a process and identify its causal properties.
  - B. Do connections between understandings to produce orientation (i.e., values, objectives).
  - C. A societally mandated module that demands what to minimize and what to maximize. What are the goals and what are the goals to be rejected.
4. **Decision system (data extends into the decision system)**
  - A. A computation design module that generates a new system state based upon demands.

The processing of data leads to the initial structuring

of data into 'information' in the Data Domain. There are four primary data processes (or data processing techniques) that accomplish this functional task:

1. **Classifying** - a [problem] process of assigning a data object to one of several pre-defined categories based upon the attributes of the object. In general, in classification you have a set of predefined classes and want to know which class a new object belongs to. This process is sometimes known as *classification learning*.
2. **Clustering** - a [problem] process of grouping objects based upon distance or similarity. Clustering tries to group a set of objects and find whether there is some relationship between the objects. A cluster is the resulting collection of similar or same items from acquired data.
3. **Associating** - a [problem] process of identifying any association among features between [data] objects, not just ones that predict a particular class value. This process is sometimes known as *association learning*.
4. **Relating** - a [problem] process of relating new object [data] instances whose class is unknown to existing ones whose class is known.

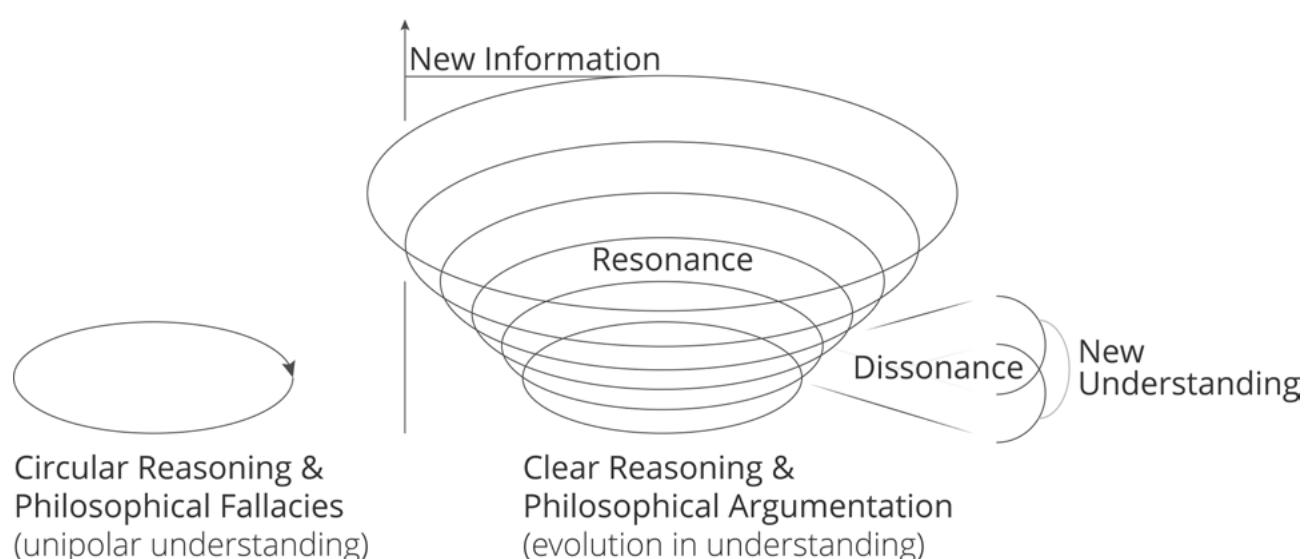
The processing of data [through logic to derive critical understanding] involves three general sub-steps:

1. **Filtration** - data is filtered after gathering to ensure relevance and accuracy.
2. **Correlation** - data is mutually related by context.
3. **Analysis** - data is inspected, cleaned, transformed, and modelled with the goal of discovering

[relationally] useful information, suggesting conclusions, and supporting decisioning.

The characteristics of data include:

1. **Accuracy** - The accuracy of tourism statistics is the degree to which the data correctly estimate or describe the quantities or characteristics they are designed to measure. In general, accuracy can be characterized in terms of errors in statistical estimates and is traditionally decomposed into bias (systematic error) and variance (random error) components.
- A. **Validity** refers to whether a data collection tool or concept truly captures what it is intended to measure. In other words, a variable or measure is valid if the values estimated are close to the true values.
- B. **Reliability** of data refers to whether the instrument or source of the data would produce consistent results under identical circumstances regardless of who uses it.
- C. **Precision** refers to an aspect of the reporting of data, or of statistics or indices derived from original data and is not, in itself, an intrinsic quality of the original data.
2. **Timeliness** - The timeliness of tourism statistics refers to the delay between the end of the reference period to which the data pertain and the date on which the data are released and available to the public. This dimension usually involves a trade-off against accuracy. The timeliness of information also influences its relevance, as



**Figure 24.** A philosophical argument evolving into greater awarenesses of understanding positioned in contrast to the process of circular reasoning.

