

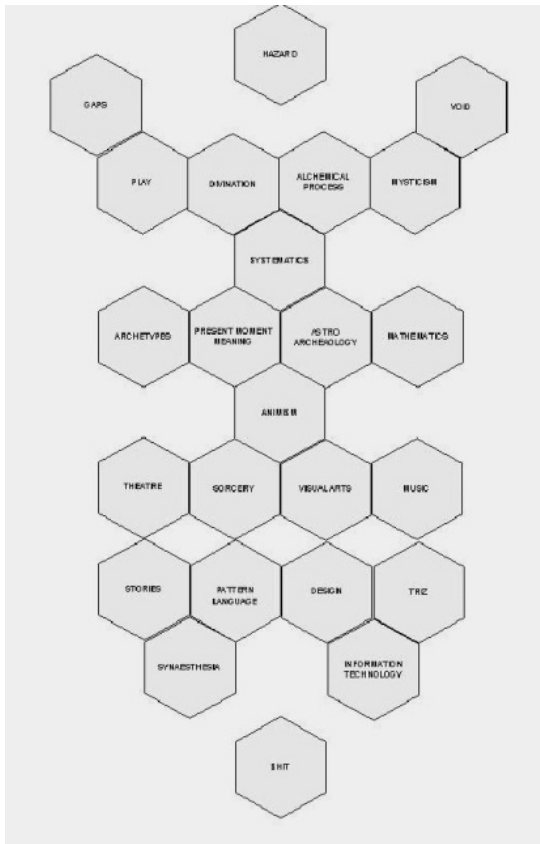
SYSTEMATICS - Perspectives



***School of Athens* by Rafael 1509**

What is evident is Raphael's artistry in orchestrating a beautiful space, continuous with that of viewers in the Stanza, in which a great variety of human figures, each one expressing "mental states by physical actions", interact, and are grouped in a "polyphony" unlike anything in earlier art, in the ongoing dialogue of Philosophy. [Wiki]

Outline of the Gatherings



In 1997 the DuVersity held the first of a series of 'conferences' largely dedicated to following up some of the major themes of John Bennett's research. This first was called 'All of Everything' in acknowledgement of Gurdjieff's magnum opus but was also dedicated to systematics. Contributors included John Allen of Biosphere 2 fame and practical systematist, Edith Wallace a Jungian analyst who began her tissue paper collage practice while at Bennett's academy in Gloucestershire, now taken up by Karen Stefano, co-founder of the DuVersity, William Pensinger author of the fabulous novel *The Moon of Hoa Binh* which espoused the idea of three kinds of time, and Robert Fripp founder of King Crimson who produced 'soundscapes' for us. Friend and colleague Jerry Toporovsky hosted the event at his Baltimore Center for Holistic Health as he also supported a series of seminars I ran in the 1990s (now published under the title 'The Baltimore Series'). By the year 2000 I decided to run an annual 'gathering' of people interested in systematics as such. My aim was to open up the subject and develop new methods for its practice. And, very much, to widen horizons and not regard the 'systems' as God-given 'truths' but as starting points for intelligent enquiry.

The results of these meetings were often published as quite extensive reports, now amounting to about 600 pages, difficult to assimilate. What follows here is an outline summary of the kind of thing we engaged in over the years. It can only be suggestive. The diagram above, taken from work done in GX shows a range of concerns and was just one attempt to grasp what systematics was about.

The story begins with the emergence of systematics in the 1960s. It came out of Bennett's work on his magnum opus *The Dramatic Universe*. The first document explicitly about systematics was: *Systematics - a new technique in thinking* by John Bennett and Anthony Blake *. The *Journal Systematics* ran from 1963-1974 and Saul Kuchinsky's *UNIS* came out in the 80s. Saul's initiative inspired an online site in the 90s now called www.systematics.org. About ten years ago I created a Compendium of references to allied subjects of systematics and their representatives.

*(<http://www.anthonyblake.co.uk/SYSTEMATICS.pdf>)

The story is one of diverse influences being woven together under Bennett's principle of 'integration without rejection'.

1. Case studies

in the early days of systematics (the 1960s) at Coombe Springs we ran several weekend seminars and engaged in several study groups working at actual cases or examples. Amongst the seminars there were topics of marriage, cooking, art, etc and in the study groups two prime examples were drama (see end list of publications and source material) and 'the scramble for Africa'. It's important to note that these exercises involved groups – thus allowing for a spread of knowledge and diversity of background.

The approach was strictly linear, progressing from monad to dyad, to triad and so on. As such it was a strict discipline and gave experience of making transitions between systems - which is as integral a part of systematics as the systems themselves.

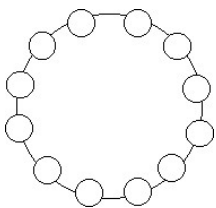
2. Questions of Method

Very little of this educational work was published. I realised that few people had experience of going through the progression of systems, instead relying on favourite systems such as the tetrad as models used separately from others. Another realisation was that hardly anyone bothered with the stage of the monad. The two realisations were addressed in Gathering II: How do we start? How do we move from one system to another?

3. Molecules of Meaning

The starting point involves deciding what the *raw material* is (hence systematics is analogous to cooking!). In a way, the raw or raw material is undifferentiated experience; what has been called 'felt-sense'. To talk about this seems hard. Allied to this primary question was the further question: What are terms made of? This raises the possibility of a deeper level than that of that of terms.

From work with LVT (see below) came the practical concept of *molecules of meaning*. In brief, such MMs (as they are abbreviated) are formed in sentences that articulate a specific content. They require a certain measure of objectivity: 'I hate you' is an unlikely MM, while 'The way sunlight falls into my room reminds me of my childhood' might be an meritorious example. Context is also most important. Every MM says something specific and is not a generalisation or opinion. So it requires a certain detachment from theories and prior judgments.



The starting point was made the gathering of MMs on the given theme - which was, aptly, globalisation. The monad was constructed out of MMs in the form of a circle called the monadic ring. This form gives the possibility of the deriving further meanings, in two senses: (a) as the *reason of the order* of the MMs around the circle, (b) by the possibility of combining MMs to *generate new meanings*.

In Gathering II the order chosen was historical, temporal or algorithmical (in contrast with the Leibnizian principle used much later in gathering XIV). Whatever order chosen it would influence all further results.

4. Combinations.

A primary idea, taken from systematics itself, was that a combination of meanings (in the strong sense that Bennett himself called coalescence) would generate – give birth to, transmute into, synergise, etc – a new unitary meaning. This we assumed to be the prototype of systems viewed as composed of terms. The terms have characters, while there is a single synthetic attribute for the system. A graphical method evolved to produce sets of dyads, triads, tetrads, etc. There would be more than one instantiation, at least for the simpler systems. For example, in the case of 12 MMs there would be six pairs – taken across the circle – and we would need to them compound them into just one. In this way, the nature of the monad as unity in diversity and diversity in unity, is carried through, supporting a sense of continuity and consistency.

