



Towards a University
for a Regenerative
Third Horizon



Module 1 - Qualsystems: Number, Qualities and Perception

QUALITATIVE SYSTEMS THINKING



QUALITATIVE SYSTEMS THINKING

Page 1.1

1





QUALITATIVE SYSTEMS THINKING

Page 1.2

2

Qualitative Systems Thinking



6 May – *Module 1:*
Numbers, Qualities and Perception
13 May – *Module 2:*
The Basic Qualsystems
20 May – *Module 3:*
The Intermediate Qualsystems
27 May – *Module 4:*
The Complex Qualsystems
3 June – *Module 5:*
The Cosmic Laws of Unfolding
10 June – *Module 6:*
Unpacking complex systems
17 June – *Module 7:*
Practice: Tuning in to Qualsystems
Thursday UK Evenings 19:00 – 21:00



3

Personally and professionally do you feel

- life is increasingly filled with demands hard to keep up with
- the changes in our life context are increasingly complex and challenging
- we are overloaded with information hitting us from many sources and channels
- yet we wonder which information is really significant.
- we get caught up in FOMO (fear of missing out) and easily oversimplify our position just to get relief.
- our life style is increasingly dominated by technology, apps and massive systems over which we have no control (cyborg world)
- emergencies are emerging and merging – pandemic, climate, extinction, habitat destruction, democracy destruction, livelihood destruction



QUALITATIVE SYSTEMS THINKING

4

4

We are sleep walking into disaster!

- Domination of mechanistic and reductionist thinking
- Knowledge explosion
- Instant access
- Expanding self-publication
- “I Google therefore I think”
- ‘World Without Mind’ (*)
- “I Facebook therefore I am”

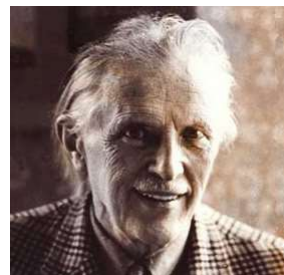
(*) *World Without Mind: why Google, Amazon, Facebook and Apple threaten our future*, Franklin Foer, 2018, Vintage, London



Where We Start – in J.G. Bennett’s Words

“The elements of structures in isolation or connected by general laws are only shadows of reality and there is always a step to be made in order to pass from knowing about them to becoming aware of the structures in themselves.

The problems of knowledge — how we know, what we know, what knowing is — all arise because of the inherent incompleteness of any possible knowledge. *No such problems arise in understanding structures.* This is not to suggest that understanding is easier than knowing; but that the difficulties in the way of understanding are of an altogether different kind.”



John G. Bennett



Understanding is Different

We understand by a mental act that is synthetic and creative; whereas we know by an act that is analytic and automatic.

These mental acts must be projected into the mind and the mind must be able to experience them sensitively as images and consciously as judgments.

Some degree of understanding must always be present for effectual action in the world."

Bennett



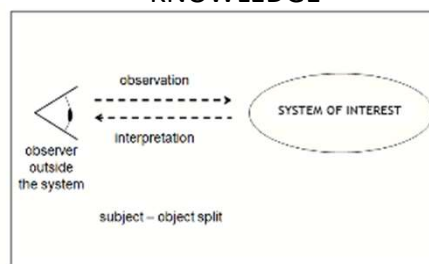
QUALITATIVE SYSTEMS THINKING

7

7

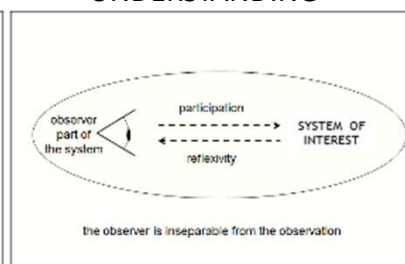
A Different Basis is Needed

KNOWLEDGE



Data and knowledge are considered to be external fact; can separated and classified; is 'outside' the user of the knowledge; is second-hand.

UNDERSTANDING



Knowledge is internalised to the experience of the user; the user participates in the field of knowledge; the understanding is first-hand



QUALITATIVE SYSTEMS THINKING

8

8

Qualitative Systems Thinking provides a new foundation for understanding

BUT

We will need to become familiar with some deep principles that contradict those we are used to from the mechanistic deterministic worldviews that are embedded in our culture.