- accurate data that are not timely are of limited usefulness.
3. **Methodological soundness** - The methodological soundness of a data source refers to the application of international standards, guidelines and good practices in production of tourism statistics.
  4. **Coherence** - Coherence reflects the degree to which the data are logically connected and mutually consistent, that is, they can be successfully brought together with other statistical information within a broad analytical framework and over time. The use of standard concepts, classifications and target populations promotes coherence, as does the use of common methodology across surveys when relevant. Coherence has four important subdimensions:
    - A. Coherence within a data set implies that the elementary data items are based on compatible concepts, definitions and classifications and can be meaningfully combined.
    - B. Coherence across data sets implies that the data are based on common concepts, definitions and classifications, or that any differences are explained and can be allowed for.
    - C. Coherence over time implies that the data are based on common concepts, definitions and methodology over time, or that any differences are explained and can be allowed for
    - D. Coherence across countries implies that the data are based on common concepts, definitions and methodology over countries, or that any differences are explained and can be allowed for;

## 1.4 Information

**INSIGHT:** *The information must exist in the information system if action is to be coordinated that necessary involves that information.*

Information is data in some contextual formation (after re-integration). Effectively, everything is data/information. To separate data and information, it is possible to state that information is data that has been processed, analyzed, and presented in a form that facilitates decisioning. In the market-State, actionable information is known as "intelligence"; where, there is political intelligence, business intelligence (competitive intelligence), military intelligence, etc.

### 1.4.1 Information constructor theory

*A.k.a., Task-based construction of information theory.*

The basic principle of constructor theory is that all fundamental laws of nature are expressible entirely in terms of statements of which tasks (i.e. classes of physical transformations) are possible and which are impossible, and why. This is a new mode of explanation, intended to supersede the prevailing conception of fundamental physics which seeks to explain the world in terms of its state (describing everything that is there) and laws of motion (describing how the everything changes with time).

By regarding counter-factuals ('X is possible' or 'X is impossible') as first-class, exact statements, constructor theory brings all sorts of interesting fields, currently regarded as inherently approximative, potentially into fundamental physics. These include the theories of information, knowledge, thermodynamics, life, and of course the universal constructor. In constructor theory tasks are performed by constructors. Possible tasks are those which physics allows the presence of a constructor. A constructor is an object that can perform a task and retain the property to perform it again. Basically, it is everything that can do something and retain the property to do it again.

This theory says that the way we describe the world is in terms of transformation. In this transformation, there is something that is changed (a substrate) and something that changes it (a constructor). And, those are the two fundamental conceptual elements for the presence of creative physical processes. Here, we realize that information can provide instructions to coordinate the transformation of a substrate (which is itself, a task).

An instruction is information that is acting as a constructor. Of course, in the real world there are only approximations to the idea of constructors [because there is a continuum]. And, knowledge is one of the best approximations of a constructor as it gets preserved [because it is an abstract constructor]. DNA might be considered a constructor for it provides instructions to a cell [as to what to do] to build certain chemicals and so forth. When all the unnecessary details are identifiably abstracted away you are left with something that has to do with information that acts as a constructor and that is acted upon by the environment.

If a task, a transformation, is impossible, then there is a rule that makes it impossible. If there is no rule that makes it impossible, then it is possible. There is no third possibility. What does possible mean? In the overwhelming majority of cases, though some things are possible because they happen spontaneously, things that are possible are possible because the right knowledge embodied in the right physical object would make them happen. Since the dichotomy is between that which is forbidden by the laws of physics and that which is possible with the right knowledge, and there isn't any other possibility, this tells us that all evils are due to lack of knowledge. It claims that the whole of science is to be formulated in terms of the difference between transformations that are possible and those that are impossible, and there isn't a third possibility.

Also, 'task information criteria' describe short-term, locally measurable effects which relate directly to a [transformation] process.

*"There's a notorious problem with defining information within physics, namely that on the one hand information is purely abstract, and the original theory of computation as developed by Alan Turing and others regarded computers and the information they manipulate purely abstractly as mathematical objects. Many mathematicians to this day don't realize that information is physical and that there is no such thing as an abstract computer. Only a physical object can compute things."*

- David Deutsch

## 1.5 The smallest amount of data

An information system is made out of bits, which are the smallest piece of information. Bits are a yes or a no, a 1 or a 0. In other words, a bit is the smallest unit of information in an information system, represented by a single binary digit 0 or 1. The smallest amount of information consciousness can have is the answer to a yes/no question. The outcome to such an inquiry can be represented as a [binary] probability spectrum (0 or 1 = 1 bit of information).

**INSIGHT:** *Information is not only conceptual, but also everything physical. Everything in the real world is information; the real world is an information system and there is also the potential for creating a software (digital) information system to manage the total information space.*

## 1.6 Data collection

Data collection is the process of gathering data for use in decisioning. In a socio-technical society, data collection happens at many levels. Data can be collected from one or more sources as needed to resolve inquiries and provide the information that's being sought.

The methods used to collect data vary based on the type of application. Some involve the use of technology, while others are manual procedures. The following are some common data collection methods:

5. Collection of data from information services.
  - A. Automated data collection functions built into internet-software (applications and websites).
  - B. Manual reporting by working group members.
6. Sensors that collect operational data from industrial equipment, vehicles, and other machinery.
  - A. Automated data collection functions built into machinery sensors and software.
7. Collection of data from habitat services.
  - A. Manual reporting by habitat team members.

- B. Automated data collection functions built into sensors and software.
8. Surveys, questionnaires and forms, which may be completed: online, in person, by call/phone, by electronic mail (email), or regular mail (postal mail).
9. Focus groups and one-on-one interviews.
10. Direct observation/experience of users (a.k.a., user feedback).

Well-designed data collection processes include the following steps:

1. Identify an issue that needs to be addressed and set goals for the project.
2. Gather data requirements to answer the inquiries or deliver the information solution.
3. Identify the data sets and sources that can provide the desired information.
4. Set a plan for collecting the data, including the collection methods that will be used.
5. Collect the available data and begin working to prepare it for analysis and integration in order to completely resolve the issue.