5. Story of Terms.

One of the rules set out by Bennett was that the terms of one system should not be carried over the next. Firstly, this was to stop people just adding on another term to make a new one, which would obscure the holistic, integral nature of systems. Secondly, it was to require a rethinking at each stage. However, he never explained how one might go from one set of terms in system N to another set in system N + 1.

A way of doing this was developed later – see below – as the lattice of understanding. In Gathering II it was realised by the fact that the different terms, as the different systems, were composed of the same ingredients but in different ways. The systems derived in this way were more properly called classes than sets. The guiding notion was called by Wittgenstein 'family resemblances'.

6. Structural Communication.

The study of systematics is inadequate if it does not involve Bennett's book *The Dramatic Universe*, in which he evolved systematic method, and the parallel development of *structural communication*. The nature and role of *The Dramatic Universe* in developing systematics was studied much later in Gathering XII.

Study Unit 4
Structure of the Phase
Diagram of a Simple System

RESPONSE INDICATOR			
1. identification of the free energy G	2. derivation from equilibrium points	3. rate of transfer of matter depends on temperature	4. entropy per unit mass
5. the total pressure of two ideal gases is the sum of the pressures each would have if the other were not there	6. differences of volume for same temperature and pressure of different phases of a given mass of a substance	7. latent heat of vaporization at a certain temperature	8. the vertical relationship between P and T using an equilibrium curve
9. Retention of energy	10. open system	11. latent heat of fusion at a certain temperature	12. specific heat
13. heat transfer	14. surface energy	15. attractive forces between neighbouring molecules	16. the chemical potential of a phase tends to transfer matter
17. solutions of molecules into liquid energy	18. pressure of surroundings of system	19. two-phase interface	20. the critical temperature below which two phases become possible

Structural communication (SC) was the origin of the concept of MMs. In SC a governing set of MMs was stored in a random array, in contrast with our monadic ring, but nevertheless corresponding to the basic purpose of the monadic stage. As used in education an SC unit asked questions requiring a subset of the MMs as replies. Answers were tested by combinations of included and exclusive criteria, which led to tailored feedback.

The mechanics of structural communication were improved in LVT where magnetic disks, with statements written on them, were employed as MMs such that they could be moved about on a whiteboard to make any combination or pattern.

Three operations in LVT are:

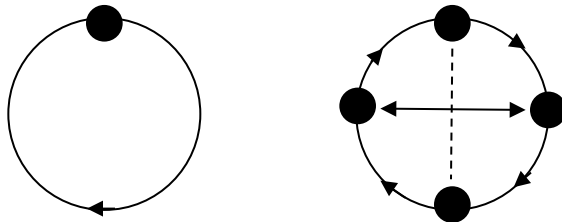
integrate – system

organise – term

gather –MM

where we show correspondences with three-fold structure of systematics we had evolved, in which there is a layer 'below' that of terms. Later we shall indicate a further layer 'above' systems. Gather in LVT was more obviously random.

The stage of integration was mostly guided by the ancient technique scholars now call *ring composition*. In this technique, a complex narrative is compounded of a linear, temporal sequence and a non-linear, synchronous or eternal, pattern; as in a monadic ring. Ring composition was also an influence in representing – and hence thinking about –systems. Most traditional forms of representation of systems show them as static, symmetrical forms. But every system can be seen as a cycle with a circular 'container' and an internal dynamism. This was later amplified in consideration of musical scales and harmonic structure.



7. TRIZ.

In Gathering III we made a connection with TRIZ, the Russian system of innovation created by Altshuller more than 50 years ago. He derived his system from the study of hundreds of thousands of patents. The outline method follows a systematic repression with special emphasis on the dyad or contradiction. Further, it makes use of 40 principles: forms of four and can be useful in conceiving of new approaches to design problems; a task then being correlates type of problem this type of solution.

There are interesting parallels between some of the principles and some of the systems. This casts systems in the role of design or problem-solving principles. They can then be seen as aids to achieving goals and realising intentions in the world of doing. There is no simple correspondence between the principles of TRIZ and the systems of systematics but the correlation is illuminating.

8. Matchett.

Also from the world of design, the ideas of Edward Matchett - fundamental design method (FDM), the 3M equation, etc – were influential. One of his core ideas was:

media + matter = meaning

These terms may be related to systematics in the following way:

MEDIA

systems as forms of understanding

MEANING

systems as forms of knowing

MATTER

Media is the unknown, spiritual, super creative which can inform us with new or higher meaning. It carries with it the sense of being up to the moment, free of inertia, exactly suited to emergent need. Therefore it is somewhat above and beyond the systems.

Meaning is dynamic, and can be pictured as a series of droplets in a cloud chamber created by a cosmic process making a track or history. As such, it reminds us of the sense and feeling of the progression of systems. About the time he was working on systematics, Bennett played with the idea of a 'coalescence network' which reflects much the same ideas (it used a grid with axes relating to unity and diversity).

Just as we expanded the concept of systematics beyond the duo of terms and system by introducing MMs as 'deeper' or 'lower' than terms, so we can extend this triplicity to a four-fold scheme by including Matchett's media 'above' systems.

Media	XX
Systems	XY
Terms	YX
MMs	YY

X and Y are abstract designations meaning such things as 'spiritual' and 'material' respectively. The scheme is paradigmatic of an ubiquitous structure that implies creative intelligence.

9. Multimedia.

In his own programs Matchett made extensive use of many actual media such as images, sounds, books, objects and the environment. This influenced me greatly. Not least because Bennett emphasised concreteness and diversity. It was also in line with some current ideas on *embodied* thinking.

The MMs used in LVT symbolised this embodiment as they were concrete objects as well as carrying information. They could be moved about a surface while words written on that surface could not, representing a degree of freedom that text does not have (it is assumed that this degree of freedom when we are just writing is there but operates in the imaginary space we call the 'mind').

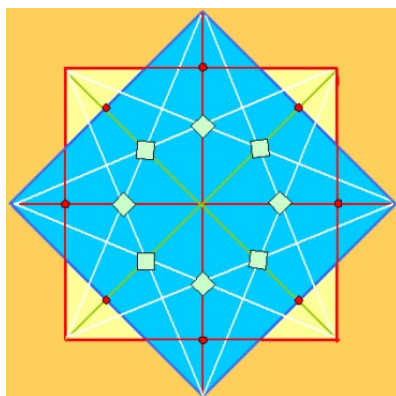
There are other, more sensory still, ways of combining elements in patterns. The following have had an influence on our understanding of systematics:

- a) the stone game in which stones picked up from a walk are one by one arranged by a group of people into a pattern that is created between them.
- b) tissue paper collage in which shreds of coloured tissue paper are glued to a surface to combine with and to interpenetrate into each other often in unexpected ways.
- c) sand tray play in which diverse objects are arranged in a tray of sand.

These techniques and experience of working with them carry the sense of levels of meaning or existence in which parts or elements, etc. on the one hand and patterns or combinations on the other merge into each other. A book like 'Color Code' exemplifies this, colours not being things.

