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Original Research Article

Plant and animal cell origin, divergence and reciprocity, stomal drive, the environment and evolution of the purpose of Creation

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Evagination or invagination of a primordial cell could account for the origin and maintained divergence of plants and animals, and account for their complementarity. The thesis proposed is that serial evolutionary trends or change affecting individual species did not occur in isolation, but in an allosteric way between species living in proximity. Plant development occurred with evagination of the cell by the extension of the cell into the environment, resulting in sessile growth and leaf development. Invagination resulted in free-living forms that give rise to animal development, as "stomal drive" necessitated mobility and cortical sense development, including memory, for energy acquisition and survival. Allegiance to the complementary basis of their origins is evident in the complementarity of form and functional reciprocity of animals and plants. This arrangement, which encompasses epigenetic change in response to environmental change, helps to maintain the constancy of the external environment (General Systems Theory), in which plants and animals live, reproduce and thrive. Being aware of context, i.e. environment present at the time, to which we respond and in which we function, is central to ethical development, honesty and awareness, as it is to physical and emotional wellbeing and evolutionary development. Through a General Systems Approach one can understand the duality requirement for life and evolution of Creation, and the importance of it, in terms of meaning and context applicable to the survival, let alone evolution, of Mankind.

Key words: Plants, animals, origin, divergence, stomal drive, evolutionary concepts and theory, "Improvisation" Theory of Evolution, Lamarckian Evolution, Eco-social© environment, diversity, context, Ethics, General Systems Theory.

1. INTRODUCTION

1.1 Invagination leads to animal development

Invagination is the enclosure within itself, by the organism, of a part of the available environment in order to obtain water and energy from it. Free-living forms derive from it, in which, Invagination or phagocytosis, foreshadowed the development of a stoma or mouth. Thus, cells that invaginated became animal like as mouth development or stomal drive[1], not only permitted, but also challenged, organisms to become mobile and develop senses and memory function to fathom their own prey or be warned and to see danger and escape, by any means, in order to survive. Capture of cellular responses requires sensitivity to consistent, long term conditions[2], and relative, short term, i.e. moment to moment and day to day variation[3] or environmental challenge[2,3]. Capture resulted in genetic development, which codes successful adaptation in eukaryotic organisms[2].

As organisms took to water or air, or climbed or burrowed underground their phenotypic appearance also changed to reflect their functional response in response to stomal drive. These included changing color with speed (chameleons), or combining stillness with changes in shape (Octopus) in defense and use of an ink cloud to get away or combining camouflage with speed of movement (Cheetahs, antelope) and/or other means of camouflage and combining ferocity with speed of movement, be it a rapid tongue movement to catch another insect or mighty movements of the paw and jaw. They developed the ability to learn, know and remember what determines poisonous and what does not in order to eat, or, prey, or get away, in order to survive. Thus, brains and memory capacity developed, including genetic material to code and be able to recall successful adaptive responses, such as cellular mechanisms and metabolic pathways, of the organism[2]. Adaptations that served a dual purpose, such as to eat with and defend, or prey, using a proboscis or teeth, enhanced the chance of survival, and which led to evolutionary change, if this was coupled with improved rates of fertilization and the ability of more offspring to cope in the new

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environment that can be gauged in terms of stomal drive. Reciprocal changes in plants or vise versa led to this change.

1.2 Evagination leads to plant development

Evagination occurs when a part of the cell protrudes into the available environment to obtain water and energy from it. By evaginating into the environment the cell became vegetative, sessile, with roots and plant like. These did not need to develop a defense or escape, in so far as plants became a universal food source as part of their function, and so did not develop pods as feet, or other means of escape such as color change. Rather in plants, adaptations focussed on reproduction. Color, and scent, is used to attract life to it to feed, which also serves pollination. Dispersal of seeds from pods that house them, instead of the development of escape mechanisms of the parent plant itself, are other features of plant development. Sweet nectar on sticky stamens served their reproductive design. It increased the pollination rate and attracted the insects that deposited the pollen while feeding on its sweetness. Insects and animals developed a sense of taste, including sweet, bitter, salty and sour, that determined their preference. Stomal drive in Animalia led to the development of a digestive pathway and excretory system. In plants, stomata development on the underside of the leaf controlled evaporative loss and thus the throughput of nutrients and fluid taken up by a system of roots. Leaves as well as fruit became food for free-living kinds to eat, and in seasonal rhythm, re-enriches the soil on which all growth depends. Whereas plants shed leaves, animals re-enrich the soil through primary leafy or plant intake or edible animal protein intake, as excrement, a cycle that begins with the development of taste and sweetness.

1.3 Application of vectors that determine plant and animal divergence

Were vectors able to be applied to evagination and invagination, vertical development would characterize evagination and plant divergence and development, whereas horizontal development would characterize invagination and animal development, as shown in Figure 1.

Although i will return to explain this Figure in more abstract terms as well, the axes represent the vertical and horizontal dimensions as well.

1.4 Allosteric interaction between plant and animal (free-living) species / forms

Current trends in species development have been to consider epigenetic and plasticity effects and their interaction within species. Plant and animal origin divergence is really a complementary effect. Each form a unit with a pair, a vertical and horizontal dimension, while variations of these form differences within and between species, to the left (invertebrate) and right (vertebrate) of the origin along the horizontal axis for animal development, above (fruit bearing trees) and below (vegetable) the origin and point of intersection for plant development, and perhaps along the vector at 90 degrees to both for winged insects, projecting behind and projecting forward, for birds. Each of these forms in a milieu, an atmosphere of fluid or gas, and in relation to the energy or plant source on which reciprocal development depends. On top of this is the predator / prey interaction on which the cycle of life as we know it depends, shaped by the stomal and oral mechanisms, including beaks or teeth, and ancillary adaptations or characteristics, such as chela or claws.

1.5 Development of diversity

In plant development, “stomata” that occur on the undersurface of leaves responded to environmental conditions that determined leaf texture and shape and plant diversity. Stomal drive[1] afforded the opportunity for animal development and diversity in response to environment change[1]. As a result, sensory awareness as well as motor activity and brains with memory[1] or functional mental capacity developed. That this memory or “sensory input” of environmental change could be encoded in genetic material or alter genetic mechanisms, both in animals and plants, has become a science of its own, as epigenetics[3], furthering understanding, and leading to acceptance of concepts of cellular adaptation and evolutionary design consistent with Lamarckian evolutionary theory[2,3], yet in terms of permanence and adaptation, the genome as “determined” and the epi-genome related responses and functions as “determining”.

This concept is similar to the concept of the written Law, as in the Five Books of Moses, which is constant and does not change [Deuteronomy 13.1], and the Oral Law, or commentary in the form of Talmudic exposition, which expands on it and shows its relevance in varying degrees and from differing perspectives and from time to time, as may be required when conditions change. It is the written documentation that has served to keep The People alive, in spite of the odds against such a veritable outcome, akin to the genetic code and the epigenetic variation in response to environmental change and reciprocity of plant and animal development.

1.6 Reciprocity of function

Plant and animal reciprocity is often overlooked, yet singular development of species, while focussing on detail, does so at the expense of context as well as the interaction contributed to by the uniqueness of each.

Meyerowitz (2002)[4] emphasized that studies of plants and animals yields more than either alone. Claude Bernard (1813-1878), renowned as father of physiology lectured on the life of animals and plants[5]. Indeed, we survive as animals only because we have a diet that includes plants. Plants grow and reproduce because pollination occurs by environmental means as well as by specific insect/bird/animal intervention or involvement, where form is complementary and function is reciprocal. Flowers attract insects that are the right shape and can fly to them, and birds have long beaks and flight that enables them to reach the places where they feed but also where they are needed. That ensures ongoing plant reproduction and that the food source of the pollinators continues.

1.7 Acquiring genetic material in plant and animal cell lines

It is possible that:

1a. A primordial cell ancestor contained prokaryotic genetic potential, and that evagination and invagination occurred at that time and that this material formed the basis of nucleic acids and protein in both, and that it was at this stage that divergence occurred. How the cell occurred is not known, so taking up of nutrient from the ground into a vacuole that developed is another view that could hold ground, and have led to plant like development. The development of another cell from this vacuole could have occurred to form a free living organism that developed roots by evagination and became plant like, or, that invaginated and became mobile.

1b. Divergence followed in terms of major reliance on soft RNA proteins and mechanisms and on hard chromatin, the former predominating in plant cell lines and the latter predominating in animal cell development[3].

2. Another scenario is that genetic development occurred first in evaginating cells, which were then taken up by prokaryotic cells that invaginated and thus acquired the genetic properties of the plant cell, and through acquisition of energy by invagination differentiated to give rise to animal development.

3. Transferable mitochondrial components may also have been acquired in either of these two ways.

4. It may be that following this the views expressed in 2000 by Meyerowitz[4] pertain. “One must conclude, then, that plants and animals may have evolved in quite different fashions. There is no doubt that they have independently evolved development, and this is demonstrated by the non homology of genes serving identical developmental functions in pre-pattern formation. There is nonetheless also no doubt that plants and animals have evolved from a common eukaryotic ancestor, as indicated by the clear homology of the genes that control the chromatin level of gene regulation. There is also little doubt that some developmentally important genes of plants, such as the ethylene and red light receptors, have derived from an event of horizontal evolutionary transfer specific to plants. And it is at least possible to think that the variation on which Darwinian evolution acts in plants results in part from phenomena that are not seen in animals, namely, the controlled appearance and Mendelian inheritance of epigenetically silenced genes. Genomic and genetic analyses of plants thus reveal a type of organism with familiar features, but profound differences from the more-studied animals. Only by further study of plants and of animals can we fully understand the differences between plants and animals, and consequently distinguish between those features of developmental pattern formation and cellular signaling that are necessary aspects of complex organisms, and those that are accidents of evolutionary history.”

5. What of prenuclear, prokaryotic development, before the advent of genetic material per se? [2] Do epigenetic patterns provide a clue to pre-genetic development and to the differing characteristics of plant and animal evolution and development?

6. Do epigenetic patterns provide a clue not only to pre-genetic development and to the differing characteristics of plant and animal evolution and development, but of their reciprocity, and relationship to energy source for survival and reproduction, and escape, which is the theme of this hypothesis?

7. Is reciprocity the basis not only of genetic and epigenetic mechanisms but the unifying theme permitting functional interaction, diversity and ecological / eco-social©, development in the natural environment?

1.8 Energy source and requirement as the driver of evolution

If we step back to the stem cell position, the bi-potential or multi-potential (pluri-potential) stem cell, which assumes that it gives rise to different state of development, had to have an energy source. Evagination or invagination indicates the relationship to the energy source, that there is both self and outside of self.

Thus in Figure 1. the lines of development above (plant development) and below (animal development) and the primordial cell are bound by a vertical and horizontal border, within which i suggest is a medium or atmosphere which surrounds them. As much as each are independent, and in terms of function and evolutionary development, reciprocal, they are also dependent on the environment, which also determines how they can and do interact.

The clue to successful growth and development and reproduction is the ability to work within the environment one finds oneself in, by adapting to change occurring, which is the only option if escape is not possible (Hochachka and Somero)[6]. Adaptation is a slow response relative to escape, which if it can occur, is immediate. Adaptation occurs when the strength to prevail is permitted, as long as there is life, as death may ensue if the change in the environment is sudden or too great,. In the formative days of habitat, life and Eco-social[7,8] environment would have been less diverse than later in development, yet creating a challenge and driver for development of life and its evolution as conditions then began to change.