There are four primary types of data that can be collected:

1. **Object observation and naming (is object)** - is the name of the object (label of object; recognized by shape). Data about and naming of objects can be collected.
2. **Quantitative data about object(s) (is count and mathematics)** - is numerical (includes a count). For example, quantity, price, percentage, etc. Data about the count of objects can be collected, and mathematical computations can be performed on counted data to provide further [mathematical] data.
3. **Qualitative data about object(s) (is static concept)**
  - is descriptive in nature (includes properties/characteristics) For example, color, smell, appearance, texture, etc. Data about the descriptive characteristics of objects (static concepts) can be collected and visualized.
4. **Process data about objects (is dynamic concept)**
  - is explanation in nature (includes visualization objects moving and concepts on a graph). Data about the movements of objects can be collected and visualized.

### 1.6.1 Evidence

The "gold" standard of "evidence" of causation is randomized clinical or randomized control trials. Only experimental, controlled and falsifiable (or, interventional) studies can verifiably demonstrate

whether a particular activity is the cause of something. Observational (or epidemiological, associational, correlational) studies may find an association or a correlation between a thing and an outcome, but they cannot say with statistical certainty that one is the cause of the other. Correlation does not necessarily imply causation. Empirical observation by itself does not prove or explain *how*. It shows spatial proximity, but does not prove causation; the scientific method demonstrates causation through its falsifiability and controlled [experimental] design.

The relationship between correlation and causation is a fundamental concept in statistics and research methodology. Correlation refers to a statistical measure that describes the extent to which two or more variables fluctuate together. A positive correlation indicates that as one variable increases, the other variable tends to increase as well. Conversely, a negative correlation signifies that as one variable increases, the other tends to decrease. Causation implies that one event is the result of the occurrence of the other event; there is a "cause and effect" relationship. Note that it is not possible to prove causation from correlation, but if it is shown that there is no correlation, that proves there is no causation. There obviously has to be at least a correlation if there is a "cause and effect" relationship. In other words, while a correlation between two variables does not inherently indicate that one causes the other, the absence of correlation is a strong indicator of the absence of causation. Causation necessitates correlation; if a cause-and-effect relationship exists, the variables must change in conjunction in some manner (positively or negatively correlated). Correlation alone is not sufficient to prove causation. Establishing causation requires further evidence that goes beyond the mere observation of correlation, typically involving controlled experiments, longitudinal studies, and the elimination of alternative explanations. Therefore, while correlation can suggest the possibility of a causal relationship, it is not definitive proof of its existence.

The concept of evidence in research is foundational to its integrity, ensuring that findings are reliable, transparent, and reproducible. The highest-level standard for research integrity, as mentioned, incorporates several key practices that are directly related to the generation, presentation, and evaluation of evidence. The highest-level standard for research integrity includes all of the following (adapted from: Nylenna, 2006):

1. Open data.
2. Open protocols.
3. Open code.
4. Pre-registration.
5. Version control.
6. Declared biases and conflicts of interest.

## 1.6.2 Socio-technical data structure (reality coherence)

*A.k.a., The techno-socio, techno-social, technoinformational-material, informatonal-spatial structure.*

There is an intertwined informational-material rope that composes whole data structure of human reality (Read: the real-world community model). A civilization/society exists in terms of a socio-technical structure (note: these are axiomatic dimensions):

1. **Techno-structure (materiality)** - the whole technology ecosystem of the society.  
A. **Infra-structure** - the whole technology "stack" by which the people meet their needs (the means of production and end products themselves; i.e., the habitat service production systems).
2. **Social-structure (information)** - collective agreement fields and social organizations that mediate it (i.e., the user's community profile).  
A. **Super-structure** - the values, beliefs, knowledge, needs, preferences, wants, ideologies, opinion, identities, and other influencing and mediating understandings of what is and what could be. In particular, what identity people have (or, associate themselves with) influences what information people pay attention to.

Changes in any of these structure influences and drive changes throughout; they inter-related and inter-influence one another.

## 1.7 Database

*A.k.a., The collection of data, ledgers of data.*

Data is stored in a database. Virtually all computer systems require a persistent storage medium of some sort, a database. Databases enable the effective management of information. Without databases it would literally be impossible to effectively store and track data, and trace all the relationships between various data items required by the multiplicity of applications that comprise computer-based information systems. The unified information system is a stored in a database. Applications and tasks, therein, will involve information being stored in the database.

Database coordination (a.k.a., database management) systems provide [at least] the following:

1. Organize data so that unnecessary duplication is avoided and redundancy is reduced.
2. Allowed many different applications to share

- common data is a secure and efficient
3. Isolate physical data storage and retrieval from the application programs that consume it.
  4. Provide concurrency controls and serialization methods so that shared data can be updated by multiple concurrent users or programs.
  5. Provide common authentication along with access control administration, enforcement, and logging for data and relationships.
  6. Enable concurrent transactions so that changes to data can be committed or "rolled back" depending on other conditions that might arise within the environment or the application program, etc.
  7. Provide detail audit trails that describe who/when/why, etc. data was accessed, modified, deleted, etc.
  8. Provide various indexing and query optimization techniques that make it possible for the volume and velocity of data to scale to the expectations and requirements of the modern enterprise, WWW, etc.
  9. Provide for distributing data across large computing networks because it is no longer possible for single, monolithic computers to handle modern data requirements.

**NOTE:** In market- and State-based information organizations, the database is often hidden from users.

## 1.8 Metadata

A.k.a., Meta-data.

Essentially, data is a discrete communicable reference point to an event in space and time. The reference point originated from somewhere and so it has some additional data accompanying it. This additional data is known as 'metadata'. Metadata represents the first structuring of data (or, pre-defined structuring of data).