10. Higher Systems.

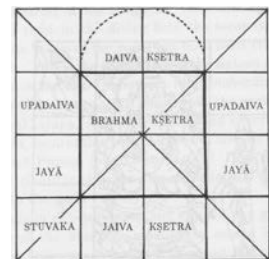
In Bennett's exposition of systematics the story of the systems more or less stopped at the octad (8), though taken up again just for the duodecad (12). The nine-fold system had the historical association with the enneagram of Gurdjieff and Bennett never addressed it on its own terms. This left the ten-term system, the decad and the eleven-term system, the undecad simply as rudimentary ideas. Part of the reason for this that there are relatively few examples available in cultures or philosophies to draw on. Bennett hazarded a guess as to their attributes - *integrative complementarity* and *synergy* respectively - but provided no structure for them or characteristics of their terms.



However, in his treatment of the octad he had created a precedent in that the system is represented as a kind of 'framework' or grid of relative meanings (in fact, as eight spectra). This resonates with traditional thinking about the double tetrad as in the *Vasusutras* on the principles of design in art where vertical, horizontal and diagonal lines are differentiated in meaning.

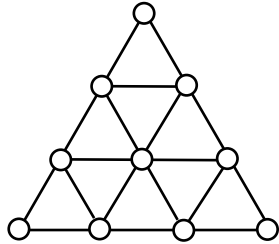
**[From the Vasusutras - Sutra 5:
Three (types of) lines are essential.**

Vertical lines are fire-lines like a flame soaring upwards, horizontal lines are water-lines, like the flow of rivers, diagonal lines going to the corners are wind-lines, like the transversal motion of the wind. With the above-mentioned lines one should make a grid (*kosthaka*) on the stone panel,



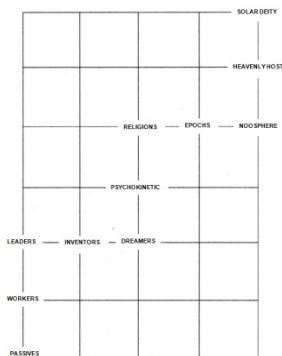
which is called *panjara*. This grid is the combination of the vertical, horizontal and oblique lines.]

As the octad was generated in the first place simply as 4 + 4, doubling the tetrad which has the form 2 + 2, the decad was developed as 1 + 2 + 3 + 4 as in the Pythagorean *tetraktys* in which are enshrined the first ten numbers. This exhibited many features: (a) as a summation or recapitulation of the first four systems, (b) as a three-fold symmetry, (c) as a paradigm for the further progression of systems (which was to become the guiding concept of the *lattice* - see below). We came to prefer the system attribute to be called simply *integration*. This links it to ten as the most common number-base (crucial to the

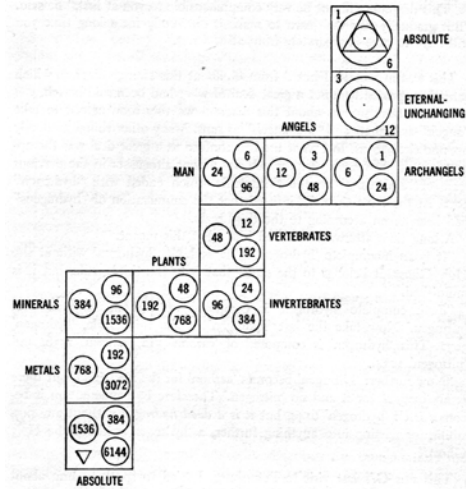


structure of the enneagram which has nine points but relies on the decimal system).

Our idea of the undecad started along another path. While the decad (like the octad) establishes a grid we saw the undecad as unfolding within a grid. We took as a guide the example given by Gurdjieff in what he called 'The Diagram of Everything Living' (which Bennett, unfortunately, altered to make a twelve-term system in his scheme of essence classes).



The metaphor of a pathway was paramount and it was allied with a representation in terms of a 'stairway', also a Gurdjieffian idea. In an application explored, the undecad grid enabled an exploration of possible classes or states within human existence. Interestingly, the grid needed to be drawn to accommodate the eleven-term structure as a stairway or pathway allowed us to explore other possibilities, that is: give meaning to positions unmarked and to every line of connection.



While retaining the term 'synergy' for this system we understood it also in the sense of 'patterns and pathways'. We have always been much influenced by Gurdjieff's idea of *form and sequence* as in the phrase we have just mentioned. The Form/Sequence pair is equally important with Unity/Diversity.

11. Meaning Games.

We mentioned the significance of groups for studying systems in the early days. When systematics is practiced by solitary individuals it is somewhat lacking in substance. Without diversity of viewpoints, most any practice becomes self-conforming.

The emergence of 'meaning grids' from work with higher systems naturally lent itself to giving them a function similar to that of a *game board*. Such a board can be used by more than one

person or 'player'. MMs become the equivalent of counters such as are used in board games and can be moved around in the process of a game. An all-important concept was that of the *co-operative* game, in contrast with the more common competitive game (see Carse, *Infinite and Finite Games*).

Basic rules emerged of a typical three-fold form: Place, Move, Remove or Change (MMs). We also discovered that the overall shape of the grid (usually circular, triangular or square) was important and suggested a further kind of meaning (there are correspondences with the elementary systems monad to tetrad) that certainly influences how many players there can be but also resonates with Bennett's concept of 'framework laws'.

Embracing multiple players was important because: (a) it escapes sitting by oneself and cooking up some structured information ('system') that then has to be 'communicated to' someone else by means that destroy the dynamism of the process, (b) it follows the attitude that philosophy *should* be a 'team-sport' (in Timothy Leary's words) or dialogue (in Plato's writings), (c) it corresponds with Bennett's idea of diversity as essential for real thinking, (d) it makes use of the potential of a meaning grid for indicating meaning through points, lines and areas, which give understanding of the *mutuality* between elements of the system.

12. Games of Systematics.

By the time of Gathering VII we had the idea of systematics itself as a 'game'. This addressed the assumptions and principles of systematics. By identifying systems per se, that is according to their *integral number*, we suppose that large numbers of sets of N elements have a *sameness*. This sameness may take various forms: (a) by virtue of them having the same number of elements, that is, just as *sets*, (b) by virtue of the order of their terms, as *sequences* (defined order of terms a, b, c, d, e.. such that e.g. c is 'between' b and d), (c) by virtue of their *symmetries*, having the same division and mirroring of elements, or pattern of sub-sets. There were six more qualitative games. The idea of these games provides a way of looking at what identifying various instances of a set of N terms might mean.

In Bennett's exposition he claimed to have identified universal patterns amongst diverse phenomena according to number. To actually research and process a wide data base of number-typified systems across history, cultures and disciplines would be a considerable task. Such things have been done in the fields of cultural anthropology as in Gebser, Graves and Levi-Strauss but not by anyone in the sense of comparison by number. It is also difficult to grasp how authors identify sameness (Levi-Straus may be an exception).