ESPECIALLY stepping out of the 'Aristotelean trap'

The Law of Excluded Middle which gives rise to splitting, categorisation and reductionism:



**An entity cannot, at the same time,
be A and not-A**

BUT

For example, in the cybernetic approach, effects and causes and observers are inseparable from the system they are observing. Circular logic is permitted.



QUALITATIVE SYSTEMS THINKING

9

9

Instead we need to adopt the *Axiom of Relationship*

***The relations by which
terms are related are an
integral part of the
terms they relate.***



Georg Hegel



QUALITATIVE SYSTEMS THINKING

10

10

Some Historical Roots: Pythagoras

"BY HIM THAT GAVE TO OUR GENERATION THE TETRAKTYS, WHICH CONTAINS THE FOUNT AND ROOT OF ETERNAL NATURE".

"the numbers and the symmetries existing among them are called harmonies, and elements compounded of both (symmetries and harmonies) are called geometrical"

"the Nature of number is the Decad"

"harmony resides in number"

"their associated geometricals are elements compounded of the numbers and their inherent symmetrical harmonies"

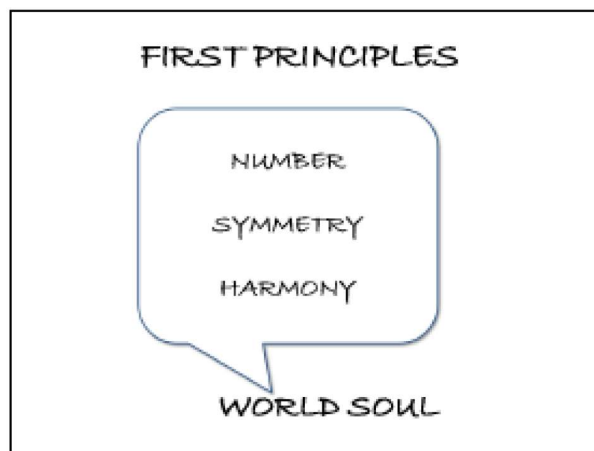


QUALITATIVE SYSTEMS THINKING

11

11

*First principles –to- Numbers –to- Symmetries
–to- Harmonies –to- Geometricals*

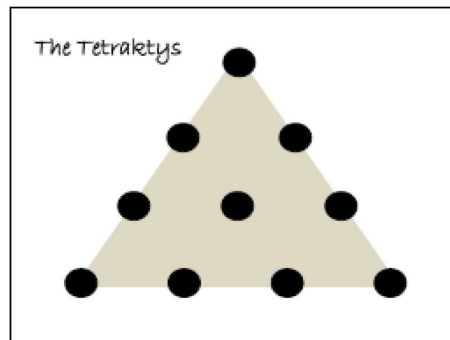


QUALITATIVE SYSTEMS THINKING

12

12

The Tetractys – the essence of number perceived



These are the numbers 1 2 3 4 5 6 7 8 9 10. The key here is that are not regarded as 'simply number' but each dot represents an **incomparable set**. This means that each number (dot) is inherently and irreducibly **unique**. This is a diagram of **qualitative variety**.

One dot for **oneness**

Two dots for **duality**

Three dots for **triplicity**

Four dots for **quaternity**

and so on up to the sacred **decad**.



J.G.Bennett's Principles of Qualitative Systems Thinking (QST) ON UNDERSTANDING

- | | |
|---|---|
| 1. QST is an instrument of understanding | comes only when one sees for oneself |
| 2. There are principles according to which everything can be described and understood | 8. However, knowledge must come before understanding; we must be able to recognise what we are looking at |
| 3. All structures in the world can be understood by simple patterns or systems | 9. To understand is to see the way things belong together, and to see why they are together as they are. |
| 4. Patterns can be expressed in terms of one characteristic quality | 10. Understanding relates to underlying patterns, relationships, and meanings |
| 5. These qualities arise from the experienced significance of number | 11. Experience as a key to understanding |
| 6. The primary aim of QST is to develop the power of understanding | 12. We should be able to relate what we wish to understand to something that we have experienced |
| 7. Understanding cannot be taught and | |

Bennett, J.G. *Elementary Systematics – A tool for understanding wholes*, Ed David Seamon, 1993, Bennett Books, Chapter 1, p8-17



Bennett called qualitative systems thinking General Systematics

Confusion: Systematics has become predominantly a biological term.