All data must be accompanied by contextual auxiliary information if it is to be accurately structured, processed and accessed by other systems. This auxiliary (or additional) information that accompanies the generation and collection of data is known as 'metadata'. Metadata is information about [the meaning and context of] data - sometimes defined as "data about data". It is descriptive information about a particular data set, object, or resource, including how it is formatted, and [at least] when, how, and by whom (i.e., source) it was collected. In an information system, metadata is a standardized information descriptor for data - a "data descriptor" that allows for the processing of all data in that system. In other words, metadata accompanies data to aid in its interpreted explanation and processing. In the Data Domain, data is processed with its metadata to obtain more detailed information about the data in systematic association with other information. Activity in an information environment generates data, but it needs

to be in a workable format and accompanied by meta-contextual information for it to have usefulness and for it to remain accessible to the whole community.

**INSIGHT:** *It is the insight we gain, not just the data we gather, that makes a difference.*

The conceptual idea of "metadata" has been in use for as long as collections of information have been organized. And, metadata is an essential component of the engineering of information systems and of technological design in general. It involves the codification and description of data in a standardised manner; and hence, it allows for the system-wide interoperation and openness of data.

Metadata can originate from one of two sources: (1) it can be automatically derived from the digital resource itself (as *intrinsic* or *implicit metadata*), or (2) it can be created and associated with a resource by human beings (*extrinsic* or *explicit metadata*). In other words, metadata may be generated automatically using software or it may be entered manually by an individual. Through the use of digital technology, data may be easily collected, stored, structured, and communicated using electronic or other media that self-generates (Read: self-populates) or facilitates in the generation of metadata to provide an initial propositional context for structuring the data inside the Data Domain.

The process of formally standardizing metadata is three-fold:

1. Metadata models (or schemas).
2. Metadata semantics.
3. Metadata syntax.

Technically, metadata has three basic sub-types:

1. **Structural metadata** - describes the containers of data (i.e., the format of data). **Structural metadata** describes the physical and/or logical structure of an information resource to facilitate relationships between or within resources.
2. **Descriptive metadata** - describes the content of the data (i.e., metacontent). **Descriptive metadata** describes the content of an information resource and is used to find, identify and understand a resource. Descriptions involve qualifications.
3. **Administrative metadata** - describes data management. **Administrative metadata** facilitates the management of information resources through elements such as version number, archiving date, and other technical information for purposes of information management and preservation. It is used to manage the creation, use and preservation of the resource (includes technical and preservation metadata).

Together, these metadata types facilitate in the identification and retrieval of data as a 'resource', 'record' or 'log'. These are not always discrete sets of metadata, and there is often a considerable overlap.

Metadata facilitates the association of data and can describe any number of data association signatures, including but not limited to:

1. A data source.
2. A process(es).
3. An event.
4. An organization.
5. A particular collection of data (a file or a database or a table in a relational database or a class in an object-oriented database).
6. An instance of data (in a relational database table, object instance in a class within an object-oriented database).
7. Data associated with the values of an attribute within a domain, or the particular value of an attribute in one instance.
8. Metadata can also describe data models.

Metadata has clear purposeful usage in:

1. Describing data for the purposes of data exchange.
2. Describing data for the purposes of system access from query (including update) to optimise recall and relevance.
3. Describing data for the purposes of query optimisation.
4. Describing data for the purposes of upstream information integration and explanation.
5. Describing data for the purposes of correct analytical processing or interpretation, representation or visualisation.
6. Describing the data to overcome multi-linguality and multimedia heterogeneities.

All of these purposes require that the data be described:

1. Such that the resource is constrained formally (i.e., identifiable via a standard structure) to ensure integrity [in communication].
2. Such that the resource is reachable by directed and automated means (i.e., searchable and retrievable).
3. Such that there is sufficient description for purposeful usage of the output - input data, output information (i.e., it is useful).

In order for data to remain useful and accessible over time its structuring must be updated and corrected. Most of the updating and correcting of data structuring over time actually involves changes to data's metadata as opposed to the data itself (although it might conceivably involve changes to the data).

## 2 The knowledge domain

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**QUESTION:** *Without facts, upon what is there to base knowledge (i.e., upon what do we base our knowledge without facts)? Knowledge may be said to be the "mental grasp" of facts.*

The Knowledge Domain functions to identify a greater complexity and understanding of relationships and patterns in information from the Data Domain and integrate them into a relational, logical, and systematic knowledge structure (a "semantic web"). This structure defines the forms, functions, and principle processes of the real world. Herein, data about systems, which has been collected through empirical and experimental means, is organizationally integrated and otherwise structured into a 'system of knowledge' for useful access by the Community, and in particular, the Values Domain and the Decision System Domain. Accurate and timely knowledge is vital for a community that seeks to arrive at decisions that facilitate its adaptation and dynamic fulfillment. Knowledge is all about an accurate representation of reality (i.e., it is a representation of reality with high certainty). In a way, knowledge is simply actionable information developed over time, and with a specific certainty rating. Information with known degree of certainty, informed by science (scientific information), and useful for action (actionable information). The Knowledge Domain represents the humanity's most current and comprehensive understanding of itself and the real-world (a.k.a., reality) within which it resides. Herein, knowledge is discovered over time.