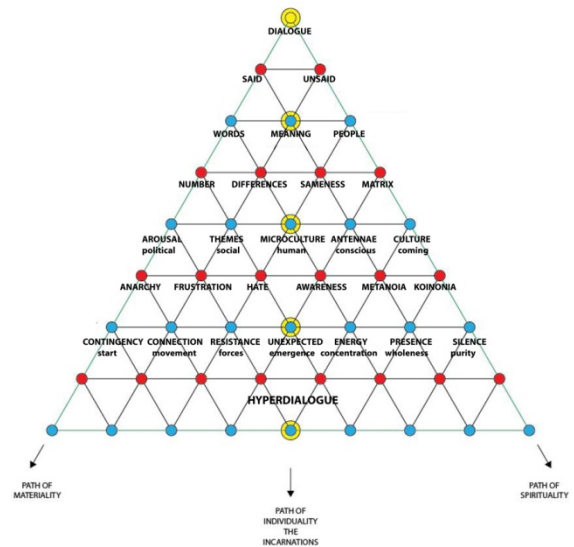
We must refer to a prime influence in the development of systematics: the foremost American philosopher Charles Sanders Peirce, of whom Bennett was aware. Besides the two well known principles of reasoning - deduction and inference - he added a third called *abduction*. Abduction operates in discovery and creates 'working hypotheses' that are not fixed. But many people have taken the systems as articulated by Bennett (or others) as fixed. Bennett himself drew on

existing paradigms such as the 'law of three' of Gurdjieff and the 'four causes' of Aristotle to formulate his table of systems and their terms.

I have always gone the way of *seeking out diverse* forms or examples of number-typified systems, which sometimes seem to falsify a given version, as a natural heuristic. This in fact follows the indications of Gurdjieff concerning the 'reason of understanding' which is to let what one knows play the passive instead of the active role.

13. Lattice

We wanted to emphasise systematics not as a series of fixed templates but involved in a structured process. The emergence of the higher systems and meaning games was the basis for the idea of the *lattice of understanding* - as the simplest form (excepting the 'bad form' of just adding terms on to existing systems to make new ones) that could indicate *how* terms from one system of N terms can transform into those of the next system N + 1. This offered a procedure, a method, or a 'logic' of progression. (Here, briefly, we must mention the influence of another American philosopher, Alfred North Whitehead, whose doctrine of creativity fits the lattice well).



The form of the lattice follows that of our decad, extending it to any number of terms. The terms of a system N point terms of the next system N + 1 by (a) extension (amplification, development, etc.) and (b) generation (combination of terms to make a new one). The systems are shown as lines along which terms are points. Each line implies or subsumes previous ones and the 'transmission' down through the lattice accumulates meanings and carries memories.



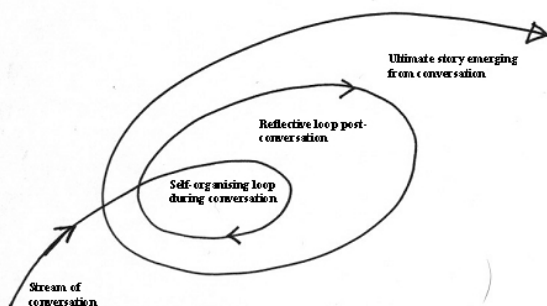
A symbol for the operation of the lattice can be found in Celtic traditions as the sign of *Awen* or poetic genius that later fused with the Christian Trinity.

An important implication of the lattice is that there is *one total system* within which the various systems have their place. Though the idea of a progression of systems is that of going from monad to dyad, to triad and so on we wanted to also have the sense of higher systems 'informing' lower ones in the inverse direction. This resonates with Gurdjieff's ideas of 'involution' and 'evolution' though not in any cut-and-dried way.

There is a suggestion that it is 'necessary' to produce more complex systems *just in order for them to be simplified*. This is connected with the phenomenal reality of our intelligence that takes in (learns) a given part of the creation in which we exist and restructures it according to our values and purposes. (If we think of Bennett's terminology, the given creation is Function, values come from Being, and purpose from Will). Thus technology (cf. Matchett and Antshuller) and personal transformation: take the pieces we are given passively and *actively combine them to a new unity*. Gurdjieff points to this understanding in his metaphor of the crucible in which 'powders' have to be fused by 'heat', or when he speaks of the three centres that have to be united to reveal a true 'I', or the action of *djartklom* whereby the three forces are split in order to reunite to renew, and the meaning of the term *triamazikamno* 'I put three together and do'.

14. The Dramatic Universe

Bennett claimed that his magnum opus was centred on the realisation of the hazards of existence and the uncertainty of our knowledge of it. He intimated that our thinking must free itself of outmoded, fixed, structures and become more flexible and dynamic. The volumes were also the fruits of many decades of work to make Gurdjieff's ideas intelligible and compatible with modern science. It was, therefore, an interpretation of the Whole - or 'All and Everything' - that reflected but did not slavishly follow Gurdjieff's cosmology, based on the principle of *starting from unity*. Two main pillars of *The Dramatic Universe* are (a) systematics, and (b) the concept of the present moment and *hyparxis*. Both these address *practical method* rather than any ideology or teaching in the usual sense (e.g. it does not matter what one believes in but what one does with one's beliefs).



The four volumes of the book and its predecessors (which were not published) represent or record an integrative creative process - which we believe we have been extending further in the series of Gatherings. We saw this as modelled on something we called 'the hyparxis of conversation'. The nature of the Dramatic Universe seen in these terms was discussed in Gathering XIII.

If we scan the four volumes we can see that there was an attempt to not only develop systematics but also to demonstrate and apply it, a goal not fully realised. In broad terms: Volume 1 dealt with [1] and [12]; Volume 2 with [2], [3], [4] and [5]; volume 3 (excluding the survey of systems) added [6] and [8], and Volume 4 concentrated mostly on [6] with some ventures into [7].

Before the published work, an earlier version has only three systems [1], [3] and [7] from the period when Bennett was still concerned with justifying Gurdjieff's approach. Bennett interpreted his major triad of function, being and will in the correlations [1] = Being, [3] = Will, and [7] =

Function. Already then he was identifying systems with metaphysical categories. In the later published Volume 2 we find:

[3] = will

[4]= being

[5] = essence

which leaves open those systems and those after. For the sake of having some terms we can put:

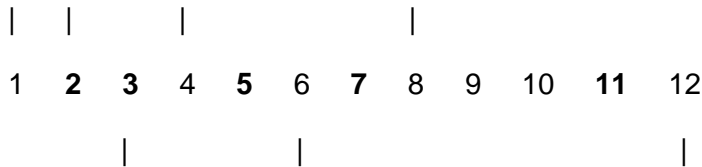
[1] = givenness or undifferentiated experience or prime matter

[2] = otherness or complementarity

[6] = present moment

The latter proved most important and featured largely in the last volume. Arguably, Bennett's reflections on the present moment brought him to see that it was always unique (Preface to Volume 4) and opened up a new vista that would not fit with the simplistic progression of systems as going on and on indifferently. He might have had to start all over again.