*"Systematic biology (hereafter called simply systematics) is the field that (a) provides scientific names for organisms, (b) describes them, (c) preserves collections of them, (d) provides **classifications** for the organisms, keys for their identification, and data on their distributions, (e) investigates their evolutionary histories, and (f) considers their environmental adaptations."*

Wikipedia



Biological Systematics implies classification which separates things into categories. It is essentially a science of quantities.

Bennett's idea is that understanding requires integration, synthesis, holistic perception of wholeness and relationship. It is essentially a step towards a **science of qualities**.



QUALITATIVE SYSTEMS THINKING

15

15

Qualitative Systems as

discrete qualities of mutual relevance
between self and universe that give rise
to understanding

NOT

a split between self and universe with minimal
mutual relevance providing knowledge without
true understanding



QUALITATIVE SYSTEMS THINKING

16

16

A modern name for qualitative systems as a discipline:

Qualtum Systems

The term quantum from modern physics has become fashionable in any number of non-physics fields.

Quantum (quantity) derives from the discrete energy levels at the atomic level that can be characterised by numbers as in the theory of atomic structure and electron orbitals. The shift from one quantum state to another emits or absorbs energy.

Qualtum (quality) implies an equivalent notion of qualities also having discrete attributes also characterised by numbers which treated in a different way – the qualitative significance of number.

The basis of how this is defined and how it unfolds is

QUALTUM THEORY



QUALITATIVE SYSTEMS THINKING

17

17

The Qualtum View of Number

integral integrate integrity

INTEGER

Qualtum theory holds a key to a different way to think about integrality than, for example, the approach developed in by Ken Wilber. Instead of integration via classification in a framework this approach attempts to unravel the meaning and significance of integer or number itself. The argument will move from the idea of a system of numbers to numbers as themselves systems. In this approach number systems provide a holistic way of studying integrality which yields essential insights for developing understanding.



QUALITATIVE SYSTEMS THINKING

Page 1.18

18

Foundational Principles

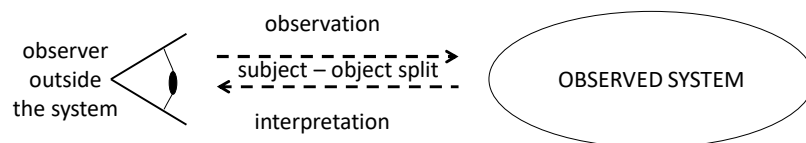
- ❑ whole numbers, integers, have qualitative significance and meaning
- ❑ these structures of meaning are inherent in both universe and man
- ❑ these structures are recurrent and isomorphic at different levels
- ❑ patterns of understanding correspond to the qualities of these number systems
- ❑ understanding is a state of coherence between “in mind ” and “in world”
- ❑ intuition can be trained to resonate understandings by means of number systems