1.9 Complementarily of form as well as reciprocity of function

Take another step back. The Bible has it that Chava (Eve), (chava means friend and Eve refers to the time of her formation)[9], was formed from Adam[9], whose name derives from the Hebrew word, Adama, that means “earth”, and Adam, means “man”. Thus the energy for both comes from the ground and they are from one source[9,10].

The first letter of the Torah also begins with the letter B, which has the numerical value of two and the first word, according to Rashi, a famous 12th century Bible scholar and commentator, says it means two firsts[11]. With this understanding, and the knowledge that the first letter of the Torah being a B, means, “In beginning” not “in the beginning”, i.e. the difference being the “purpose” as opposed to the “the start of something – for its own sake”, I conclude that the world was fashioned in pairs, two's, each of the pair the complementary in form of the other and reciprocal in function. If this is so, pairs can be regarded as complementary, rather than opposites.

Plant and animal life are an example of this complementary and reciprocal pattern, as does all of physicality appear to be, whether male and female; parental and filial; organism and environment; light and dark; sun and

moon; night and day; and heaven and earth or grand design; our purpose and details, such as the mechanisms / description and workings of all created things, quality and quantity; teeth, paired left and right and top and bottom; lips and teeth and tongue and palate, which also serves as the base of the nasal air passages – part of necessary respiration required of multicellular organisms that also functions to remove acid generated as CO_2 in metabolic processes that accompany digestion as well as from muscle movement to cause mobility, or to catch and to escape. There is also another pair here, in function as well as giving rise to form, namely, evagination and invagination. These are both complementary and reciprocal, part of a unit as a pair, in beginning as well as in development, for the purpose of working together.

Thus it is possible that what developed in the one early on, in plant life for instance, which is characterized by evagination and obtaining nutrients by extending into the environment could also be imbibed or ingested or phagocytosed and then be incorporated into the invaginated cell line that characterizes animal development.

Both of these pathways, as depicted in Figure 1. indicates complementarily of form as well as there being reciprocity of function that involves each of them. Thus, “In beginning” they were created, not only in relation to “self”, but, in relation to “whole”, throughout their time line, including their origin as well as existence. The background, though white represents the external milieu surrounding them.

The axes in Figure 1 are also representative. The vertical axis represents the time line of existence and the horizontal line, represents a window in time, related to existence in which the plant and animal origin and their development is depicted, as occurring at some time from the intercept which represents the beginning of “formation”. In the space between the vertical time line and the primordial stem cell, there is also a space in which the gases of the atmosphere only existed, and which changed over time once living organisms multiplied and interacted with it. Thus initially hydrogen molecules and ammonium, methane gases dominated. And because of that anaerobic prokaryotes could have formed. Once oxygen became available hydroxyl groups and CO as well as amides could form, to provide the building blocks for proteins, and the development of aerobic forms, which further impacted to change the gaseous composition of the atmospheric environment. When then did eukaryotes form? It seems to me that when the atmosphere or medium, be it liquid or gas, changed and became more varied, as the earth began to cool, the terrain became more variable, so sensory potential had to emerge among mobile forms in search of food. With complexity increasing genetic material formed to retain the design and form as the repository of adaptive transformations that could be passed on to forthcoming generations. Further development led to the organisms and creatures we know today.

The reason for such speculation is not only to indulge in possibilities. It is to emphasize the role the environment plays and the reciprocal relationship of plants and animal interdependency, and increasingly human (animal) behavior, which can be beneficial or destructive, on the composition of the environment. From the beginning, we have depended on it and on plant life. Plant life has changed it[12] and made life possible because of it, in which we live in harmony. It is now our duty as humans to show regard to the whole planetary landscape, and not destroy it. The functional reciprocity effect emphasizes that our lives too depend on it.

1.10 Energy and reproduction

The morphological form as complementary and reciprocity of function was maintained even when the plant and animal Kingdoms became “separate” in form, yet remained reciprocal in terms of function. Plants, being sessile outsourced their reproductive capability to the elements that constituted their environment and to the creatures with flight and/or mobility that lived within it. Those creatures not only ensured the reproduction of plants would continue. Doing so ensured their own survival, as plants, and any other organism that fed on them, provided them with an energy source that they could not by themselves extract from the ground, the ground being the ongoing basis of the energy supply to both plant and animal lines for their development and their sustenance, at least in land forms, sunlight not-withstanding. Furthermore, any other organism that fed on them, those plants and animals which pollinated them, also thrived.

Stomal development[1] that characterizes animal life, and stomatal development on the undersurface of the leaves of plants, became specific drives[1] with reciprocal functions, generating the specific environment directed growth required by plants and the partnership of animals in plant reproduction, at the same time as providing a food source for animal growth. Stomal drive led to further change and paired diversity of plant and animal (e.g. insect, bird) development and “catch me if you can” scenario among animal-animal interactions, or, “use it or lose it”, in terms of environmental challenge, reciprocity and stomal drive.

Interestingly, water was required, that primitive forms of life that were able to create the oxygen from, resulting in the atmosphere that supports most of all life[12]. Stomatal development in plants determines water uptake and evaporation. These, present on the underside of the leaf in leafy plants, would also determine their evolutionary success and durability in different weather conditions and be suited to their own specific ecological niche and the importance and relevance of the time of the leaf[13].

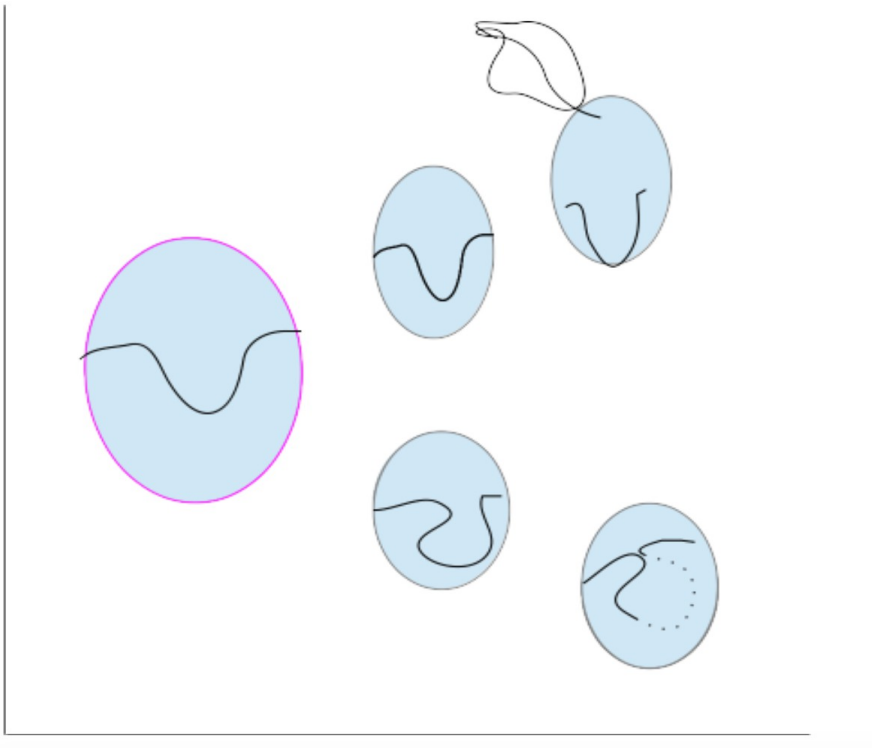

Figure 1. Plant and animal divergence.
Divergence of plant and animal lines from a bi-potential stem cell element depends on evagination (upper series) or invagination (lower series) respectively. Evagination (vertical vector) leads to sessile means of energy uptake and plant development. Invagination (horizontal vector) leads to stomal formation to obtain energy and animal development. The vertical axis represents time since Creation began; the horizontal axis represents a time window in which divergence and evolution occurs within an interactively supportive environment, occurring at some point on the vertical axis, when life first appeared until the present. In spite of this divergence functional reciprocity is maintained (see text).

1.11 The phylogenetic make-up and points of sensitivity to change

All parts of a plant are subject to stress and change. The roots and leaves connected by a stem, working together, are the most responsive and important part of the vegetative form as the flowering parts is to reproduction. Susceptibility to epigenetic change or responsiveness has been shown to occur during male and female gametogenesis[14]. Changes affecting both, and/or at fertilization provide opportunities of response to changes in the cellular environment in plants as well as animals. Biochemical responses to change in the environment that affects membrane permeability, metabolic pathways and ionic concentration and transport, as suggested in 1982, could also influence gene structure including base pairs, including histones[2] and / or the genetic process or mechanisms[2], or cause epigenetic effects[3] affecting particular genetic sites, involving histones and as is now known, involves DNA methylation, that is related to histone acetylation[15], that determine functional suppression or inactivation as well as expression of the genetic code[14-17]. These mechanisms are also inherited[17]. They add flexibility to the functional repertoire of the genetic ensemble via microsomal RNA and transcription pathways[3,17]. Given their seasonal responsiveness plants could have developed the softer epigenetic approach more dependably than animal lines[3]. Whether development occurred in plants and was transferred to animals lines is an idea, though once developed, independently or not, it would inclusively serve both plant and animal, i.e. holistic, functions.

1.12 Universal biological design: Paired form and function

The renowned physiologist, called the father of physiology, Claude Bernard, akin to the eminence of Linnaeus in Botany, studied and lectured on both plant and animal physiology. He also appreciated the symmetry of form in terms of isomers in chemistry as well as in morphology[18]. Yet symmetry is not only found in form, but in function. Everything formed and functioning does so as a pair to form a unit. The complementary structural form and reciprocity of function that was evident in the plant/animal progenitor cell (Figure 1) persists in plants and animals today.

The reproductive outsourcing and dependance on animal life including insects and of the ecosystem including

air and water medium for seed dispersal combined with plant source as food material for animals to survive. These functions form the crux of their reciprocity and interdependence. Form of flower and animals mouth parts, beaks or insects, ensure plant reproduction and thus source of animal food. The sessile form of plants and the mobile characteristics of animal forms underpin this connectedness.

Stomatal development in plants determines water uptake and evaporation. Present on the underside of the leaf in leafy plants these, too, would determine their evolutionary success and durability in different weather conditions and suitability to their own specific ecological niche.

Animal development depended on vegetative food sources as well as from nectar at times of pollination. Mobility permitted exploration and to seek new sources of energy. In times of change, due to drought or disease or loss of plant material, escape or adaptation, which is time related responses[6], became necessary. Escape mechanisms are immediate[6] and utilize available mechanisms to move to other similar environments where available adaptations that are in place have currency as they are already developed. These include available mechanisms such as physiological mechanisms or metabolism[2]. Sensing a change in the environment results in a response, previous adaptations permit an immediate response, including escape. Escape usually means a change of location, but it may also mean use of available mechanisms. In the event that escape cannot occur an adaptation has to begin to occur to ensure the ongoing survival of the plant or organism. New adaptations to change in the environment depend on sensitivity to change.. They may be biochemical responses, epigenetic responses or behavioral responses that become incorporated into the genetic material if improved survival and reproductive capacity occurs in the new environment[2].