Taking the systems which were discussed and applied we can make a view of the series [1] to [12] in the following way:



Showing two 'octave' sequences (doubling). More or less everything comes from the first six numbers (see 18 below). The primes are boldened and from 3 to 11 show rapidly decreasing use (zero in the case of 11).

15. Diversity and Dialogue.

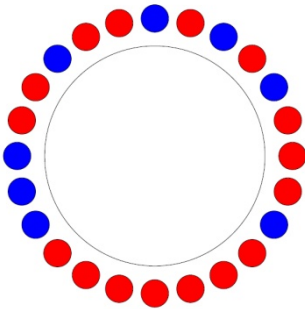
One of the many influences on our development of systematics has been the theme of *diversity* and its expression in the *dialogue process*. We proposed a measure of depth or 'substance' of discourse in terms of structural diversity, that is: the number of independent elements *effectively present* together in conversation, under the concept of N-logue. The form of a dialogue - people around a circle - also



corresponds with our early work on the monadic ring.

Dialogue was advocated by David Bohm partly under the influence of his therapist Patrick de Mare, a Group Analyst, who distinguished 'bandwidths' of group interaction according to ranges of membership as small, median and large. There are also very small and very large groupings. The ranges are in broad numbers centred around 7 or 8 for the small group, 16 to 20 for the median group and the large somewhere around 50 to a 100 plus. (Neurologically, 150 is about the limit for a person to be aware of).

N-logue was derived by creating forms of conversation corresponding to the elementary systems (1-4). Conversation must proceed linearly with one person speaking after another and not more than one at once. The method represents one of the few - if not the only - attempts to make systematics experimental or at least experiential. We were following the Gurdjieff principle that understanding comes through doing, not knowing.



In Gathering XIV the idea of diversity was taken up in the guise of the metaphysics of Leibnitz as interpreted by physicist Julian Barbour. The principle in question was *the maximization of diversity* and was worked out by Barbour in finite sets (in the diagram the *neighbourhood* of every element is different from those of all the others). This principle seems to epitomise intelligence in the universe. It is exemplified for example in the articulation of philosophies in any given period and region (see *The Sociology of Philosophies* by Collins) in which we see the

manifestation of a meaning space that calls to be filled in as many ways as possible (subject to the limits of normal human comprehension, this rarely means more than 7 to 10). From such considerations we derive some appreciation for the Bennett theory that the monad represents all that is essential in the systems: diversity is the supreme law encompassing all others.

16. Combinatorial Hierarchies

The notion of generating complexity, organisation and life from relatively simple elements is both ancient and modern. It is Pythagorean - all is number - and is now apparent in the work of people such as Conway (game of life), Wolfram (a new science) and Spencer Brown (laws of form). One of its forms is *combinatorial hierarchy*. Broadly speaking we start with one or few elements and by reflecting on them or combining them we generate more and more versions. This is applied in one interpretation for the series of natural numbers derived from the empty set {}:

$0 = \{\}$, $1 = \{0\} = \{\{\}\}$, $2 = \{0, 1\} = \{\{\}, \{\{\}\}\}$, $3 = \{0, 1, 2\} = \{\{\}, \{\{\}\}, \{\{\}, \{\{\}\}\}\}$ etc. under the rule

$0 = \{\}$ (the empty set) and $n + 1 = n \cup \{n\}$

Combinatorial hierarchies typically start from one element and proceed by a generative rule.

Eric Steinhart: Any combinatorial hierarchy has a general architecture:

- It has at least one bottom level of individuals.
- It has zero or more intermediate levels of combinations. A combination is formed when some number of simpler things are somehow unified to make a single composite or complex thing. Some writers will say that these combinations are wholes; others will say that they are collections – sets or classes.
- It has zero or one top levels of unsurpassable combinations. For most writers, these are the proper classes. Proper classes are collections that can't be members of more complex collections — after all, since they're at the top, there's nothing higher for them to be members of. They are unsurpassably general.

For any combinatorial hierarchy, there are three questions:

- What are the individuals on the bottom level?
- How wide is the hierarchy? Does each higher level include all possible combinations of objects on lower levels, or only some of those combinations?
- How high is the hierarchy? Does it have only finitely many levels or does it rise through endlessly many levels? Does it have a top system of proper classes?

Traditional cosmologies with their levels of complexity - defined in Gurdjieff in terms of number of laws operating in them - might be correlated with some system of combinatorial hierarchy. But Bennett's worlds of will was constructed to conform with Gurdjieff's doubling of laws and is somewhat arbitrary. A more logically worked out example was produced by a mathematical physicist Ted Bastin and his colleagues fifty years ago and relies only on an act of 'discrimination'. The aim was to arrive at a small series of levels that incorporated important physical constants. The series generates the numbers 1, 3, 7, 127, $2^{127} - 1$ (approximately 10^{38}) and there stops. It is a rare example of using abstract thinking to generate quantitative results that correspond with physical reality.

There are similarities with the calculus of Spencer Brown:

Let the *unmarked state* be a synonym for the void. Let an empty Cross denote the *marked state*. To cross is to move from one of the unmarked or marked states to the other. We can now state the "arithmetical" axioms **A1** and **A2**, which ground the primary arithmetic (and hence all of the Laws of Form):

A1. The law of Calling. Calling twice from a state is indistinguishable from calling once. To make a distinction twice has the same effect as making it once. For example, saying "Let there be light" and then saying "Let there be light" again, is the same as saying it once. Formally:

$$\neg\neg = \neg$$

A2. The law of Crossing. After crossing from the unmarked to the marked state, crossing again ("recrossing") starting from the marked state returns one to the unmarked state. Hence recrossing annuls crossing. Formally:

$$\neg =$$

In both **A1** and **A2**, the expression to the right of '=' has fewer symbols than the expression to the left of '='. This suggests that every primary arithmetic expression can, by repeated application of **A1** and **A2**, be *simplified* to one of two states: the marked or the unmarked state.

Of great significance is the use of the blank page as a symbol (as in **A2**). We continue to wonder about the possible role of a *zeroth* system - let us call it the *nullad* - as prior to the monad. It could be thought of as pure sameness. It is significant that a physicist such as Peter

Rowlands can take as his starting point *nothing* and derive everything from it (this is related to the idea that actually the total energy of the universe is zero). This approach is contrary to Bennett's: he always started from *something* such as his hyle or prime matter.

Getting down to the level or levels *at and before distinction* is not easy. Distinction seems to be a surface (maybe the essence of surface) such as that of water and if we push down below the surface a pressure forces us back again so that we return to floating on the surface. This surface is a metaphor for ordinary life.

17. Reflective Mathematics: Sentience and Self-Remembering.

The mathematics and physics of the recent hundred years or so is vastly different from that of the nineteenth century and before (though there are lines of evolution starting far back). By and large the ideas advocated in most esoteric circles are archaic in their methods and know nothing of modern techniques. Cybernetics introduced new thinking that appeared in both technology and philosophy. A crucial figure was Heinz von Foerster, contemporary of Gregory Bateson both of whom addressed self-reflection or the awareness that that could not be expressed in a linear way (e.g. neither as cause or effect). A sentient entity responds not only to its environment but also to itself. Similarly a system has internal relations.

van Foerster produced the idea that 'I am the observing of I observing myself', a reflexive proposition that is rendered in the equation:

$$I = (I (I)) \text{ that I call the } \textit{equation of self-remembering}$$

it is easy to see that $I (I)$ represents self-observation.