**INSIGHT:** *Society ought to be organized according to scientific knowledge about how humans are most optimally fulfilled.*

Note that among community, it is important to realize when someone has passed the limit of one's knowledge and has begun to conjecture, and that is not a failure. It is "ok", there is no punishment that will be inflicted if someone says the words, "I don't know". For individuals in society to act continuously based upon conjecture and presupposition is inefficient, and certainly, ineffectual for their own and everyone's fulfillment. And herein, it is important to recognize that if there is a topic about which no one knows anything and won't be honest in communicating that they don't know, that maximizes the degree to which people have opinions.

The Knowledge Domain involves knowledge, as highly structured and integrated information about the systems of which the real world community is composed. The Knowledge Domain involves the clarifying of perceptual and relational identities and the integration of object[ive] data and conceptual understandings by individuals, instruments, and systems in the real world into a more cohesive and useful model for orientating and for deciding as a community.

The term knowledge refers to a set of emergently corrected and objectively identifiable conclusions about

the real world. Knowledge is a structurally and relationally organized collection of facts, truths, or principles that explain the experiential and consequential probabilities of relationships in existence, it has predictive properties, and it results from the integration of information generated by inquiry, discovery, perception, and fundamentally, experience into the existent. Since knowledge explains [in part] real world systems, it is therefore useful in designing, developing and predicting the behaviors of systems it [correctly] describes.

Knowledge is communicated through conceptual language. Visually, knowledge is represented by a semantic (relational meaning) and syntactic (logical arrangement, rules) network consisting of concepts (nodes) and links (edges). Nodes represent objects and edges represent relationships. Hence, concepts are definable by their internal attributes and external relationships.

Knowledge is an emergent organizational resource commonly informed by individuals and systems in the Community. Knowledge is "more integrated" data or "highly informed" information, and it has significance beyond its mere presence. Better knowledge results in better decisions, better actions, and better performance. Knowledge has meaning to an entity with a decision space for its usefulness in optimizing predictions and decisions in the systematically spatial and relational world where the entity with a decision space exists. Knowledge comprises of everything that data comprises of (facts, observations, and asserted perceptions) structured into a complex relational model (also known as map, schema, mental model, connectome, or concept model, among others). It is relevant to note here that such models are evaluated by their ability to explain the existing data within a self-consistent and coherent system reflective of the real world by some probable (and predictable) degree.

When a model is tested and it "hits a roadblock" (i.e., its logical prediction does not align with what was expected in 'negative feedback'), then there is the appearance of a boundary in the information landscape of our understanding of our resolving of that which exists. Some strategies, those of adaptability and resiliency, see this as an opportunity to optimize the knowledge structuring of themselves and society. A gap in our understanding may be overcome through learning. Often, the key to understanding is casting out belief (or "false knowledge"). The idea that knowledge is "justified belief" is a contradiction in terms. If something is reasoned and "justified" with verifiable evidence, then it is not a belief. In other words, if something is reasoned and verified, then it is not a belief. When there is understanding then there is useful forward movement and accurate navigation (i.e., once you have the understanding you can move forward). Efficiency in this sense, involves a self-initiated, goal-oriented strategy toward a new model of reality with a higher potential [structural platform] for navigation and re-creation.

The derivation of knowledge from observed data

requires the application of processes. The Knowledge Domain involves a long list of processing activities with the purpose of structuring, ordering, and patterning representations of reality into a single, unified, and increasingly accurate 'knowledge model' of the real world. Some common structuring and ordering activities include calculating, synthesizing; analyzing; reasoning, critical thinking, relating; identifying; connecting; logicizing, contextualizing, and ordering. Where applicable these processes (and methods) provide a complex re-organization of information into an integral (as systematically cohesive) information structure (i.e., knowledge). Knowledge typically involves the logical processing (and structural patterning) of information to obtain a meaningful and probable indication of trends or patterns in data. Together, these activities are the mechanisms by which data is [more greatly] structured into knowledge. It is also relevant to note that the quality of any knowledge stored in an information system must be maintained by the continual processes of correcting and updating the knowledge, its structure, and the process by which it is derived, as more information becomes available.

Engineering academic, Milan Zeleny, stated in 1988 that, "While data and information are piecemeal components, partial and atomized by their very nature, knowledge and wisdom are "holistic" concepts, related to and expressed through systemic network patterns and thus integrative by definition." (Gupta, 1988) A more simplistic view of knowledge considers it as the highest level in a hierarchy with information at the middle level and data at the lowest level; a hierarchy that "openly reflects reality. Also, according to this view, knowledge refers to information that enables "informed" actions and decisioning.

It might be of interest to also note that in the corporate and government "intelligence industry", actionable information which policy makers "are said to use to make decisions" is called "intelligence". This type of "intelligence" is not equivalent to 'intelligence' in the real world. 'Intelligence' in the real world isn't information that some so-called authority uses to make subjective decisions; instead, it is the ability of consciousness or some technical entity to pattern recognize and to process information into a more accurately aligning decision space. Intelligence describes the processes a system goes through to synthesize available information. Intelligence could be perceived as a continuum representing the quality of the processing of information - leading to states of low entropy and high integration, or states of high entropy and confused, contradictory integration (i.e., not-integration; "litigation").

Fundamentally, consciousness derives and verifies knowledge from experience. Knowledge starts as an observation by consciousness and its refinement allows for the material creation of useful technologies for consciousness. Technology is the product of knowledge. Therein, humanity can use knowledge to address its global and common needs. Individuals may more greatly

understand themselves as they more accurately model the universe within and through which they exist, while creating systems that align with their value coordinates, which are explained by their knowledge base, toward a direction of commonly understood fulfillment. Therein, knowledge has the potential to dispel fear embedded within consciousness for humans have a tendency to fear that which they do not understand.