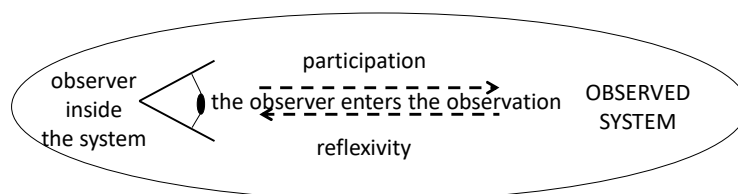
19

Second-order cybernetics and second-order science – a new context

1st ORDER (reductionism) – discovery not dependent on the state of the observer



2nd ORDER (phenomenology) – state of the observer determines discovery



20

20

Qualsystems as a Community of Practice

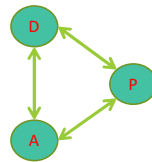
FORMAL STRUCTURE AND **D**ISCIPLINE



ENACTIVE PERCEPTUAL **P**RACTICE



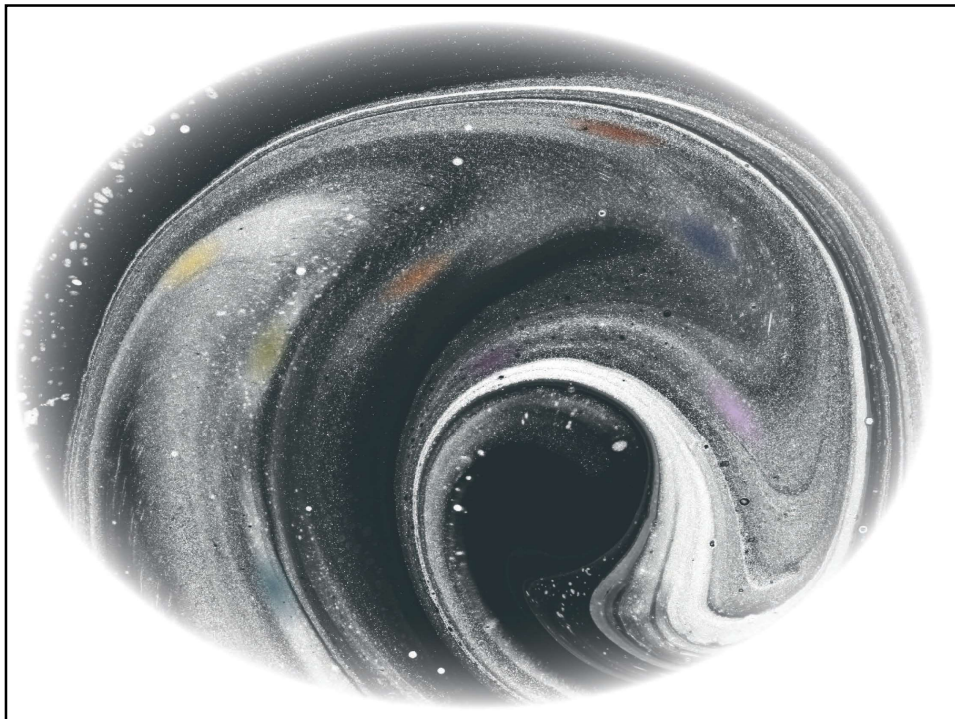
INVESTIGATIVE AND GENERATIVE **A**PPPLICATION



D,A and P are mutually relevant so all need to be present for qualsystems to work well.

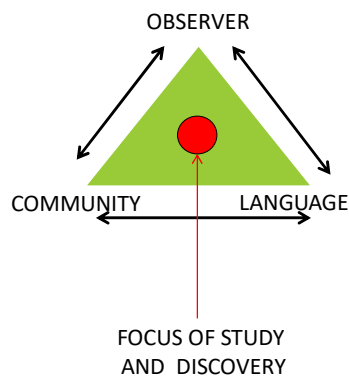


21



22

What is Second-order Science?



There are seven key attributes which characterise a second-order science approach. (*)

At this stage we will take the central one as the basis for our practice.

This has been called 'The Triadic Network' of observation<->language<->community.

Like chicken, egg, rooster: Is necessary to have all three to have any one.

(*) Hodgson, Anthony. 'Some Implications of Second Order Cybernetics'. In *New Horizons for Second-Order Cybernetics*, 349–58. Singapore: World Scientific, 2017.



23

23

How does this affect our approach to learning qualsystems

OBSERVER = You the practitioner

COMMUNITY = This study group

LANGUAGE = The structure and terminology of qualum systems and its use

Process Tasks in adopting the Study Method

OBSERVER \leftrightarrow COMMUNITY

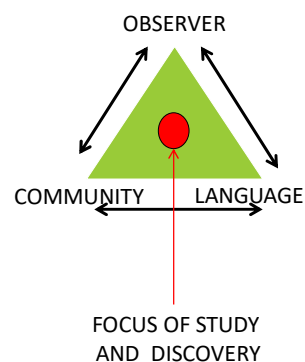
Participation in the community of study

OBSERVER \leftrightarrow LANGUAGE

Learn the symbolism and terminology of qualsystems

LANGUAGE \leftrightarrow COMMUNITY

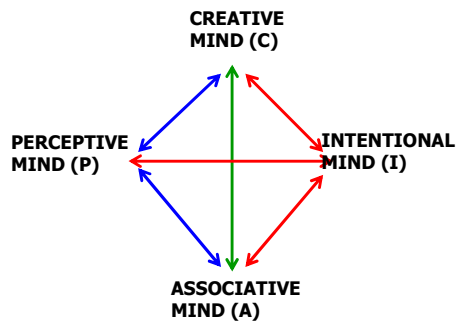
Practice sharing experiments, experience and insights with the community of study



24

24

The attention structure for assimilating qualsystems



When you practice using and understanding a qualsystem (e.g a triad or a pentad) you start from your intentional mind.