1.13 The Constancy of the external milieu

Claude Bernard reasoned that sea creatures were able to colonize land by taking their “internal sea”, namely the lymph and plasma that bathes all cells, with them. He called his theory the constancy of the milieu intérieur, as from the organism's viewpoint, the lymph and plasma is internal. However, from the cellular viewpoint, lymph and plasma are external, as indeed the sea is too. Experiments which were performed in humans that when individuals, normal subjects were challenged by increasing their sodium intake plasma sodium concentration remained controlled within fairly narrow limited, within a 5% range or less[19-21], whereas, we found that in patients with essential hypertension intracellular sodium concentration changed by up to 30%[22]. Sodium is the most abundant extracellular cation, and the most abundant cation in plasma and lymph as well as in sea water. It is inconceivable that organisms determine the sodium concentration therein, but in a relatively closed system, the changes observed suggested that the cellular responses appear to maintain the constancy of the external environment or milieu extérieur[2], a conclusion which is in agreement with others who also appreciated Claude Bernard's point of view[23,24]. Although they recognized the limitations of the name of Claude's Bernard's theory, it did not occur to them to rephrase the idea, perhaps because they were celebrating 100 years since Claude Bernard's death, and were celebrating his significant physiological contribution. Yet, it makes sense to do so, especially as I came to that viewpoint independently, on the basis of results of clinical experimentation[19-21] that suggested that cellular responses maintain the constancy of the milieu extérieur[2,21]. The biochemical characteristics and physiological response to change in the environment, in this case to change in sodium intake, gave rise to a General Systems Theory that could also be applied at other levels of biological organization. Two Laws were proposed as its basis, as follows[2], that:

A. Innermost membranes maintain the fluids, external to that membrane within an optimal range. This occurs at all outer levels of biological organization; e.g biological level of organization occurs at the levels of the mitochondrial membrane, cell membrane, individual, (family) group, community, world, planetary system, galaxy and so on and probably begin at or within the nucleus of the atom.

B. A persistent disturbance of the external fluid at any biological level of organization will result in a change in the inner fluids.

The reader is encouraged to imagine cellular, biochemical or behavioral or functional adaptive responses that are adequate and appropriate, as a plant by evagination and/or animal by invagination and stomal development would evolve in any specific or general environmental situation that is life sustainable.

According to the author, each organism became suited to its environment in its own unique way, whether plant or animal, and yet in diverging maintained complementarity in terms of form and reciprocity in terms of function. Animals and plants served one another, making an Eco-social[7,8] environment that is defined as a holistic environment favoring diversity in terms of uniqueness of form, yet, also mutually dependent.

Reproduction was outsourced by plants to the environment and/or to organisms with mouth parts, whereas diversification for feeding led to Stomal drive[1], as an evolutionary process, in animals, so they could go in search of food. Taste plays a large part in this. Stamens, the projection of the female part of plants, would have an expanded sticky surface, upper end projecting, with nectar on it, for pollen to attach to and for insects and birds to be attracted to, to facilitate pollination. In addition, after pollination in the annual plant cycle, the development of fleshy fruit occurs, which has a distinctive sweet taste to facilitate seed dispersal and distribution, a point emphasized in a recent discussion class (personal communication)

In both plant or animal evolution, shape and color, as well as taste, played a part. Foraging and hunting species developed color and shape that blends in with their environment to enable them to catch prey or escape detection. Memory patterns of color, gait, sound and vibration or movement of potential prey would aid in energy acquisition as well as serve as warnings of escape or to inherently camouflage and hide, while migratory patterns require a collective awareness for reproductive purposes and feeding. Seasonal visits by birds to known locations of trees indicate memory, for feeding purposes, in response to seasonal variation.

Birds developed wings to escape and prey. Flight allows them to come within reach and to feed atop of trees and from flowering and fruit bearing plants, which avoids the need to develop a large size to do so, which would have entailed an increase in weight. This occurred at sea or land

animal forms, though some land bird forms, such as Ostrich and Emu, and Cassowary, are found and are generally bigger birds or became extinct in the current memory of time, e.g. the albatross and ground species of fowl due to being preyed upon. Stomal drive[1] thus became the main driving force for animal diversification and evolution from the point when unicellular organisms became animal or plant like, Fig. 1. Animals, being mobile, developed a means of catching prey and of being able to foresee danger, so developed senses and forms of communication, as well as variations on the method of transfer of sperm to within reach of eggs or ova for reproduction, while migratory patterns require a collective awareness for reproductive purposes. Memory patterns of color, gait, sound and smell would aid in energy acquisition, as well as serve as warnings for escape, and ability to care for their offspring. Seductiveness also has to do with pout and kisses[1], or, "stomal tuning", and willingness to engage in order to reproduce, feed, nurture and teach.

1.14 The food chain

The food chain begins with plant life because it extracts nutrients from the ground and is most abundant. All life forms feed off it, except for earthworms which live in the ground and process it to support plant forms. Our existence depends on our being cognizant of this harmonious and paired existence, between animals and plants, for our survival. How and what we eat determines our longevity and the quality of our existence. We are the developed appendages of stomal drive. Mouths are needed to ingest energy from all sources. We have no other way to obtain it and at the same time, thrive. Fluid and energy expended requires fluid replacement and energy intake. Sight, olfaction and taste subserve energy input. Hunger pains and desire abet input, as does presentation, as the outcome of shape, color and manner of presentation, is to stimulate hunger and appetite, in order to ensure we take in the energy we need, so that we eat. Satiety suppresses appetite, whereas conscious thought can control it. Control can be overcome if choice or desire is to continue to eat, even if this makes the person feel uncomfortable physically, and vomit, as long as it serves a psychological drive, not a stomal one. That is why oral is connected to heart and desire, as the brain is to control, choice and moderation of desire and input. Retaining awareness that energy intake is for growth and reproduction as well as to escape if need be, emphasizes the importance of stomal drive in evolution and survival and that consciousness is a necessary appendage to it, to monitor and control it[1], overcome it, or exercise it[1].

1.15 Harnessing solar energy and performance

Sunlight is the world's natural source of light and warmth, which is also needed as an energy, as opposed to nutrient, source. Yet, its light became harnessed to afford energy to permit plant life and growth, and in animals permitted height or antigravity development as an endo- or exo-skeleton, requires calcified elements dependent on sun-sensitive Vitamin D formation for calcium uptake, to maintain skeletal calcification to which muscles could attach to move limbs to provide mobility and strength for capture of prey and escape from being eaten, so that in both kingdoms, whether directly or indirectly, solar source enhances energy production, with the exception of Platyhelminths, Helminths and other worms, and those organisms that do not stand erect or are unicellular. Plants developed fibre tracts and hardened bark to permit growth and attain height, unless they are climbing plants that need to wind around and use other forms, such as stone or bark stem plants to climb on. A spiral pattern can be seen in the leaf arrangement of these plants, as occurs in elongated structures, including genetic nuclear material[2]. However, it has been shown that this leaf arrangement is under genetic control and can be modified[13] and is not simply a chemical arrangement.

The development and sustainability of plants and animal phyla and kingdoms are complementary. The point of stability in any eco-social©[7,8] environments, even from very different perspectives[7, 8] is: when the least energy expended or needed to survive and maintain efficient reproduction is in balance with the energy/food supply.

1.16 Cellular responses to environmental change

When external conditions change, and the eco-social environment alters, biochemical responses are again activated to maintain the environment constant, either through escape or adaptation[6]. The adequacy and appropriateness of the adaptive response, termed "Improvisation" Theory of evolution[2], based on a General Systems approach[2] enables improved function and survival that ensures evolution, while adapting to those changed conditions by the efficiency of reproduction in the changed environment[2], the persistence of which determines whether the epigenetic[2] effect will translate or need, be translated into evolutionary consequences[2], unless escape to another location to which the organism is used to functioning in, occurs[2,6].

2. Application of General Systems Theory to disease, behavior and Aging.

2.1 Maladaptive responses

In terms of General Systems Theory, maladaptive responses occur when they are either not adequate or not appropriate, or both, which leads to disease[2], including psychiatric manifestation[1,25,26] in man. The following table is based on those who respond appropriately and adequately to situations and those who do not.

There are basically two types of people, (Table 1, below).

1. those who are self oriented,

and

2. those whose priority is to contribute to the care of others.

What a person decides depends on which of these two types they belong to.

At the same time to belong is determined by choice.

"Good noW!"® **B"H**

Table 1. Classification of behavior according to adequacy and appropriateness of response

Responses to external challenge are either inadequate or inappropriate or both and do not address or fail to alter inner feelings of doubt	Adequate and appropriate responses to external challenge and inner feelings of doubt
Essentially negative view of self and life	Positive self esteem and esteem of world and intentions of others.
Bureaucratic, controlling.	Administrative, entrepreneur, creative, inspiring
Unethical, biased, dishonest. Unforgiving	Ethical, sensitive and responsive to context, honest. Forgiving.
Feeling of having been misunderstood - subconscious psyche.	Confident. Calm sub-conscience.
Challenge is taken as personal and an unwanted burden and / or cause for complaint.	Challenge is considered as an opportunity to focus on task accomplishment, not on self.
Nihilistic "spoilt" child syndrome.	Loves generously, loves life
Self centered. Never able to be satisfied. Wanting to portray themselves as "victims"	Makes others feel satisfied. Says sorry with empathy, or when asked to.
Agenda driven.	Concern is helping others, not with self
Takes out feelings on those who do good, and do so under the guise of doing good e.g. uses the guise of "to protect the public" and "ensure health services", but really are not doing good for anyone, except their view of themselves, for themselves.	Every choice moment is an opportunity to do Good noW!"®, which includes giving another the benefit of doubt in favor of intention to and doing good.
Denies context and therefore foregoes ethics. This is the effect of self serving bias and agenda	Recognizes context and thus morality and ethics.

No Sense of humor - a sense of humor is defined as a heightened awareness of sense of self, not of non-self.	Sense of humor i.e. ability to be able to laugh at oneself or situation.
Lives according to comparison, whether the glass is half empty or half full, and is therefore never satisfied	Lives according to what there is in the glass, i.e. actual existence and objectivity.

2.2 Aging

Aging results from lack of response to environmental change[26-28], because either sensing mechanisms do not exist to detect this change or the force is constant and not detectable or the sensing mechanisms are not sensitive enough, such as the effects of time, gravity and gamma radiation or mechanisms do exist but obligatory production continues, such as free radical generation within cells and the resultant conundrum that the oxygen molecule on which life depends, or cannot do without, is also the byproduct of metabolism that destroys it.

3. Stomal drive, epidemics and epigenetic effects

Awareness ensures what we eat is for bodily needs, to survive, grow, reproduce and maintain, i.e. is connected to instinctual drive[1]. When energy intake is scarce malnutrition results, and affects millions of people worldwide. Beyond body requirement of energy and salt, excessive consumption of energy, whether as carbohydrate or fat, leads to morbidity epidemics, causing diabetes in those overweight, cardiovascular in those who eat too much saturated fat and cardiovascular risk in those whose salt intake is excessive. Each of these may have epigenetic effects. Overweight for height mothers give rise to fatter babies who are more predisposed to develop Diabetes, as exposure to higher glucose levels while in utero, challenges pancreatic insulin reserves, yet also raises the question as to whether there are also genetic or epigenetic effects, leading to metabolic syndrome and other unwanted effects in later life, as occurs in or predisposes to Diabetes Type 2, and which are also associated with the aging process[29]?

Familial and biochemical responses to change in environmental factors that may involve epigenetic mechanisms have been implicated in predisposition to hypertension[2,30]. A classical epigenetic experiment, in regards to excessive sodium intake and development of hypertension, was suggested in 1982[2]. It seemed fictional to suggest so at the time. Yet, because of technological development since then, the hypothesis can now be tested, provided the conditions that may occur, such as fetal loss, are monitored[2].