Non-linear mathematics involves equations in which a variable appears on both sides. A simple case would be:

$x = 1/x + c$ where we start by inserting a value for x (x_1) and then compute a value for x (x_2) and so on. Depending on the value of c (a constant) and our starting point the value of x could stabilise, become infinite, oscillate or any number of other things.

The general features of reflexive mathematics can be summarised as a combination of identity and difference. It can be looked at as an interplay between the first three systems. It also makes it clear that these very first systems call on us for the most subtle acts of mind and are difficult to get into and understand - and, certainly, are hard to express.

It is a mistake to regard systems as 'out there'; nor are they just 'in here'. They have their own inwardness - which means they incorporate self-reference. This is not easy to spell out in words and mathematical symbolism maybe more helpful (but it still consists of marks *written in lines* that obscures the more primordial meanings. A guiding idea is that *systems contain versions of themselves*.

The two ideas of differentiation and containment are displayed in the equation of self-remembering. But the simple idea of the square root of minus one - written as i - is informative.

It is often now interpreted to mean that i is an *alternation* between + 1 and - 1: +1, - 1, + 1, - 1, exemplifying how we can now see numbers not as static entities but as *movements*.

18. Harmonic Theory.

In recent years we have made contact with Ernest McClain and been introduced to the world of ancient harmonic theory. It is surprising that Bennett makes hardly any reference to music in his explications while, according to McClain and others, harmonic theory of great depth and subtlety was widely spread in ancient times. In Medieval times the university curriculum was based on the Quadrivium of Arithmetic, Geometry, Astronomy and Music (after the Trivium of Rhetoric, Logic and Grammar) and music in this context was highly mathematical.

Harmonic theory is based on the physical fact that when a note is struck - on a string, say - besides its given pitch N (frequency in modern terms, measured in cycles per second) sounds of higher frequency are also made, corresponding to frequencies $2N$, $3N$, $4N$, $5N$ and so on. These have amplitude decreasing with frequency but also variations characteristic of the particular instrument used. The series of integers 1, 2, 3, 4, 5, ... is the basis of all musical scales. A 'scale' is a series of notes typically between a given note or 'tonic' acting as 'do' (N) and its higher do ($2N$) this *interval* sometimes called the *diapason*. Two notes exactly the same sounded together is called *unison*. The 'basic miracle of music' is that sounding the two notes of a diapason together is similar in effect to a unison. The higher do sounds in some way as the *same*.

The phenomenon of the diapason gives us a view of the dyad as coming out of the monad, since the two do's are both the same and different. It also prefigures the nature of the harmonic series as a set of ratios that become - by and large, because there are cultural and subjective elements involved - increasingly discordant, unagreeable, at variance. The series 1, 2, 3, 4, 5, produces the series of *ratios*:

$1/1, 2/1, 3/2, 4/3, 5/4, 6/7, 7/8, 9/8, 10/9, \dots$

do do' sol fa mi re

unison, diapason, major fifth, major fourth, major third,

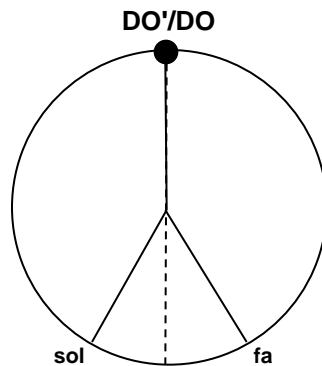
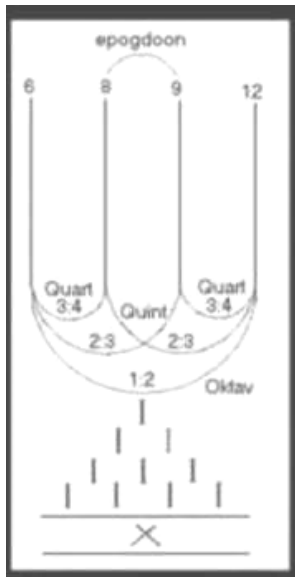
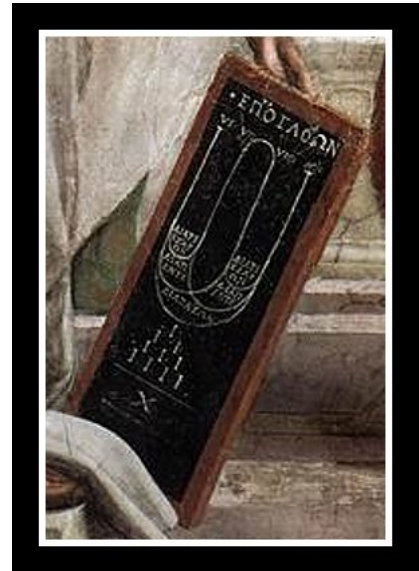
The two ratios $9/8$ and $10/9$ were taken as acceptable values for what was recognised in music as a single tone. $16/15$ is the smallest rational number corresponding to a semi-tone. A complete octave is a ratio that equals six tones (Debussy used a six-tone scale but this is rare). The musical scales made out of the simpler ratios were considered true or natural in contrast with actual musical scales that evolved according to instrumentation, custom and practice, culture and so on. The Pythagorean scale is like this:

DO $9/8$ RE $10/9$ MI $16/15$ FA $9/8$ SOL $10/9$ LA $9/8$ SI $16/15$ DO

but the piano is tuned according to a twelve-note scale in which every interval has the same value of the 12th root of 2 (close to $^{196}/_{185} \approx 1.059459$).

The idea of there being different scales is most important as a metaphor for such things as different worldviews or even systems. The composer Bernstein pointed out that there was a basic scale of just higher and lower as in the fact that men's and women's voices are pitched on the whole an octave apart. In such things as chanting there is a middle note. Nearly all folk music from around the globe is based on a pentatonic (5) scale. There is an ancient mathematics which generates scales of number 3, 5, 7, 9, 13 and so on.

Pythagoras made a scale (used by Gurdjieff) based on only the numbers 2 and 3 (shown here in a detail of the Rafael painting 'School of Athens' next to the figure identified as Pythagoras). The numbers and the geometry are explicated below.