I-P is contemplating the pattern of the system

I-A is evoking from memory the relevant terminology

I-C is holding on to the question or topic you are trying to understand

P-A is recovering the meaning of terminology and symbol

P-C is being alert to new meaning that has been evoked

C-A is the reframing of mental patterns that creative insight brings – the aha or the shock!



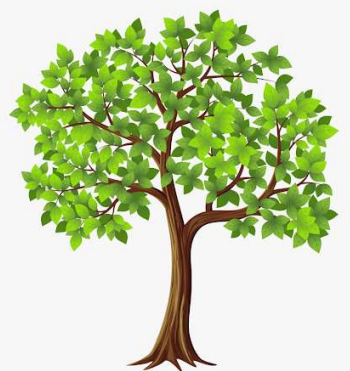
25

25

Perception Reflection Exercise The Tree Exercise Part 1

Express your understanding of a tree, jotting thoughts, images, etc on a sheet of paper.

Keep your notes for future reference in the course



QUALITATIVE SYSTEMS THINKING

26

26

Definition of a Qualtum System

A **qualtum system** (abbreviation - *qualsystem*) is a **coherent set of n independent yet mutually relevant terms** where n is a whole number.

The **coherence** is perceived as a **qualitative attribute** of fundamental **wholeness** pertinent to that order of system and

in a system each of the **n terms** has a distinctive **character** revealed in the role it plays in the system as a whole.

Characters are distinct **and** mutually relevant to each other to be what they are.



27

The Progression of Integers and Qualsystems



Emerge from 0,1,2,3,4,5,6,7,8,9, etc

All co-present present in the *implicate* order.

Spiralling out - the glycerine experiment

<https://www.youtube.com/watch?v=Yy0-InVVgIs&t=4s>

<https://transitionconsciousness.wordpress.com/2015/09/19/the-experiment-which-inspired-david-bohm/>

Only partially evidenced in the *explicate* order depending on the stage of development of the Monad in question.



QUALITATIVE SYSTEMS THINKING

Page 1.28

28

J.G.Bennett's Principles of Qualitative Systems Thinking (QST)
ON STRUCTURES AND SYSTEMS

- | | |
|--|--|
| 13. Knowing is a power that can be communicated but not transferred; understanding is a power that can be transferred but not communicated | 19. The search for understanding implies faith that there is meaning and significance in the vast array of nobles that we meet at every turn |
| 14. If we learn to see patterns in different outward forms, we will also be able to recognise them in new, unfamiliar situations | 20. Every organised totality is a structure composed of systems |
| 15. If we understand the world, we understand ourselves. And if we understand ourselves we understand the world | 21. The structure can be an object, the living being, a process, an event, the situation, the human group, an historical era, and so forth. |
| 16. We can transfer our inner understanding outside and our outer understanding inside. | 22. Structures have a pattern corresponding to one or more of the basic systems |
| 17. To understand anything better means to understand everything better. | 23. No one system alone can elucidate the complexity of real world structures, and we must draw on several |
| 18. Every organised totality is a structure composed of systems; | 24. One of the most remarkable things to see that all inventions that really work are built according to the underlying patterns identified by QST |

Bennett, J.G. *Elementary Systematics – A tool for understanding wholes*, Ed David Seamon, 1993, Bennett Books, Chapter 1, p8-17



QUALITATIVE SYSTEMS THINKING

29

29

Qualitative Systems Thinking



- 6 May – *Module 1:*
Numbers, Qualities and Perception
- 13 May – *Module 2:*
The Basic Qualsystems
- 20 May – *Module 3:*
The Intermediate Qualsystems
- 27 May – *Module 4:*
The Complex Qualsystems
- 3 June – *Module 5:*
The Cosmic Laws of Unfolding
- 10 June – *Module 6:*
Unpacking complex systems
- 17 June – *Module 7:*
Practice: Tuning in to Qualsystems

Thursday UK Evenings 19:00 – 21:00



30

References

World Without Mind: why Google, Amazon, Facebook and Apple threaten our future, Franklin Foer, 2018, Vintage, London

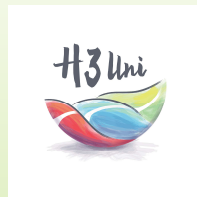
Hodgson, Anthony, Graham Leicester, Karl Müller, Tom Flanagan, Gerald Midgley, Daniel Wahl, Timo Hämmäläinen, et al. 'Second Order Science and Policy'. *World Futures* 73, no. 3 (2017).