Regardless, knowledge is the resulting integral structure of a specific set of system processes. When intelligence is low and the system integration processes are of low quality, then the resulting knowledge structure will be of poor quality, and it will not mirror real world; hence, decisions and conclusions made or arrived at from this poor quality model are likely to direct consciousness away from fulfillment, which requires actual knowledge.

In a community, knowledge is a collection of useful information about a predictably existent reality placed in a "pool" (or commons) for common access.

Knowledge is the result of a particular type of inquiry. In order to arrive at useful decisions and to correctly orient, 'why' questions about oneself and the real world must be asked. 'Why' questions [about systems] are answered through synthesizing and assimilating (integrating) the results of multiple 'how' questions into a unified model with some degree of "certain[ty]" alignment with the real world. Effectively, knowledge answers 'how' questions and provides an indication of 'why' [often with a degree of statistical certainty]. If all knowledge were the conclusion of a proof, then we would have an infinite regress, void of any starting point, void of the real world (i.e., subjectivism).

Knowledge of the phenomenological world describes at least "mechanisms of action" in the phenomenological world. A 'mechanism' is a systems process that drives or influences the outcome of a perceptible event.

Research into phenomenological mechanisms reduces uncertainty in a species's information system and it facilitates the evolution of technology for that species. In many cases, human scientists have tested, analyzed, and examined theories so thoroughly that their chance of being wrong is infinitesimal, which doesn't mean to say that there might not be more to know about them and their relationships. Other times, uncertainties linger despite lengthy scientific research. In those cases, scientists make it their "job" to explain how well something is known. When gaps in knowledge exist, scientists qualify the evidence to ensure others don't form conclusions ("claimed knowledge") that go beyond what is known. Even though it may seem counter-intuitive, scientists like to point out the level of uncertainty. Why? Because they want to be as transparent as possible and it shows how well certain phenomena are understood. Certainty provides focus, power, decisiveness, action, and orientation. And, uncertainty allows for openness, possibilities, and ultimately, humility.

Buckminster Fuller defined the idea of "wealth" in terms of knowledge, as the "technological ability to protect, nurture, support, and accommodate all growth needs of

life." His analysis of the condition of "Spaceship Earth" caused him to conclude that at a certain time during the 1970s, humanity had attained an unprecedented state. He was convinced that the accumulation of relevant knowledge, combined with the quantities of major recyclable resources that had already been extracted from the Earth, had attained a critical level, such that competition for necessities was not necessary anymore. Cooperation had become the optimum survival strategy. "Selfishness," he declared, "is unnecessary and henceforth unratinalizable ... War is obsolete."

Knowledge is both *a priori* and *synthetic*. It is *a priori*, for it goes beyond what is merely given to sensation or to empirical perception -- it reflects reality with a degree of probability, both material and conceptual. It is synthetic because it adds an explanatory unification and useful structural composition to the merely given -- it becomes useful for navigation. An organization and unification of knowledge leads to a single philosophic and scientific body of knowledge -- a single, unifying information system in some sort of probabilistic alignment with the system from which it was sensed (or perceived).

The degree of unity, consistency, or relatedness among entities in a system is a matter to be consciously ascertained. Natural sciences presuppose that there is a unifying system that is universally true and can be known through structured inquiry, through a "process of being, doing, and having". The task of individuals (i.e., scientists in community), if they so choose, is to continuously discover information of the unknown and to build accurate knowledge models [of reality] so that a community's actions coherently lead to greater states of fulfillment.

Knowledge is a continuous and incremental process of integration toward ever greater understanding. Knowledge may guide the direction of a society and the design of its systems. If a community seeks to maintain an alignment of its information structures with actual reality (the real world), then the community's knowledge and understandings must remain emergent and subject to update as new data, information, knowledge, and value is acquired (or becomes available). As the community's understandings change so too must any and all theories and designs based upon the old concepts (i.e., the information and decisioning systems must be updated in its designs for our habitat). To stubbornly cling to old outdated systems when newer, more scientifically accurate studies and discoveries disprove their usefulness [in sustaining fulfillment] is unwise. The gaps we perceive in reality are just gaps in our understanding. The belief that science already understands the nature of reality in principle (i.e., scientism) is delusional and is not scientific. Science is a tool for coming to understand that which existed, exists, and may exist.

Knowledge has no value judgment, it is neutral. Any value judgment upon commonly verifiable knowledge is a projection of oneself (a possible state of the self-reflecting "ego"). The more these judgments are inspected, the more they are found to be projected

aspects of the self (i.e., psychological projections).

The Knowledge Domain has some similarities with the discussion section of a scientific research paper, and of the body of knowledge known as 'science'. The discussion section of a scientific research paper is a sapient exercise in logic, brevity, and clarity. The discussion section involves the identification of logical relationships between that which was known and that which is newly known, as well as conveying a deeper understanding of the results of the research; at the very least it involves logic and critical thinking. Generally, the discussion section is the most useful part of a research report and helps readers to integrate and understand the implications of the findings (i.e., data and percepts). It often elaborates on how the results fit into the larger theory or system, and it may or may not place the findings in the context of a value system, a moral orientation toward fulfillment and better decisions. Of note, for effective access by the community, the language in the discussion section of a research paper must be clear and unambiguous, otherwise technological engineering would be impractical.

At this very moment humanity is seeing the exponential growth of technology through the growth of knowledge at a real-time, global pace.

The purpose of thinking is [in part] to identify knowledge so that we can orient ourselves in the real world and meet our real needs. Knowledge might be seen figuratively as "getting onto the same page", so we can meet our common needs. That is why we use language; we use language to commonly identify.