The implications are immense and require studied reflection. Three things to notice: (a) harmonic theory is based on *ratios* - if the ratios of notes are the same then they have a common characteristic, no matter where they are in the musical spectrum of audible sound - this is true *invariance*, (b) the representation of a scale in a *circle* is a common device based on a modular arithmetic or counting (used by Gurdjieff in the enneagram), (c) simple ratios by combination and repetition can generate complex structures - one way of generating various scales is by repeating the simple ratio $3/2$ called 'the circle of fifths' - ancient texts reveal mathematical and musical structures as in this example (explicated by Richard Heath):

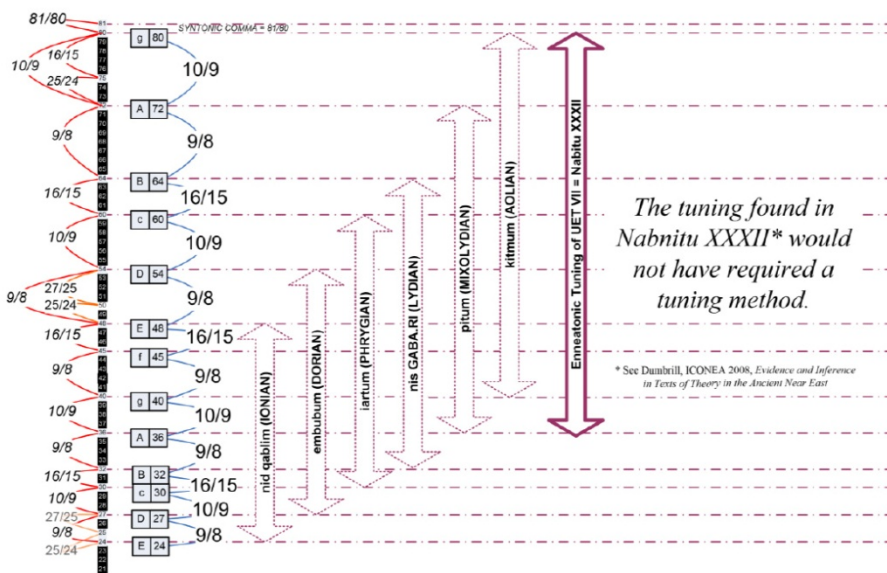


Figure 5 How the numbers between 20 and 81 create enlarged whole and semi tones to, from 24 to 80, sequence the six modes: Ionian, Dorian, Phrygian, Lydian, Mixolydian and Aolian, using numbers for "strings" found notated in 2800 BC Sumeria.

Such musical harmonic thinking renders much of ancient scriptures intelligible as in the relation of this number series to the six days of creation (Genesis) again as explicated by Richard Heath:



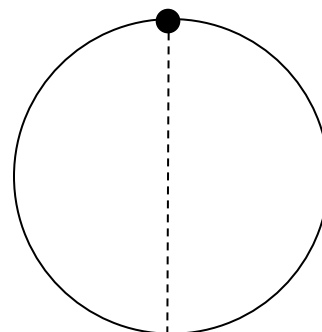
Figure 4 The early number field is dominated by the first three primes, {2,3,5}, which generate musical octaves, fifths, fourths, major and minor thirds through their successiveness [1:2:3:4:5:6] halted by seven, considered less harmonic. This has a mythic interpretation of being the six days of creation after which God rests, opening the Bible. Two wholetones [8:9:10] and semitone [15:16] completes the components of Just tuning without any resort to a Pythagorean tuning procedure such as the Cycle of Fifths.

19. Equivalence of Intervals

Bennett's systematics speaks of terms and *connections* (of various orders). 'Connections' can mean a range of things. In its common usage it means a link between two things, but systematics implies the possibility of relationships between more than two things (and as discussed by Bertrand Russell in his *Principles of Mathematics*). It also has the subtle meaning of 'mutuality' as well as the idea of 'interval' derived from music. If we imagine the terms of a

system in a string or around a circle, portraying them as points, then will there be the same 'distance' or interval between them? Gurdjieff suggests, in his discussion of the 'law of seven', that in the primordial state there are equal intervals but that this, subsequently, was altered to produce unequal 'spacing'. The idea is similar to that of 'breaking symmetry' in physics such as between the four forces (in the very beginning they were of equal strength).

The overall idea of equality is pervasive but also elusive. The underlying assumption or 'feel' in systematics is that the terms of a system are equi-valued (so presumably 'equi-spaced'). This corresponds with the principle doctrine of Bennett's systematics that any system is as important as any other. It takes no account of the fact that our mental capacity is hardly able to cope with four or more elements at a time.



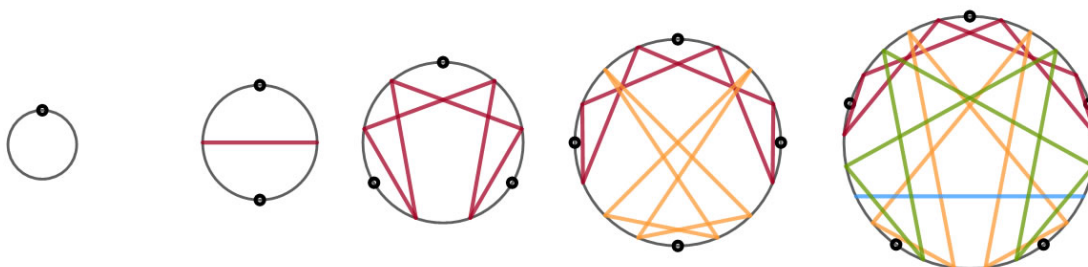
Applying the equal principle to the simplest system of the dyad produces a half-way point that, in music, has the value $\sqrt{2}$ an 'irrational' number and was rejected in Medieval times as the 'diabolic' interval.

20. Structure

Bennett stated that the systems were the *most abstract* forms of understanding. Further, if we have a whole series of systems according to the integers then do we need all of them to understand something, or just some of them, or will one of them do? Gurdjieff chose two laws - of three and of seven.

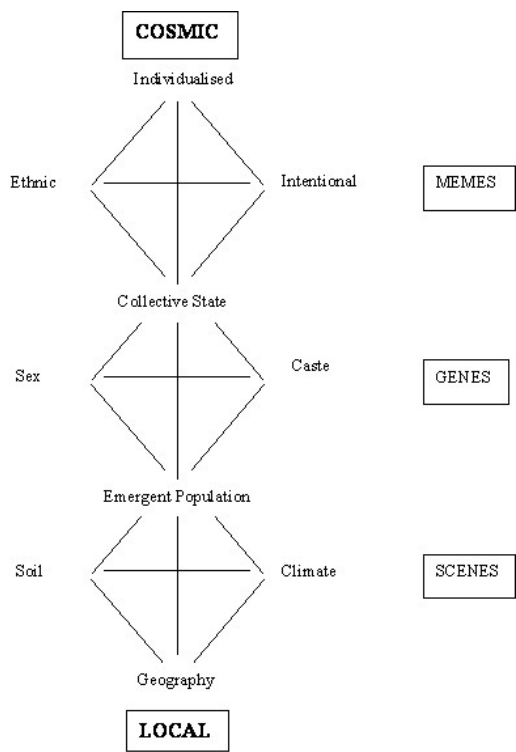
Bennett suggested that *structures* were more concrete and practical than systems and were made of combinations of systems. An example is Gurdjieff's *enneagram* that combines a triad and heptad. This led us to consider a generalisation called N-grams (developed by Sigurd Anderson) and the particular sub-class of them we call 'square-grams': if the total number of points or terms is N then there will be two 'laws' or systems A and B such that $A + B = N + 1$ where N is A^2 and $N + 1$ is the *number-base* of the structure. N takes the values 1, 4, 9, 25, etc.