3.1 Evolutionary change requires adequate and appropriate responses

Evolutionary change occurs under conditions of challenge to the organism or cell and requires adaptive responses that better meet the needs of the cell or organism in the changed environment[2]. Challenge and response determined the cellular evolutionary outcome, whether plant or animal, according to whether cell evagination or invagination occurred.

4. Lamarck's view of evolution and Darwinism. Are they compatible?

Lamarck proposed an adaptive form of acquired characteristics in evolution[2,3] and [31-37], as quoted by Richards[3]. The Laws[2], as above, support Lamarckian theory and epigenetic mechanisms of adaptive cell responses[2], provided a theoretical approach predating by several years the exciting results of epigenetic studies along similar lines as those suggested in 1982, when "Improvisation Theory", was first introduced[2]. The "Improvisation" theory of evolution depends on successful adaptations to the new environment permitting evolutionary change to occur, which supports a Lamarckian view of evolution rather than a Darwinian one[2].

However, both the approaches of Lamarck and Darwin may be correct, if one considers Lamarck's example of the acquisition of the giraffe's long neck to explain the concept of acquired characteristic, in the following way. In fact they are seen to be complementary, rather than mutually exclusive[38]. For instance, at any age, height would confer an advantage to taller giraffe with longer necks than their siblings or peer group, and given that trees grow, they would out-maneuver shorter giraffe for the leaves atop growing trees, as long as taller giraffe than they, eat from taller trees, which they are likely to do, as this also ensures they can watch out for their own safety while they eat and, if required, escape more readily, as they are already straightened up ready to move off if they need to. Of course drinking requires bending, which puts them at risk. A tough elastic band mechanism on the dorsum of their necks permits them to return to the upright, neutral, position without effort when they need to, which is to the upright position they are in when they eat. In this way taller giraffe with longer necks grow stronger and succeed in the mating race as well, resulting in stronger and longer necked giraffe as a matter of survival which permits that constellation of genes to be favored in terms of reproduction and evolution. In terms of human health and evolution understanding environment from the perspective of Eco-social©[7,8] relevance will lead one to identify that where there are trees there is less stress on the individual, and the more diverse the environment the greater is the wellbeing of the creatures, including man, living with it[39], as more diverse diets and lifestyle flow from it. To this one can add the need to exercise, to be exposed to sunlight and be protected from it, and to nightlight, periods of work, creativity as opposed to bureaucracy[40-45], see Table 1, to ensure fulfillment and happiness[46]. Happiness may itself be a potent factor in determining memory, patterns of recall, epigenetic coding and modulation of behavior and confer adaptive advantage even in old age compared to other emotional experiences such as "unhappiness[45]. Changes in telomere length and telomerase activity due to life stressors[47] and protection conferred by exercise[48] would support this.

5. The environment: the place where science and ethics meet

5.1 Does how old you are indicate duration since we first met?

The world of awareness of G-d, just as your awareness of me or my thoughts is only just being born, an hour of your time, it is clear that neither you nor I are only one hour on this planet. Indeed, we have been here for me 67years and you perhaps less, but at least five years we have in common, perhaps ten up to sixty seven. Neither of us is one hour old.

We are, however, one hour more aware. And that is what Adam in the story given in the Bible represents. Life was here before then, indeed Adam, created on the sixth day after the beasts and earthworms in the ground[9], that separated animals/beasts of the field and Mankind[9]. From Adam, Chava, friend, or Eve, was created, on the eve of the sixth day. So, there was creation before then. Yet, it was only on the sixth day that all that was created came to life and G-d saw that His Creation worked[49]. The test was that everything ate plant life, and plant life obtained its energy source from the earth once it began to rain. Water is a basic ingredient to both plant and animal life and neither can do without it. It was only in the Garden of Eden that they had a completely harmonious relationship. Outside of it, they required an ethical and objective framework, the Seven Noachide Laws for all Mankind, also known as the Seven Laws of the Sons of Noach, to guide them.

Thus, as hunter and gatherer, as are animals (being mobile) and plants (being sessile gathers to it), respectively, are we able to develop in a harmonious relationship, complementary in form as partners to one another and reciprocally in terms of function. Science and purpose are complementary, not opposites. Indeed, even within species, between individuals of a pair, these two elements, hunter gatherer, arise. In describing Bills as daggers? A test for sexually dimorphic weapons in a lekking hummingbird[50]. Alejandro Rico-Guevara and Marcelo Araya-Salas' findings can be applied to defining these sexually distinct roles. Thus the hunter, male or evagination, and gatherer, female and invagination functions such as protecting and feeding are borne out in the one species, where the defence of territory is not in conflict with the feeding of his offspring and protection of “his” abode” and “area”, as these functions are performed by the adult female and male, as a pair, in partnership. Indeed, defence of territory, in addition to setting controls on mates-ship, also safeguards territory for energy acquisition. Controlling the external milieu to reduce the change that affects each individual and feeding the individual so that the former “duty” is not in vain are complementary activities. The example also underlines stomal drive in evolution in all its aspects and functions, including territory protection and energy acquisition for survival, and a General Systems Approach to understanding this.

By extending the above pattern to human behaviour, we can add and ethical approach, which would ensure we do this as well for ourselves as for another, to promotes harmony, ability to understand another's needs and to live together. Interestingly, in terms of reproduction, in animals and plants, evagination (external organs or ejaculation, or sperm distribution, in animals, and pollen distribution in plants) is associated with male and invagination, i.e. internal sex organs in female animals, and as the stamen or gynaecium through which the pollen is internalised, relates to female reproduction. An ethical approach ensures we do this as well for ourselves as for another, which promotes harmony, ability to understand another's needs and to live together. Regard to context underpins ethics, which underpins diversity and harmonious interaction.

5.2 The Bible is a testimonial of purpose and development of purpose. It is not a Book of science.

The second point, that is overlooked, is that the Bible is a testimonial of purpose and development of purpose.

We were given the basic Laws and through discussion and explanation and application of understanding, developed these further in order to ensure the nature of our living environment. Thus from the written Law, the Bible, the Oral tradition, Talmud, was founded, a human application of Stomal drive, i.e. oral Law, as told over, which continues to be formulated to adapt to a changing, indeed increasingly technical environment.

Though the days of creation allude to science and knowledge in a pattern that is evidence of evolution, the Bible is not a Book of description or science.

It was not necessary for God to go into mechanics. He left that to Mankind to fathom and do, to be able to find Him. He gave us the finished products and left it to us to work our way through the maize (plant, staple food, showing epigenetic features[14,51] of evolution[2,3,52,53] and discovery knowing what to expect. An analogy is a jigsaw puzzle picture. It would be impossible to even attempt to “reconstruct” the puzzle without it. Context is the picture on the box. We are the pieces in the puzzle. Knowing the context and referencing to it i.e. to relate to the environment present at the time, ensures we are responsive to the environment in which we live and function as ethical beings[20], as opposed to acting as humans without a sense of ethics and being[20,21].

Awareness of context is central to focus and goal, which is ethical development, honesty and awareness. Function demands reference to it. It is also central to physical and emotional wellbeing, including ability to adapt, which is core to evolutionary change. Thus context, environment, and exposure to it, matters. In terms of General Systems Theory, it is up to us to control the external milieu to ensure our growth together, diversity and diversity's survival. That is why we study evolution. it gives us a sense of who we are and for what and why we are here. Study of biology and evolution ensures our ethical connection to our roots, herbal, tribal and cultural, and to the air we breathe and the source of it. The greater understanding is that the study of environment and of maintaining it, its role in evolution and the Biblical account are complementary not opposites.

So if we reverse the logic, the Bible or written Law can be viewed as the genome and the oral tradition as the epi-genome, as discussed above. If that is the case, and the genome is the repository of successful adaptations to environmental changes that have persisted over generations, as previously suggested[2], or which is conveyed during pregnancy, by exposure of the P, F1, and F2 generations, to the environmental change, and the epigenetic effect is the response that is flexible and immediate (in relative terms) in response to external stresses or change that are maintained, that alter expression of the genetic material, whether through altering histones and methylation[3,14,15,17] and possibly involve transcription effects by these or other mechanisms, in the P generation and developing foetus and in the ova of the developing offspring[2], and which ensures the genome is relevant to the contextual functioning of the organism, e.g. during reproduction to ensure successful reproduction and

indeed survival, that is relevant to phenotype in plants and social interaction in animals. This could then maintain the constancy of the external environment at the cellular level, and according to the General Systems Approach, be applicable at all levels of biological organisation, including the plasma and lymph, as well as the eco-social environment of the individual, family, group community or society, nation and world. Similarly, the Biblical text, which does not change[54] could represent DNA and the commentary which is the Talmud, which is the oral tradition, which expounds upon the written text, and the applicability of it, given the Temple ritual is not functional at this time, but adaptive strategies are as new developments occur, simulate epigenetic or modifying effects, as are epitomised by the regulation of genomic expression and adaptive epigenetic mechanisms that determine regenerative capacity and plasticity of organisms and living cells, both in plants and animals[3,4,14,51-53,55].

5.3 Concepts from heaven and details from earth

The study of evolution is not contrary to the story of Creation. In fact, it helps us to understand it, and that G-d did not have to give us the complete fill-in on the mechanics of life and physicality, its form and function in detail. Understanding of this is the secret to understanding why study of evolution and Bible study is complementary not opposite. The days of Creation represent a conceptual analysis, a conceptual framework, and focus on the ultimate of each day of Creation, not on the mechanics. In fact, G-d's view of the world is not in the world for itself. Rather He created it with the Sabbath in mind. It was first in thought, and last in Creation, a time of complete awareness of Him and us, who are destined or chosen to keep it, in partnership with Him, just as Sabbath and the rest of the week, as are Jew and non-Jew, complementary, according to His design, not opposites. The Biblical account is, from the very first letter, a Book whose message, though it relates to us, is primarily and fundamentally a message of purpose, “In beginning” not “in the beginning” and that is the difference.

Like heaven and earth He gave us the concepts, form and function and purpose, as well as evolution in terms of days to indicate the end points of each of His Creations and the purpose of it. These, too, are the end points In evolution. In his description as noted in the Bible, Torah, Hashem, the Name used instead of using the word for the Almighty One, G-d, left the mechanics for us to inquire about, to reach the conclusion that because ethics requires context[45], we need to be mindful of context, of environment. Having regard to conserve the environment[2,8,9,39,56] that G-d intended for us to aim to maintain and understand the working of, as one of diversity in form and Oneness in function, makes us mindful of Him, in the same way that insects and birds pollinate plants for one another's benefit. Everything has its place. Nothing takes precedence over anything else, nor over context, purpose and Oneness. The full realisation of that is our function and purpose.

5.4 Study of Evolution and Creation, are integral partners

Thus the study of evolution, which evolved by responding to environment challenges is absolutely necessary to understand spirituality and need for diversity, as the basis of ethics in society. Plant and animal diversity does not indicate difference. It indicates plurality of form and Oneness of purpose. The plant and animal evolution indicate that they have developed, and indeed do develop, not as opposites, but hand in hand. Their origins as well as function indicate the overall patten of life in pairs is determined by complementarity of form and reciprocity of function, to form units as pairs, and adequate and appropriate responses. It is no coincidence that spring and blossoming and fertility and offspring occur at the same time. Clearly, the seasons have an effect on behaviour, inducing migration, for these reasons.