We can come to rationally conclusive identifications and understandings about issues of interest. And, we can design our systems in conceptual/digital form and arrive at logically probable solutions prior to iterative technical creation. Through transparency of data and logical simulation the world appears more clear to us and we may freely navigate within it.

**INSIGHT:** *There are many inquirers who have come before "you" and have added to the common pool of knowledge that "we" collectively hold as humankind, and there are many who will come after "you". If "you" have accomplished anything it is only by standing on the shoulders of others; for in order to accomplish that which "you" have there were many who came before, and "you" may help the many who come after (or, "you" may not if you do "not" share).*

## 2.1 System-based knowledge

Data about real-world systems are organized into a 'system of knowledge'. The real-world is organized into systems, and hence, all knowledge [about the real-world] is systems-based. Systems maintain [at least] hierarchical and contextual relationships, and hence, knowledge about systems has both hierarchical and contextual characteristics. In concern to the hierarchical nature of knowledge, for example, consciousness must

know of chairs and tables if it is to also integrate the concept of furniture -- into a complex material system that provides a functional architectural structure for the needs of individuals. Conceptual information (i.e., concepts) are built upon and develop into hierarchical systems of knowledge that become increasingly unified the more knowledge is learned about them. Knowledge cannot exist as disconnected bits on a flat plane, where one data point has no relation to another, where everything is non-relational, and thus, out of [embodied] context -- we are operating in a total information system.

Both the idea of a *hierarchy* and of *context* signify a more complex structural relationship between bits of information about a commonly experienced system. The implication exists that there is a larger interrelated system (or "reality") within which discoverable and identifiable things have knowable interrelationships.

A hierarchy of knowledge might be visualized as a body of data points, concepts, relationships and principles structured in order of logical dependence, one upon another, according to each item's distance from the base of perceptual data and any "pre-cognition" with which cognition accepts inputs. Moving down the hierarchy involves conceptual and assumptive reduction, as well as sensory attunement and possibly sensory re-mapping.

The hierarchical view identifies a particular kind of cognitive relationship: one that has an inner structure of logical dependence, rising gradually from a base of "first-level" items. Herein, logical reduction is the means of connecting an advanced knowledge to reality by traveling backward through the hierarchical structure involved (i.e. identifying in logical sequence the intermediate steps that relate a cognitive item to perceptual data). Please note that the logical process of reduction is not reductionism - incorrectly reducing causes to a variable of the overall cause, which is not the cause, possibly through [emotional] attachment or [psychological] belief. Reductionism can often be manipulative in nature, for when it is done in a sophisticated manner it can appear to prove a point by concealing and misdirecting logical relationships. It is "reductionist" to apply a "reductionist example" to a larger and systematically more complex situation.

In concern to context, knowledge has relationships at every level. Knowledge is an organization of claimed similarity with the real world, each unit of knowledge relevant to and bearing on the others. Knowledge is not a juxtaposition of independent items; it is a unity. All units in reality are interconnected, and nothing is a completely isolated fact, object or system. In a knowledge system the term 'context' means "the sum of cognitive elements conditioning an item of knowledge." 'Context' sets an item's relationship to situational reality, and thus, the item's meaning and potential use. *Remember that meaning never comes from the system itself, but its supra-system.* Contextual relationships must never be dropped for a system to be understood and for systematic solutions to be adopted. Without *interconnectedness, relatedness, and wholeness* (the axiomatic conceptual values of systems),

information is disconnected and has no potential value to a real world decision space, and it is not systematic. Similarly, without *consistency, evidence, and openness* (the axiomatic conceptual values of science), knowledge has no basis and also has no potential value to a real world decision space, and it is not "scientific".

Unfortunately, context and hierarchy are often disregarded in early 21st century society in favor of the belief that consciousness cannot relate one thing to another thing in a non-contradictory, logical, and unifying (i.e., integrated) way. Without an integral approach to the discovery of knowledge and creative design, which involves non-contradictory identification and logical pattern integration, it becomes difficult to ferret out reality and truth against falsehoods; it becomes difficult to create in alignment with fulfillment -- consciousness stumbles (or, thrashes) around its environment [without a unifying relational model] instead of flourishing with and having the knowledge to caretake (or steward) for its environment.

Knowledge systems in accurate alignment with the real world account for the hierarchy and context of their knowledge such that individuals in a community might base their real world decisions on accurately structured information about the real world in which they live. Higher level concepts and understandings must be founded upon the facts of reality to be useful in structuring the arrival at decisions that generate states of fulfillment in systematic relationship with a community of individuals and systems.

To disregard the hierarchical and contextual nature of knowledge is a sure way to manufacture intellectual pollution and social discordance. In an information system, information processes can generate more information about the system (i.e., processing units can generate information from information). To develop functionally useful community systems we must acquire more knowledge (or as much knowledge as possible) about how nature organizes life; this will facilitate our resiliency. And technically, the more accurate information a community collects, the more complex systems it can evolve.

**INSIGHT:** Once discontinuous integration gets started, it is tough to turn around. When 'merge conflicts' go unnoticed, then the whole information system starts to de-order.

## 2.2 Knowledge and power

Power is the ability to affect change. Knowledge is power, with knowledge there is the ability to take informed decisions, to predict and influence the world, to solve complex problems, and to empower oneself to navigate the complexities of life with confidence and competence. Knowledge is power, but it is also a limit, as one can only do (or at least do well) that which is known. Herein, more knowledge is more power, because knowledge conveys ability to change the environment intentionally.