Hodgson, Anthony. 'Qualitative Systems Thinking: A Fresh Look at J.G.Bennett's General Systematics'. In *50th Annual Meeting of ISSS*. Sonoma, California: International Society for the Systems Sciences, 2006. <http://journals.issis.org/index.php/proceedings50th/article/view/323>.

Seamon, David. *Life Takes Place: Phenomenology, Lifeworlds, and Place Making*. Routledge, 2018.

Bennett, J.G. *Elementary Systematics – A tool for understanding wholes*, Ed David Seamon, 1993, Bennett Books, Chapter 1

Bennett, J.G. *The Dramatic Universe: Man and His Nature*. Vol. 3. 4 vols. Hodder and Stoughton, 1966.



APPENDIX

QUALITATIVE SYSTEMS THINKING



APPENDIX – Some Post-Bennett Influences on Systems Understanding

Some people who have contributed to the emerging paradigm that begins to legitimise qualitative systems thinking



QUALITATIVE SYSTEMS THINKING

33

33

Ecology of Qualitative Systems

Qualsystems can be located in systems philosophy with these principles in mind:

Heinz von Foerster – 2nd order cybernetics

Stafford Beer – complexity and control

David Bohm – qualitative infinity

Ross Ashby – requisite variety

Kurt Gödel - incompleteness

Georg Hegel – integral relationship



QUALITATIVE SYSTEMS THINKING

34

34

APPENDIX – Some contemporary influences

Some people who have contributed to the emerging paradigm that begins to legitimise qualitative systems thinking



QUALITATIVE SYSTEMS THINKING

35

35

In Cybernetics Circularity is Legitimate

When cyberneticians were thinking of partnership in the circularity of observing and communicating, they were entering the forbidden land:

In the general case of circular closure,

*A implies B,
B implies C, and –*

*O! Horror! –
C implies A!*



Heinz von Foerster



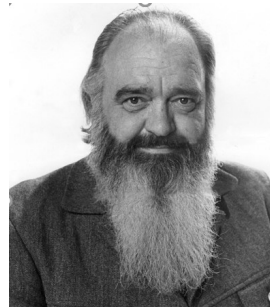
QUALITATIVE SYSTEMS THINKING

36

36

The Unavoidability of Complexity

*Man is a prisoner of his own way of thinking
and of his own stereotypes of himself.
His machine for thinking
the brain
has been programmed to deal with a vanished
world.
This old world was characterised by the need to
manage things –
stone, wood, iron.
The new world is characterised by the need to
manage complexity.*



Stafford Beer

Complexity is the very stuff of today's world.



QUALITATIVE SYSTEMS THINKING

37

37

Qualitative Infinity, Implicate Order and the Holomovement

If we start from the notion of the qualitative infinity of nature, we are able to arrive at a definition of the mode of being that does not contradict the possibility of its becoming something else.

The implicate order plays a primary role, while the explicate order a secondary. What we see are relatively stable and independent patterns, maintained by constant underlying movement of enfold moment and unfoldment.

What is basic to the law of the holomovement is the possibility of abstraction of a set of relatively autonomous sub-totalities. We can now add that the laws of each sub- totality generally operate under holistic conditions.



David Bohm



QUALITATIVE SYSTEMS THINKING

38

38

Law of Requisite Variety

Ashby's Law for systems of organisation:

Only variety can absorb variety

Modified for qualitative systems:

Only qualitative variety can absorb qualitative variety



Ross Ashby



QUALITATIVE SYSTEMS THINKING

39

39

Theorem of Incompleteness

It is impossible to construct a theoretical system that will not close on itself with the result that there will be questions which are undecidable within that system.



Kurt Gödel



QUALITATIVE SYSTEMS THINKING

40

40



END

QUALITATIVE SYSTEMS THINKING



QUALITATIVE SYSTEMS THINKING

Page 1.41