6. New views on inheritance

Jablonka and Lamb[42] have revolutionised thinking about inheritance, as more that Mendelian, from nuclear, epigenetic, behavioral and symbolic points of view, perhaps even incorporating Victor Frankl's logo-therapy, as explained in his book, Man's Search for Meaning[57]. There is no doubt that without meaning there can be no progressive evolution from this point onwards, as far as man is concerned, as context is central to ethics and meaning. And what affects man, now, affects everything on this planet. Ethics is therefore central to all Creation as context is to Mankind. This of course only emphasises that without ethics there is no hope, let alone likelihood of evolution which is based on both life and hope and the recognition of context.

Context ensures that survival is not simply focussed on an individual or one species or even race. For there to be relevance there must be two. Survival and truth are both essential elements of evolution and life, survival related to oneself and truth related to the need for survival of another, someone else, and the environment. This can be appreciated from several viewpoints, as proposed, the DNA, epigenetic, behavioural and symbolic viewpoints[53], and planetary influences[2], in terms of seasonal change and response to this.

The latter indicates that it is not simply the entities that are important and necessary. What is necessary is interaction, stimulus and response, challenge and adaptation to it, when escape is not possible and death does not ensue. The latter two scenarios occur either because of a sudden effect or one that is overpowering. The basic construct is life, change and adaptation in order to survive, when there is no means of escape.

Evolution does not occur in a vacuum. Insects are fashioned by flowers they need to feed on, and flowers are fashioned to optimise fertilisation opportunity by insects. The dynamic has begun. It has not ended. It is ongoing, dynamic and requires Man's sensitivity to context, just as evolution from “In beginning” has done, Figure 1.

According to the proposed General Systems Theory[2] of maintaining the constancy of the milieu extèrieur, adequate and appropriate response to environmental change determines successful evolution. This provides a new opportunity to include different perspectives to the one Claude Bernard proposed in his Theory of the constancy of the milieu intèrieur, that centres the focus only from the individual organism's viewpoint[5]. The General Systems Theory proposed permits the application of it to different levels of biological organisation. Just as Bernard was strapped at the time by technological constraints that later were overcome, the model I proposed in 1982, which still pertains, was unable to be tested then. Technology that permits study of the genome and RNA related functions and transcription now, permit studies to be done to prove the hypotheses then proposed, of the “Improvisation” Theory of Evolution, which is essentially Lamarckian, as it is driven by ongoing environmental change and response of the organism, and plant and animal interactive relationship, which is designed to maintain the constancy of the milieu extérieur at all levels of biological organisation [2,7,8,26-28] for ongoing survival

and evolution, in the absence of an effective escape mechanism[6].

What we feed on, and what we share, from mouth to mouth, is our passport to evolution as well as our undoing. Speech used to slander, degrade or profane, gossip and opinion which it becomes, are all our undoing. We can change that by being considerate, reporting fact and issue in context which would put paid to opinion based faith. Honesty and integrity means relating issues and facts in context[42,45].

In addition what we do, which an oral drive permits, too, must be ethical, by considering place, time and person, by being considerate. This is our evolutionary journey. Anything short of this is conditional, leads to disorder and disease, which translated into humans terms does not only mean epidemic, but war, both personal and interpersonal, and between families and communities, involving all levels of biological organisation, which is recognised. In the Bible, (Pentateuch or the Five Books of Moses) it says, when you do these Commandments, the rain will come in its season in a way that begets crops, growth and food, and deserts will be transformed into fertile and fruitful lands, supportive of the diversity of all that the land can and does sustain. And G-d holds, that promise "as long as the heavens remain over the earth", which I regard as the environmental impact statement contained therein[56]. This is our bread and the oral tradition, the condiments that add relevance and flavour, which sustains us. Stomal drive remains the sustaining driver of evolution, when we apply context to what we say, do and eat.

The General Systems Theory, that focus of response to change is to maintain the constancy of the external environment, by controlling the extent of the external change i.e. adapt to it ourselves, in order to function better in the new environment. The former is the basis of survival and stomal function. The latter, leads to evolutionary gain, which includes stomal drive and acknowledging context in oral, physical, emotional, mental and spiritual, i.e. contextual, responses, that build on our ability to survive and to maintain an optimal living environment, in every sense of the word, living, i.e. diversity, in terms of plant and animal species, to create and maintain as well as develop ideal eco-social opportunities and environment. Not only do we need to adapt, our actions can also change the environment and it is this interaction that now challenges us.

7. The ethics of evolution is functional diversity in pairs and reciprocal interaction

Given the interactive allosteric relationship between plants and animal forms and their development as well as functioning, function and diversity represent the ethics of evolution, which directs or must now direct our every effort, for the sake of all Mankind. That this includes room for a Creator is our saving grace not a reason to find differences, because in G-d's eyes we are all equal. Every unit, every existence is for the sake of the whole. Seemingly, an existence unto itself is only an apparent semblance, not the reality at all. Greater than each of us is the whole. Unique to each of us is that nothing can replace another in completing the whole. Ethics recognises the validity of the necessity of / for both, the whole, the sum of the parts and the relationship between them, and the uniqueness of each part and the functional relation of each of the parts within each.

Thus we can conclude, according to Acton[58], in agreement with Herbert Spencer who coined the term, "survival of the fittest"[58] does not mean and is not symbolised by a towering figure of the last man standing alone. Rather it means the Oneness of all.

Acton[58] notes that "*Herbert Spencer, (born April 27, 1820, Derby, Derbyshire, England—died December 8, 1903, Brighton, Sussex), English sociologist and philosopher, an early advocate of the theory of evolution, who achieved an influential synthesis of knowledge, advocating the preeminence of the individual over society and of science over religion. His magnum opus was The Synthetic Philosophy (1896), a comprehensive work containing volumes on the principles of biology, psychology, morality, and sociology. He is best remembered for his doctrine of social Darwinism, according to which the principles of evolution, including natural selection, apply to human societies, social classes, and individuals as well as to biological species developing over geologic time."*

"In his emphasis on variety and differentiation, Spencer was unwittingly repeating, in a 19th-century idiom, the metaphysics of liberalism that Benedict de Spinoza and Gottfried Wilhelm Leibniz had adumbrated in the 17th century. Spinoza had maintained that "God or Nature" has an infinity of attributes in which every possibility is actualized, and Leibniz had argued that the perfection of God is exhibited in the infinite variety of the universe. Though neither of them believed that time is an ultimate feature of reality, Spencer combined a belief in the reality of time with a belief in the eventual actualization of every possible variety of being. He thus gave metaphysical support to the liberal principle of variety, according to which a differentiated and developing society is preferable to a monotonous and static one."

Further, given advances in understanding the role of microRNA's may be determined by cell context[59], the so-called 'selfish gene'[60] hypothesis is a simplistic one that has little regard for context and vitalism, that characterises the interrelationship between the organism and its environment (micro- and/or macro-environment), or between the nuclear material and cellular components that regulate the expression of it to ensure the balance that permits the interplay between optimum environment and continuing to thrive, as a dynamic interplay locally and in the global aspect of life and their interplay.

As we have come to understand, in or with beginning is different to from or in the beginning, that nothing is an end unto itself. Though Roger Dawkins, himself, has tried to explain in the forward to the thirtieth year anniversary edition of his Book, but only to a point, because he fails to understand the inter-dependence that gives meaning to another, he continues to be mistaken in that he regards the gene as the replicator and the organism it serves as the vehicle, rather than the other way around, as it is the vehicle, just as is the organism is, as all are vehicles to the ongoing contribution to the Oneness of Creation each serves. In effect the gene has no ego, so it cannot be selfish. And it cannot be selfish as it is now known that it is not irresponsive nor insensitive, but functional and responsive. It can be down-regulated and suppressed or expressed depending on context. The gene functions or exists only by

virtue of the benevolence of context that brings all existence to a state of meaning and function, that recognises the importance of the individual only in relation to the functioning of the whole. Everything works as the machinery in a Swiss watch does. Nothing is an entity unto itself.

8. The Human scenario, Stomal drive and context.
Devoid of context, dysfunction occurs, that leads inevitably to demise. Ego, see Table 1, only exists because it shuns context, or is judgmental instead of being compassionate or empathic and sensitive, or presumes an independence or superiority, borne on feelings of inferiority, instead of inter-dependent relatedness or reciprocal functionality.

Such a state can only exist as a cancer that creates nothing more than a replica of self, or the denial of context that leads to psychiatric behaviour, devoid of reality, that creates a new "reality" for itself, or the behaviour known as terror, because it destroys the environment let alone self. None of these are viable alternatives. Common to all are ego, overabundance of sense of self, agenda, false beliefs and lack of, or denial of, context and contextual awareness. Each acts as the spoilt child turned "victim", to focus on self, which is self inflicted. Such responses, and feelings that give rise to them and are reinforced by them, have no place in the evolution of species, both plant and animal and their reciprocal interaction, which serves as an instruction in awareness, of need and context, in the evolution of Mankind.

8.1 The "Ego" scenario. Forgetting need and Stomal Drive

We need to understand this selfish perspective for what it is. Not only is the cancer cell not sensitive to the host or the agenda driven individual's behaviour a threat to the social fabric of family life and to nurturing of any offspring, whole peoples and community, bred on hate and intent to spoil the good that others do, who bombard and use or permit their sons and daughters to be used as suicide bombers and as human shields for political ends to claim "victimisation", see Table 1. The parents are no different from their children, as neither choose the alternative. Whether they can or not depends on deprogramming their motif and belief that their actions and behaviour is to be rewarded by notions of virgins in the sky or a horse-shaped rock on the Jordanian hills near the Dead Sea, which inspires these notional ideas, instead of realising the fullness of potential and opportunity life offers, through adopting a positive approach to life, one of wholesome diversity and purpose, see Table 1.

We also need to understand that the earth itself contains minerals that can explode as we'll as cure, that can be used as bullet heads or bullet proof shields, and as Isaiah wrote, "*For from Zion will the Torah (also referred to as the Tree of Life to all those who hold fast to it*('s Laws)) *come forth, and the word of G-d from Jerusalem. He*˙ *(*˙refers to King Messiah*) will judge among the nations, and will settle the arguments of many peoples. They shall beat their swords into plough shares and their spears into pruning hooks; nation will not lift sword against nation and they will no longer study warfare*"[61]. The purpose of Creation will, in other words, be transformed from one dominated by "desire, ego, arrogance, war and greed" to one that focusses on "consideration and need", a transformation from weapons of war to utensils that are required to till, sow in order to grow, reap and feed. This too, apparently is supported by Lamarck's choice of words, transformation[38].

Similarly Press freedom and media needs to take context into account. By not doing so, they abet terrorism, prejudice, sensationalise, inflame conflict, deceive and manipulate, defame and gossip monger for their own self serving and notorious gains. We need to be aware of this and censor it. Colonel Richard Kemp[62] made the salient point that ethical abuse is at the heart of the turmoil in the world, and the Press is an unlikely but important accomplice. Instead of reporting, he said[62], "they invent", to which i add, and also omit to report, to deny context. That has to be stopped and fines applied[63].