The phrase "knowledge is power" encapsulates the idea that possessing information and understanding can provide individuals and societies with significant advantages and influence. Knowledge is power because it enhances understanding, and improves decisioning, problem-solving, innovation, influence, and overall empowerment. It enables individuals to adapt to their environment, achieve their goals, and contribute to the betterment of society. As a result, the pursuit of knowledge is a fundamental driver of personal and collective progress. Knowledge about systems is predictive in nature. Knowledge increases the range of understanding and of potential application. When consciousness has knowledge of a system, then it can utilize that knowledge to predict and to create. When power is defined as the ability to do work, then without knowledge, there is no ability to do work [in a particular system]. Not only is knowledge of something a useful representation of "power", but knowledge can be used against individuals as a form of power. Knowledge gaps [between individuals within a competitive society] can create power differentials that can be extremely caustic to society. In a society that neither understands nor values human potential, knowledge about human potential can become hidden behind paywalls and competitive façades.

**NOTE:** *The exploitation of gaps in knowledge has the potential for generating fear, which might then be exploited for energy acquisition and human resource management.*

Data and knowledge are not necessarily "power" in themselves, but they are a potential means to power. A differential in the dissemination of accurate information has the ability to create a differential in power. Ultimately, power comes from acting upon knowledge, and when knowledge is hidden or "occulted" from people, it is possible to keep them at a distinct disadvantage, influencing their mind and ultimately their behaviors for selfish agendas. In competition, accurate information provides leverage. In a system where information equates to leverage over others, then of course there will be establishments that seek to control information (e.g., industries and States). Fundamentally, the information we have available matters [to our fulfillment].

The "elite" maintain a power differential through the ignorance of the masses. When an individual's will is weakened through centuries of manipulation and attachment, then individuals might stop the acquisition and integration of knowledge at an early age, or they might be enculturated [en-cult-urated] to only accept and integrate [as much as possible] the "knowledge" of leaders, authorities, and power figures. This would represent a very unsafe social environment. And, the people trapped within it might not realize how unsafe it actually is because the "knowledge" they are presented with by the authority or some other uncriticizable leader might not provide any immediate indication of such.

In discussions on political matters we quickly find that

if we don't agree on what ethical foundations we have, then we don't get very far talking politics. And, when we have an ethical discussion we find out that if you don't agree on epistemology (Read: on how we know anything), then you don't get very far agreeing on ethics. And, epistemology in turn is based on metaphysics (Read: what actually exists). In truth, everybody in their own way has to work through the foundations of truthful understanding in their own self-initiated way. A community environment can facilitate the more rapid acquisition of this experiential quality of the self. Yet, if there is disagreement at the level of axiom, premise, and system [of approach], then two people are just going to keep talking past each other (i.e., coordination is not possible). If there is a difference in direction, orientation and approach, then there is a fundamental difference in the structure of the information being communicated between us, which will lead to confusion and may generate conflict. And herein, those who may desire a greater competitive edge (or concentration of power) are presented with the opportunity to take advantage of a situation with disarranged understanding and possible emotionally intense contention.

Summarily, knowledge is considered a source of power in the following ways:

1. Empowerment through understanding: Knowledge enables individuals to understand the world around them. It encompasses a broad range of information, skills, and insights. This understanding empowers individuals to make informed decisions, solve problems, and adapt to various situations.
2. Enhanced decisioning: Informed decisioning is a key aspect of how knowledge translates into power. When individuals possess knowledge, they can inform objectives, evaluate options, assess risks, and select the most suitable course of action.
3. Problem solving: Knowledge provides the information needed to address challenges and solve complex problems. People who possess the relevant information and skills can find solutions to issues that others might find insurmountable.
4. Innovation and progress: Knowledge drives innovation and technological advancements. In fields like science, medicine, engineering, and technology, knowledge enables breakthroughs that improve the quality of life and lead to societal progress.
5. Influence: Those who have knowledge have influence over those who do not.

**NOTE:** *Profit-driven entities competing in the market are building things with knowledge. Humans with common human needs and ecological relationships, are constructive creators, and can build things with knowledge too. Humanity can build structures to create and*

*sustain states of fulfillment, instead of structures  
to generate states of scarcity.*

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The Auravana Project exists to co-create the emergence of a community-type society through the openly shared development and operation of a information standard, from which is expressed a network of integrated city systems, within which purposefully driven individuals are fulfilled in their development toward a higher potential life experience for themselves and all others. Significant project deliverables include: a societal specification standard and a highly automated, tradeless habitat service operation, which together orient humanity toward fulfillment, wellbeing, and sustainability. The Auravana Project societal standard provides the full specification and explanation for a community-type of society.

This publication is the Social System for a community-type society; it is a standardized social system for the organized structuring of a mutually fulfilled social population. A social system describes the organized structuring of a social environment. A social system is a grouping of units of individuation (here, units of consciousness) forming a cooperative network in which information is shared and integrated through a whole, data structure. The term social system is used, in general, to refer to lifeforms in definite relation to each other, which have enduring patterns of behavior in that relationship. This social system standard identifies humanity's aligned interests, and that which everyone has socially in common. It is an organizing system for social navigation that specifies a direction, orientation, and approach to socio-technical life. The standard details the purpose for the society's existence (a direction), its value system (an orientation), and its approach (a methodology and methods). Herein, these concepts, their relationships and understandings, are defined and modeled. Discursive reasoning is provided for the selection of this specific configuration of a social system, as opposed to the selection and encoding of other configurations, and their consequences are evidenced. The social system provides a description of who humanity is, and where humanity is going, by identifying its social organization.

Fundamentally, this standard facilitates individual humans in becoming more aware of who they really are.

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