For evolution to occur, in other words, for holistic life to function on a day to day and moment to moment basis we have to recognise that individual pride does not shape evolution but denies it, such as when the action of a dentist is not to fix teeth but to use a bow and arrow to kill the lion who is the king of his pride, as recently occurred. To do nothing when this occurs is to be an accomplice. Governments need to act to ensure judges and courts function to shape society's values. The above case scenario ought to prompt us to require would be trophy hunters to undergo warden training and to help man units to stop poaching. We need to entreat Chinese officials to once again place an embargo on ivory imports, and we need to stop whaling and to ensure wild life fisheries and breeding grounds are protected. We need to be able to resist fueling nuclear armament. Instead we need to provide energy as food to stop the flow of refugees and to help settle people in lands they choose to leave; to re-enrich fisheries by curtailing the trawlers to once again give fishing villagers the opportunity to fish off the Ivory Coast, and to provide self sufficiency instead of resorting to devastation of rainforest and jungles and to eating jungle "meat" as their energy source and exposing the world to viruses such as Ebola, because of it.

And who would have thought it possible that one superpower could also become a super terrorist threat. This is what i wrote to Senator Schumer of New York, last week, who had already decided to vote against the Iranian issue that President Obama refers to as "the deal", he wishes to undertake.

"Good noW!"® B"H

24 M Av 5775 / 08 August 2015.

Dear Senator Schumer,

Thank you for your good instruction and leadership and parenting. Ask yourself and ask Congress, even Mr Obama, "Would you give a Diabetic child lollies for breakfast, lunch and dinner?". "So why would you even think of giving a nuclear threatening mind set, nuclear material for breakfast, lunch and dinner and snacks in between in the form of long range and intercontinental ballistic missiles, LR and ICBM?". Put that on Mr Obama's plate and see if he can even begin to ingest it, let alone make him sick after a day or so. Why would you do this, unless you happen to be on a suicide mission yourselves? Ask your allies what they

would recommend. Ask Mr Putin, Mr Russia, he's just waiting for you to get blown out of the water. Would he do it with Iran? Obviously not. He'll pick up the pieces when you're completely out of it. Iran, just as Arafat did, hates those who help them the most and who give in to them. You will be the first because they want to blast Israel off the face of the earth. They can't take being second to Israel. Hitler was no different apropos of Jews, though in his case it wasn't just about sibling and cousin rivalry, he wanted to take G-d out of the picture, so he could be G-d. Mr Obama may well serve out his Presidency, but he may also live to see the destruction his suicide mission causes in his own lifetime, and it will then be too late to regret it, at the expense of life as we now know it on this planet. His show of strength against ISIS's cutting off an American citizen's head, doesn't prove anything to suggest he is fighting terrorism. Rather, it certainly reeks of being a ploy, to shadow his self committed suicide intent to be the greatest terrorist this world has ever seen. Can you imagine if those ISIS fiends had nuclear weapons instead of knives? Who'd be reporting that then?. Not American Reporters. They'll all be dead. Mr Obama's show against ISIS for one American head, is nothing more than jingoism, to belie his indirect support for Arab terrorist groups Hezbollah and Hamas, not to be confused with Muslim fanatics, as all are supported by Iran. Their propaganda machine, of which the Broadcasting Commissions and other western news media grovel to promote, and many others that go along with it, do not understand the ploy of pretense in pretending to be the victim. Their "victimisation" is self imposed, self inflicted - a deliberate ploy that Palestinians, all, and any other such "terror groups" use and have done so for more than forty years. When will you have had a gut full?, When you are blown up! Please read this to the Congress and the people of America and share it please with all, whomever you think of, whether as allies or other, in this world, while it is still possible for us to communicate with one another. It is not President Obama's call to determine the fate of the world by ominous, even if well intended, means. Currying favor with the terrorist is to become one. I believe if Mr Obama cannot help himself to help us, he needs to step down immediately, and to tear up the permission he seeks to become the greatest terrorist threat on earth.

Has the "deal" already had negative consequences?. Could the talk of this and the visit of Mr Kerry, President Obama's emissary, who visited Egypt, and his message, "Don't screw the Ayatollah", have resulted in Egypt's removal of Hamas from its terrorist list?

8.2 Do we have an answer to give, to save ourselves, to parent and ensure our own survival?

The answer is two fold:

(I) One is, do not feed sugar without insulin cover to Diabetics. Do not provide a blood supply to cancerous cells, and do not supply enrichment of uranium facilities to the Ayatollah. Orderliness is responsiveness, which indicates ethics and context. Chaos results from insensitivity and unresponsiveness.

(II) The second relates to context, which demands sensitivity and responsiveness, relates to purpose, and to compassion, as it does to ethics. How then can this be applied to the above situation in the present context? The answer, i believe, lies in reestablishing our roots. That means, by returning to stomal drive, i.e. to valuing our food source and not taking basic requirements for granted. It also entails an awareness that a diverse 'milieu exterieur' is our salvation, as it recognises others and the good in being fairly and considerately connected.

Recognising one's purpose in the universe propels the evolutionary process, as it does the holistic working of Creation, in all its diversity and every specification. Our purpose is to ensure we understand that what saves us is the environment and the environment we choose to maintain, at any level of biological organisation. In such a system, what needs doing and is done, with purpose and context in mind, however unknown and subconscious that is in all forms of life and existence, determines evolution, including the evolution of Mankind.

In direct and stark contrast to the "us" approach and to the ego of "me" and more like me, is the concept and application of "that, which needs doing and is done", "with purpose and context in mind", not only determines our ability to learn, to be compassionate, to engage, to do acts of kindness bringing happiness to another, it goes to the core of fulfillment in life and of our very existence. Through the joy of G-d's Oneness, which is our singular sense of purpose, it also determines our evolution at this point in time. It is through this that the evolutionary process provides the ultimate joy and happiness at each moment of it's ongoing development. This is its ultimate achievement.

9. The role of Conscience

Conscience too, determines or reflects context. Context "lost" or "forsaken" i.e. to be bereft of conscience results in insensitivity and non-evolutionary scenarios. An example of this is present even in a call for team support at the expense of conscience. Teams can have many colours. Conscience has one, namely truth. The call to shelving conscience in favour of team support puts context aside as well as sense of purpose of Mankind. A recent example of this was made by a declared lesbian Member of Australia's Federal Parliament, when recently in relation to a vote to decide the fate of a minority call to legalise gay marriage she said, "one must put conscience aside and instead favour team support". I have coined the terms "garriage" instead of marriage, "usding" in place of wedding, "gayvorce" instead of divorce and "usd" instead of wed, a vocabulary expander in which the focus is on "us" who

are “the same”, which in contrast to “we”, as in “both”, male and female, “who come together as complementary though different to create more than what we can be on our own. Recognising that purpose is the reflection of conscience, and living accordingly, is the height of evolutionary development. Marriage is entered into. It is a contract by which one undertakes a commitment not only to self and selfishness, but to the creation of a Garden of Eden made so by living and talking and doing “Good noW!”®, which means to live with another in mind and bringing life into a world that has stomal connection in which stomal drive is evident, through grateful awareness and sensitivity to context, to supply and responsibility, to live by.

9.1 Conscience and Stomal Drive: The link that determines functional reproductive human behavior

Stomal drive is the focus on energy intake as the diver of evolutionary change. It is really a Stomal Drive life model of response to challenge through reciprocal interaction and resultant evolution.

Conscience or context in terms of stomal drive is the awareness of where our energy source is coming from and that intake of this energy is to ensure survival, provide energy for reproduction and related activities, such as nurturing, and to escape to ensure survival or adapt. When we lose this focus, of stomal drive, and the essential reasons for stomal drive, because of desire or an “ego” oriented focus, which are in addition to essential need, we are entering a territory that increases “risk” to our selves and needs. In other words, when our responses, in terms of General Systems Theory, instead of being appropriate and adequate, to ensure needs are met and evolutionary standards are met, to maintain the constancy of the milieu exterior, the responses, whether biochemical behavioural, are either inadequate or inappropriate and lead to disease or to aberrant behaviour and patterns of response.

Susceptibility or involvement of the X chromosome to epigenetic change provides a targeted focus in terms of reproduction and thus evolution. In the case of plants and in animals these effects are responsive to environmental change and to behaviours that are natural or instinctive and not subjective. However, in human beings, ongoing environmental stress leads to aberrant behaviours, which reintroduces a Darwinian view, which is inflexible and negative in that it does not leave room to improve, only to survive at all costs, compared to the Lamarckian concept of evolution, and Improvisation Theory, which embodies flexibility, reciprocal interaction and an harmonious diversity, even along the line espoused, as noted by Acton[58], by Spencer, and Leibniz and Spinoza, through engagement and involvement in the process of evolution, and in the evolution of Mankind, which begs the question, “Could anything be more purposeful and exciting?”.

9.2 What is the alternative?

Loss of contextual awareness, loss of self identity, is the first break down of a reciprocal response. Clan like behaviour is the result of lack of self confidence, of feelings of insecurity, and need to find someone like self. Why do we need to even think in terms of Evolution drop out or being anti-social?

For instance i regard, homosexuality as being due to gender development stress and/or gender development arrest that occurs because the “male” characteristic, as hunter, has been stunted, arrested during development because of “bullying”. This could occur in the shape of an over dominant male parent or overdoing/over doting mother figure and where their roles are reversed, so much so, that the mother dominates the father, so he too appears to be emasculated., as could occur if or when she decides to issue proceedings to evict the husband from the house, and so by edict or force rather than consent alters the fundamental model of hunter gatherer, akin to plant and animal reciprocity in divergence. Thus where the mother as gatherer, as in tree or plant, who stays home, and father, as hunter, or animal, in terms of going out to work to earn a living to pay for the necessary food source for the family’s wellbeing and development is disrupted, not willingly, but where the balance is under constant stress and / or threat, unbeknown to the parents, their behaviour is having an affect on their child's attitude and development, which could affect the child’s esteem and sense of self that may manifest as gender stunting or lack of development if the perception is one of emasculation in males and inability to receive love in females.

If this is true, then it would seem that balanced relationships and ideal gender roles could or would ensure balanced gender development in their offspring. What, though, can a person do who has been affected?. The answer lies in reconditioning and reprogramming behaviour to accord with need and not with sensual and physical desire or susceptibility, but rather to, what Chassidic teaching refers to as generic soul powers of Delight or pleasure from, and Will over, the Intellect, one's Emotions and physical organs in equal measure [64], and the true meaning of “Free choice” being to do the moral and ethical choice, rather than to succumb to susceptibility and/or to temptation.

Thus the role of conscience and empowerment of that gender spark to fulfill the Will and Delight aspect of the soul which are in tune with conscience and stomal drive, may provide direction to achieve the practical return to that point in development from which one can regenerate growth and achieve the realisation of one’s soul’s hidden connection to truthful Desire from and Will over, rather than be controlled by self-fulfilling wants and desires. One only has to know that the only commandment G-d gave in the Garden of Eden to Adam and Chava was to be fruitful and multiply. In the perfect surroundings this is G-d’s ultimate delight and Will, and the nucleus of family. How this is achieved out of the Garden of Eden is attainable by adhering to Torah Laws, the Ten Commandments and the Seven Noachide Laws for all Mankind, without exception, to be able to focus on recreating the environment that permits balanced functioning and development.

I had a patient whose grandson was bashed over his head by a drunken father from which he suffered psychologically. The mother and father divorced later in life, after the father sought to have his wife admitted to a nursing home, and obtained a Guardianship order over her because of her psychiatric condition. I assessed her and found her to have total capacity of decision making and recommended a lawyer who had been successful in ensuring the Rights and wishes of other patients and persons in the same position, who were hounded as well by the office for the Public Advocate appointed by the Victorian Civil and Administrative Tribunal (VCAT). When the Guardian arrived at his grandmother’s house, wearing studded wrist bands and for all intents and purposes could have been wearing a similar belt and collar

around her neck, wanting to reclaim his mother, the son, his mother and his elderly grandmother slipped out from the home and did not return for two nights. The execution of the Order was stayed and they won the legal battle that ensued, in the Supreme Court. The Tribunal's order of a Guardian was revoked and the mother received her rightful share to 50% of the sold joint property. The win changed the sons behaviour. He stopped being homosexual, though he said he was "happy he had experienced kissing a man", and settled on a farm with a woman, with whom he had shared interests, such as writing, who became his life companion. Though in his late forties he was about to complete a law degree when i last had contact with him. As would be expected in Australian Tribunals anyone who opposes and wins is dealt with. Given his success and fearlessness in fighting for people's wishes and Rights, the lawyer, who challenged one of the VCAT appointed trustees, who had himself been a VCAT member, was "found" and struck off. He coped less well than i, because i continued to exercise my conscience, aware that i could still be a tree, protective of others, even if not registered, and be more free to do "Good noW!"®, and register the trade mark, so that i remain in a position that allows myself and anyone to link in to this idea, symbol of prosperity in terms of behaviour and ensuring "happiness", best interest and freedom to make appropriate and adequate, in fact, relevant choices according to need and relatedness, of stomal drive importance.

From this it seems that the answer to developmental aberration of any kind, is to develop one's sense of conscience together with self empowerment strategies which helps one's spiritual and emotional development, through a return to basic stomal drive and a general systems approach to restore one's milieu extérieur or eco-social situation. The way to do this is to include use of symbols, even in the form of foods[1], that promote self empowerment and connection to community and one's cultural roots, including connection to the understanding of plant and animal divergence and their interrelatedness, and functional reciprocity, and the evolution of Mankind including oneself in this, even at this moment. To be a part of this grand design is to realise one's ultimate purpose.

Such a sense of belonging empowers one to overcome anything that stands in the way, by bolstering connection and loving kindness to do things in a most considerate and helpful way. This facilitates reconnection with one's spiritual energy source and source of life. It permits self empowerment through contextual i.e. conscience, and behaviour correction, without distraction. It restores connection by adding meaning.

Where the stress is ongoing and continuous[2] and is more ingrained, even inherited, and where the stress continues to have harmful and ongoing effects, it leads to severance or weakening of the connection to meaningful relationships intended to build self confidence and gender identity. Feelings of not being understood, of feeling disconnected causes feelings of disempowerment, that causes dysfunction, as long as the organism survives, referring to and including Mankind.

The sensitive zones, which we know from plant studies[14], such as reproductive capacity, are affected, whether at the epigenetic level involving the X chromosome, or in Mankind, by altered attitudes and behaviour that impact on the basic stomal drive connection and awareness, of essential functioning, namely energy acquisition for survival, including growth and energy to be able to adapt, to reproduce and in animals, including man and womankind, to escape.

9.3 Summoning Stomal Drive as a Life Model. The ultimate Defense mechanism

Plants do have thorns and other defense mechanisms but ultimately, being sessile and a source of food for all creation, their divergence also focussed on reproductive techniques and seed dispersal, rather than on mechanisms of escape.

It makes Darwinian sense, in terms of evolution of species, that a feature of the genome, in plants and animals, has one set pair of chromosomes developed that determines "gender", as this makes the reproductive "risk" or "opportunity" more sensitive to environmental change. On the other hand it also makes sense in terms of the holistic functioning of Creation that where aberration occurs, first to go is the reproductive capacity of the organism, in order not to put down the runt, but to strengthen the resultant.

In the case of humans, whose desires, emotive and intellectual or physical, may or do often prevail over the general soul powers of Desire and Will[64], that are of Stomal like connection, Stomal Drive's life connections become tethered - in other words awareness of needs become buried, though are never lost. Conscious arousal of energy intake needs, for survival and growth, reproduction and escape, is needed to access this level of awareness. Basic energy need and drive can be subverted to areas that are superficial, not life saving nor life promoting. Stomal drivers need to be adequate and appropriate[2] and honed for successful evolution.

If the organism's biochemical or behavioural response is inadequate or inappropriate or epigenetic effects prevent expression of the X chromosome so as to inhibit breeding, by retarding, or cessation of, progressive gender identification during development, or, permit full X chromosome expression to enable reproduction in those whose attitude and behaviour continues to develop, because of an optimal external milieu, the effect is to safeguard the lineage of the organism. By permitting reproduction orientation only where optimum function and gender identification is maintained in spite of the change in environmental conditions that impact on it[2], results in evolution. Essential to survival are environmental conditions that do not impact on progressive gender identification during development, in other words, where the stomal drive model and General Systems Theory model are operative and is both appropriate and adequate.

The stomal drive model, incorporating the reciprocity of plant and animal form and function, also incorporates symbolism[1], where the symbolism is self empowering and contextual, focusing on the positive, kindness to others and being G-d fearing or awe inspiring as well as generous, compassionate and loving, see Table 1, which is incorporated in culture. Using foods as symbolism[1] is evolutionary[53]. However, when symbols are used to cause feelings of guilt and sinfulness, focussed on the negative, their effects is deadly and undermines safeguards that result in terror, war and disempowerment, which is counter-evolutionary.

The Stomal Drive model is a symbol of reciprocity and evolutionary drive, and a Life model (Stomal Drive Life Model, 9.1 above). For example, the situation of a mother at home rearing the child in and around the home, and gathering there, is being more sessile and plant like, and the father out hunting to be able to provide for his family, exhibiting mobility to a greater extent than the female parent, is more animal like,

even though she does the feeding if the offspring are still too young and as yet underdeveloped to be able to do so on their own, because her form and nature is designed to do that.

The scenario of reciprocal interaction creates the optimum milieu, external environment, that promotes the basic stomal drive connection and reciprocity between plant and animal lines. in the form of a harmonious relationship in which gender roles are clearly defined, with understanding regarding what is in the best interests of the child, without argument. This ensures, or provides greater opportunity for optimum gender identification during development, that is manifested by balanced attitudes and behaviours, that result in progeny who are also able to relate to a member of the opposite gender, in a meaningful way. There are wins all round, as occurs within plants and animals and in the reciprocity exhibited, though divergent, between them, to ensure ongoing fruitfulness and evolution.

Each accord, of seeming opposites, of complementary form, whether as male and female or animal and plant, is a spark of the origin, as "in Beginning", that from its inception is wholly focussed on the fulfillment of the purpose, or, evolution of Creation, and manifestation of the Delight and Will of Divine Intelligence or Creative Imagination within the diversity of complementary form yet functional, reciprocal behaviour, as paired units, of all Creation.

9.4 Implementation of transformation. The Stomal Drive Life Model. Own your own Stomal Drive Life Dairy.

Own means to accept responsibility.
A simple method to incorporate responsibility and teamwork, i.e. everyone, and consciousness, i.e. to do "Good noW!" and yet consider self, society and environment (nature), the eco-social environment, requires transformation of "awareness of self" to "self awareness", which incorporates context, society and environment into one's conscious existence. This needs and can be done daily at every moment, with every breath in time, by expanding this moment, by asking ***"What about Me?"*** **in three ways and record your responses in your own Stomal Drive Life Diary.** Enjoin with others also, to do so, so that we all evolve, each in reciprocity with one another, and in harmony with our energy source, in a sustainable living and thriving diverse environment. Thank G-d.

Stomal Drive Life Diary

Date & Time	**What**, about me**?**	What **About** me**?**	What about **Me?**
noW!	How do others regard **what I am doing noW!?**	How am i benefitting the environment, **noW!**.	I accept upon myself to **noW!, do "Good noW!" do acts of Goodness and kindness**

10. Conclusion

Evagination (vertical vector) and Invagination (horizontal vector) are complementary not opposites. Evagination leads to vegetative and sessile development, whereas invagination leads to stomal development and animal drive, which is an evolutionary design. Stomal drive in animal life and stomata development (pores on the underside of leaves that control evaporative loss and fluid movement from the roots to the leaves) in the plant kingdom dominated their diverse evolutionary drives, though complementary, in terms of energy acquisition, survival, reproduction, growth and evolution. Environmental challenge provides the context in which evolution occurs. Similarly, context is the essential ingredient to ethics[11,41-46,,62,63] as it challenges opinion and facts to be reported with objectivity and honesty. This characterises higher evolution expected of Mankind, i.e. acknowledgement of the functional whole and the contribution of each of the parts that are necessary. The recognition that both are necessary bestows meaning[57] .

This perspective provides a unique look at plant and animal cell divergence and reciprocity and applies General Systems Theory first proposed in 1982, as the Constancy of the milieu extérieur, akin to Claude Bernard's "milieu intérieur"[5], to develop a model called "Improvisation" Theory of Evolution, which I described then, in 1982, as Lamarckian. This paper puts these ideas together, and I believe provides an exciting model overview of what is going on. Finally the peak of evolution appears to be a contextual perspective and an ethical one, which bridges the "Creationist - Evolution" divide, that is simply an artificial one. Similarly, it opens the way to breaching the divide between the secular view and the view of an holistic Oneness, by uniting science and biological design in a G-dly connection, simply by acknowledging context and sense of purpose, to change the outlook directed at self and ego and selfishness and self-serving agenda to one of awareness that is all-inclusive, in which each of the parts has a specific and different role in support of all, that could help to unite the awareness of purpose of Mankind and save the planet, creation and us.

The relevance and importance of an eco-social understanding to medicine, health, public policy, environment and evolutionary advances and ethics can only ensure life and diversity of life continuing on this planet. This greater understanding and awareness, of the uniqueness of the contribution of each to the whole requires immediate and considered responses, as part of the evolutionary process, just as, tacking in the wind permits the boat to sail in a chartered direction and remain afloat requires teamwork. Teamwork though is not enough as far as man is concerned. He has to pull his weight to use all the faculties given by G-d to him, namely conscience and "Free choice", as defined above. This requires heightened awareness of context, i.e. conscience, that only Mankind is accountable for, in terms of freedom of choice, as we understand it, to choose the reciprocal and interactive path. It is this quality that is required in teamwork, for the benefit of all.

Conscious appreciation by Man that the fulfillment in life and of our very existence is attainable through the joy of G-d's Oneness, which is our singular sense of purpose, permits the evolutionary process. Through this, the evolutionary process provides the ultimate joy and happiness at each moment of it's ongoing development. And this, at each moment and step of the way, is the evolution of Creation's ultimate achievement - the awareness of the contribution of others to our own development and purpose, and visa versa, which is the very reason for our existence.

References

1. Myers JB. Periodontal Disease – A Physician's viewpoint. In: "Emerging Trends in Oral Health Sciences and Dentistry". Edited by Mandeep Singh Virdi, ISBN 978-953-51-2024-7, Published: March 11, 2015 under CC BY 3.0 license. © The Author(s). Intech publishers. http://www.intechopen.com/books/emerging-trends-in-oral-health-sciences-and-dentistry/periodontal-disease-a-physician-s-viewpoint. http://dx.doi.org/10.5772/59264
2. Myers, J.B. Biochemical response to change in the environment and the nature of "essential" hypertension. Medical Hypotheses 1982; 9: 241-257.
3. Richards EJ. Opinion. Inherited epigenetic variation — revisiting soft inheritance. Perspectives Nature Reviews. Genetics 2006, 7, 395-401. doi:10.1038/nrg1834 Published online 14 March 2006
4. Meyerowitz EM. The plant plan: multicellular life in the other Kingdom. Harvey Lect. 2000-2001;96:51-72.
5. Bernard, Claude. Lectures on the Phenomena of Life common to Animals and Plants. Vol 1. Translation by Hoff HE, Guillemin R, Guillemin, L. American Lecture Series No 900. Charles C. Thomas, Publisher, 1974. ISBA 0-398-02857-5. Springfield, Illinois, USA.
6. Hochachka, PW, Somero, GN. Strategies of Biochemical Adaptation. Saunders, Philadelphia, 1973, p 16.
7. Myers JB. The Eco-society or Eco-social© environment and heart disease. A General Systems Approach. PM358. World Heart Federation's World Congress of Cardiology 2014. May 4-7, Melbourne, Australia.
8. Myers JB. General Systems Theory and the Eco-social© Environment. 7th International Conference on Urban Design. 2014 Sep 1-3; Adelaide, Australia. http://urbandesignaustralia.com.au/archives/2014/index.php
9. Genesis1:26-27.
10. Genesis 2:21-22.
11. Genesis 1:1.
12. Cardona T, Murray JW, Rutherford AW. Origin and Evolution of Water Oxidation before the Last Common Ancestor of the Cyanobacteria. Mol Biol Evol 2015 32: 1310-1328.
13. Tsiantis M, Hay A. Comparative plant development: the time of the leaf? Nat Rev Genet. 2003 Mar;4(3):169-80.
14. Law JA, Jacobsen SE. Establishing, maintaining and modifying DNA methylation patterns in plants and animals. Nat Rev Genet. 2010 Mar; 11(3): 204–220. doi:10.1038/nrg2719 PMCID: PMC3034103 NIHMSID: NIHMS245823
15. Irvine RA1, Lin IG, Hsieh CL. DNA methylation has a local effect on transcription and histone acetylation. Mol Cell Biol. 2002 Oct;22(19):6689-96.
16. Charlesworth D. Evolution of Sex Chromosomes in Plants. Published online: September 2013. Wiley Online Library. doi: 10.1002/9780470015902.a0025144
17. Bird A. DNA methylation patterns and epigenetic memory. Genes & Dev. 2002. 16: 6-21. Cold Spring Harbor Laboratory Press. doi:10.1101/gad.947102
18. Bernard C. ibid. 211-218.
19. Myers, JB, Morgan TO. Alteration in renal function and haematocrit in normal people who have a rise in blood pressure with extra sodium. New Zealand J Med 1983; 96: 895-7.
20. Myers, JB. "Sodium Sensitivity" in Man. Medical Hypotheses. 1987; 23: 265-276.
21. Myers JB. Interaction of cardio-renal and bone marrow-renal mechanisms and the Micro-circulation (capillary) Theory of Hypertension. XXVIth World Congress of the International Union of Angiology (IUA). Sydney, Australia. 10-14, August 2014. http://filesformailing.minervamedica.it/volumi/IUA2014.pdf, pages 57-65.
22. Myers, JB, Morgan TO, Edwards K. Effect of sodium intake on intra-erythrocyte sodium concentration in normotensive subjects and patients with untreated mild hypertension. Clinical and Experimental Pharmacology and Physiology. 1983;10(3): 361–364. Article first published online .8 Jun 2007, DOI: 10.1111/j.1440- 1681.1983.tb00213.x
23. Rahn H. Acid-Base Balance and the Milieu Intérieur. In: Claude Bernard and the Internal Environment. A Memorial Symposium. ED Robin, Ed. \ 1979. p 185. Marcel Dekker Inc, NY. ISBN 0-824 7-6894-9. Proceedings of a Symposium held at Stanford, February 10, 1978.
24. Robin ED. Limits of the Internal Environment. In: Claude Bernard and the Internal Environment. A Memorial Symposium. ED Robin, Ed. 1979. p 263. Marecl Dekker Inc, NY. ISBN 0-824 7-6894-9. Proceedings of a Symposium held at Stanford, February 10, 1978.
25. Myers, J. Medical Ethics: Context Is the Key Word. International Journal of Clinical Medicine. 2014; 5, 1030-1045. doi: 10.4236/ijcm.2014.516134.
26. Myers JB. General Systems Theory (GST). A general biological theory based on two assumptions of biochemical response provides a biochemical model of understanding epi-genetics, disease, behaviour, aging, death and evolution. Journal of Paediatrics and Child Health 2014; 50 Suppl. 2: 10. Special Issue: Abstracts for the RACP Future Directions in Health Congress 2014, 6-9 May 2014, Brisbane Convention & Exhibition Center/ was presented at the RACP Future Directions Meeting in Auckland 18-21 May , 2014/5774. JPC 50:S2 http://onlinelibrary.wiley.com/doi/10.1111/jpc.2014.50.issue-s2/issuetoc
27. Myers JB. Cellular Mechanisms and Ageing. Inaugural International Conference. Australian Society of Cellular and Molecular Gerontology Conference, March 19-22, 2001, Melbourne, Australia.
28. Myers JB. Biological Ageing: Effect of environmental exposure and manipulation. Theory and Practice. Australasian Journal on Ageing 2009:289s2; 2009.
29. Ling C, Groop L. Epigenetics: A Molecular Link Between Environmental Factors and Type 2 Diabetes. Diabetes. 2009 Dec; 58(12): 2718–2725. doi: 10.2337/db09-1003 PMCID: PMC2780862
30. Myers JB. Do Biochemical Responses in Utero determine hypertension and cardiovascular disease in later life? The 2nd International Conference on PreHypertension & CardioMetabolic Syndrome. January 31-February 3, 2013, Barcelona, Spain.
31. Waddington, C. H. The epigenotype. Endeavour 1, 18–20 (1942).
32. Waddington, C. H. Canalization of development and the inheritance of acquired characters. Nature 150, 563– 565 (1942).
33. Waddington, C. H. Genetic assimilation of an acquired character. Evolution 7, 118–126 (1953).
34. Mayr, E. in The Evolutionary Synthesis (eds Mayr, E. & Provine, W. B.) 1–48 (Harvard Univ. Press, Cambridge, Massachusetts; London, England, 1980).
35. Mayr, E. The Growth of Biological Thought (Harvard Univ. Press, Cambridge, Massachusetts, 1982).
36. Holliday, R. The inheritance of epigenetic defects. Science 238, 163–170 (1987)
37. Pal, C. & Miklos, I. Epigenetic inheritance, genetic assimilation and speciation. J. Theor. Biol.200, 19–37 (1999).
38. Transformations of Lamarckism. From Subtle Fluids to Molecular Biology. Overview. (2011) Edited by Snait B. Gissis and Eva Jablonka. MIT Press. 9780262296373
39. Myers JB. (2011) Theoretical and Conceptual advances. The backlog of trees. The 1st International One Health Congress. Melbourne February 11-14, 2011. S156;111. EcoHealth 7, S8-S170, 2011. DOI: 10.1007/s10393-0101-0376-0
40. Myers JB. (2013) Is The Future Direction in Health About Bureaucratic Self Interest or Creativity, Professionalism and Wellbeing? Rights and Responsibility Must Replace Quality and Safety In Health Care. RACP Future Directions in Health Congress. Perth, Australia 26-29 May 2013. Int Med J. 43, Issue S3, Abstract: pages 1-55.
41. Myers JB. (2007) 'Duty to care', or, 'duty of care' and the goal of medical treatment. Intern Med J, 37(3), 211.
42. Myers JB. (2009). The Australian Medical draft code of professional conduct: good practice or creeping authoritarianism? Australian Med J,191: 190-191.
43. Myers JB. (2010) Clinical indicators: the role of patient in goal setting, evaluation and ethical practice. Intern Med J, 40(3), 244-246.
44. Myers JB. (2013) Is The Future Direction in Health About Bureaucratic Self Interest or Creativity, Professionalism and Wellbeing? Rights and Responsibility Must Replace Quality And Safety In Health Care. RACP Future Directions in Health Congress. Perth, Australia 26-29 May 2013. Int Med J. May 2013: 43, Issue S3, Page 1-55
45. Myers, J. (2014) Medical Ethics: Context Is the Key Word. *International Journal of Clinical Medicine*, **5**, 1030-1045. doi: 10.4236/ijcm.2014.516134.
46. Myers JB.(2015) Erratum to "Is Alzheimer's Disease an Adaptability Disorder? What Role Does Happiness Have in Treatment, Management and Prevention" World Journal of Neuroscience 5: 180-188] DOI: 10.4236/wjns.2015.54027 Pub. Date: July 31, 2015.
47. Epel ES et al. (2004) Accelerated telomere shortening in response to life stress. PNAS 101(49): 17312–17315, doi: 10.1073/pnas.0407162101
48. Puterman E, Lin J, Blackburn E, O'Donovan A, Epel E, (2010). PLoS.Published: May 26, 2010. DOI: 10.1371/journal.pone.0010837
49. Genesis 1:31.
50. Rico-Guevara, A., Araya-Salas, M. (2015) Bills as daggers? A test for sexually dimorphic weapons in a lekking hummingbird. Behav. Ecol. 26, 21-29.
51. Eichten SR, Swanson-Wagner RA, Schnable JC, Waters AJ, Hermanson PJ, Liu S, et al. (2011) Heritable Epigenetic Variation among Maize Inbreds. PLoS Genet 7(11): e1002372. doi:10.1371/journal.pgen.1002372
52. Mendizabal, I., Keller, TE, Zeng, J., Soojin V. Yi. (2014) Epigenetics and Evolution. Integrative and Comparative Biology 54(1), 31-42.
53. Eva Jablonka and Marion Lamb (2005) Evolution in Four Dimensions – Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life. MIT Press.
54. Deuteronomy 13:1
55. Charlesworth D (2002) Plant sex determination and sex chromosomes. Heredity 88: 94–101. DOI: 10.1038/sj.hdy.6800016
56. Deuteronomy 11:13-21.
57. Viktor E. Frankl (1959) Man's Search for Meaning.

58. Acton HB. Encyclopedia Britannica. Accessed 8 July 2015. Herbert Spencer, Re: “last man standing”.
59. Wang Z. (2010). MicroRNA: A matter of life or death. World J Biol Chem. 2010 April 26; 1(4): 41-54. doi: 10.4331/wjbc.v1.i4.41.
60. Dawkins R. (2006). The Selfish Gene. See Preface to 30th Anniversary edition. Oxford University Press.
61. Isaiah 4:2,3. Translation from the Tanach, Stone Edition.
62. Kemp R. (2015) Article published in The Melbourne Jewish report, Volume 7, pages 3 and 25. 25.July 1, 2015. www.thejewishreport.com.au,
63. Myers JB. (2015) Invited Submission. Legislative Council Inquiry into the State election 2014. Parliament.vic.gov.au. August 2015.
64. Rabbi Yosef Yitzchak Schneerson of Lubavitch. Assembled from the talks and letters of The Rebbe. Compiled and arranged by The Rebbe, Rabbi Menachem Mendel Schneerson, Sh’lita, of Lubavitch. In HaYom Yom, “From Day to Day”. Elul 2, p 84 and commentary page 118. Published by “Otzar Hachassidim Lubavitch”. NY, 1993.