The 'organising number' A = 1 in the monogram, 2 in the tetragram, 3 in the enneagram, 4 in the hexadecimagram, then 5 and so on as shown in these figures:



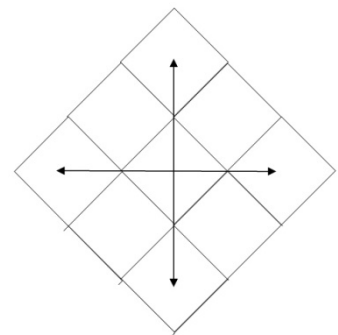
Considerations of number-base are significant in establishing a *modular* arithmetic: in binary for example one only uses two terms, while in decimal one uses ten terms. Arnold Mindel and other psychologists have suggested that people operate within their number base and *repeat* after going through the range of their repertoire without anything new. This corresponds to a stratified view of people similar to that of Eliot Jacques' *Time-Span Capacity* (Jacques and Bennett knew each other). A modular perspective leads us to entertain 'repetitions' of systems to make larger complexes.

For example a decad can be formed of three tetrads if the higher point of one can also be the lower point of another. It is shown here with an example taken from the Baltimore seminar *Action*.

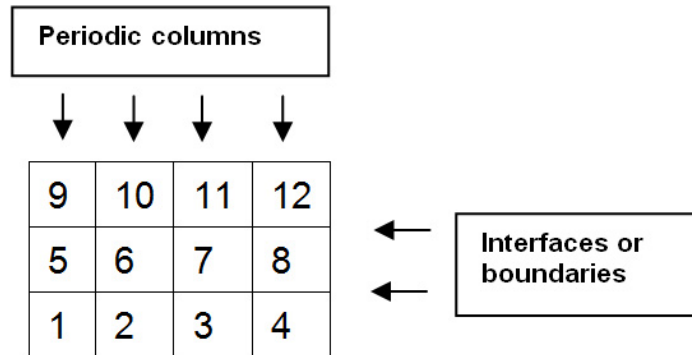
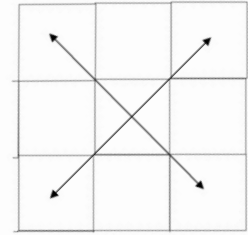


Integrative Complexity - a Ten-Term System

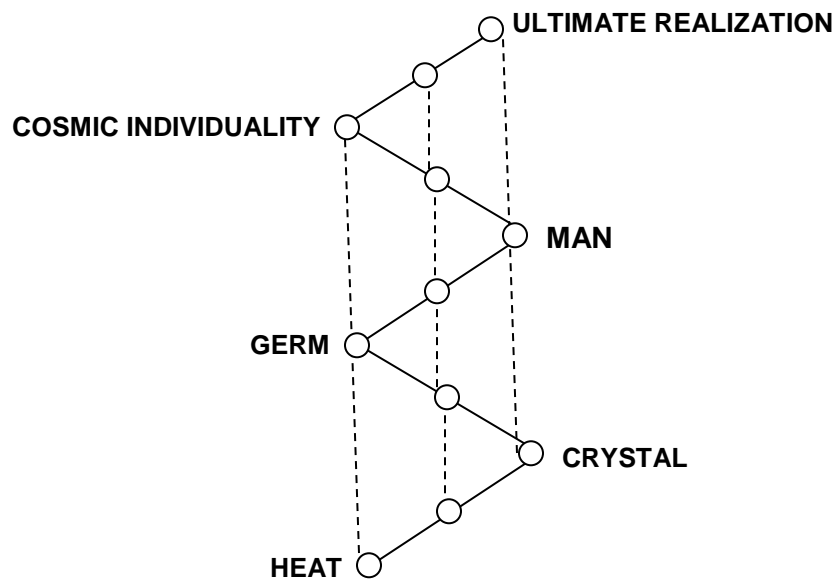
An extended form gives a pattern that then maps into that of a *magic square*, and so on.



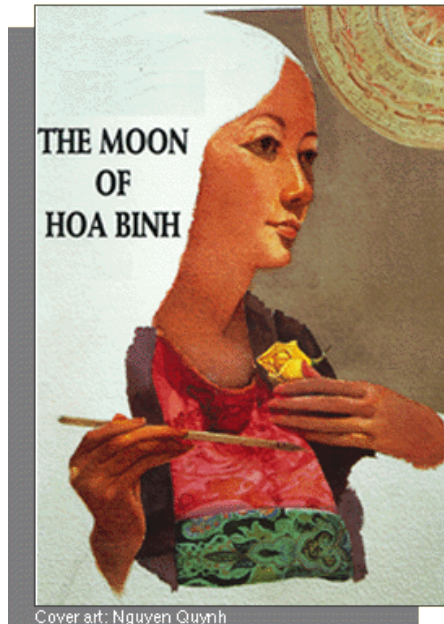
Evidently, the possibilities are legion. They belong to the 'game' of systematics we called S^N concerning the representation of a progression of systems other than as a linear series. There can be 'stacks' and 'spectra' of systems and these would include the grids of meaning games.



The form of repeated systems as shown pictorially depends on the number of terms that are coincident or the 'same'. The decad example shown before has instances of just one point that is 'shared' (reminiscent of how electrons are shared in making molecules) and the tetrads as they are extended share two terms with their neighbours. A case of particular importance in Bennett's work involves pentads: the scheme of essence-classes. He derived this from Gurdjieff's Diagram of Everything Living (see earlier) but, for some reason, he changed it from an eleven-term to a twelve-term structure. Gurdjieff's original diagram can be made using four pentads, sharing three terms with their neighbours (the form of the pentad is simplified).



22. William Pensinger and the Santa Fe Papers



Pensinger's novel was a tour de force encompassing the politics of the Vietnam war, the burst of innovation at the start of the twentieth century, self-organising systems, Bennett's three kinds of time, sex, animism, the transcendence of the subject-object division and much else. At the heart of it was his vision of 'multi-value' - that the identity of anything has many layers involving it in different worlds of meaning all at once (identity transparency).

His Santa Fe papers went on to explore ramifications in areas such as DND radiation, monetary systems and his favourite MUSCULPT - a proposed medium capable of expressing multi-value and identity transparency.

23. Biosphere 2



John Allen, a student of the ideas of Gurdjieff and Bennett, took the concepts of Russian pioneer of biospherics Vladimir Vernadsky and created a 'model' of the total biosphere in which we live *which was itself*

a *biosphere*. Biosphere 2 was a tangible expression of the ideas of cosmoeses but left unanswered whether there was a Biosphere 3 inside it.

Biosphere 2 was an updated version of the myth of the Ark, a myth that deeply affected followers of the fourth way. The notion of the Ark raises questions of the nature of understanding and wholeness. Just how much do we need to replicate the whole?

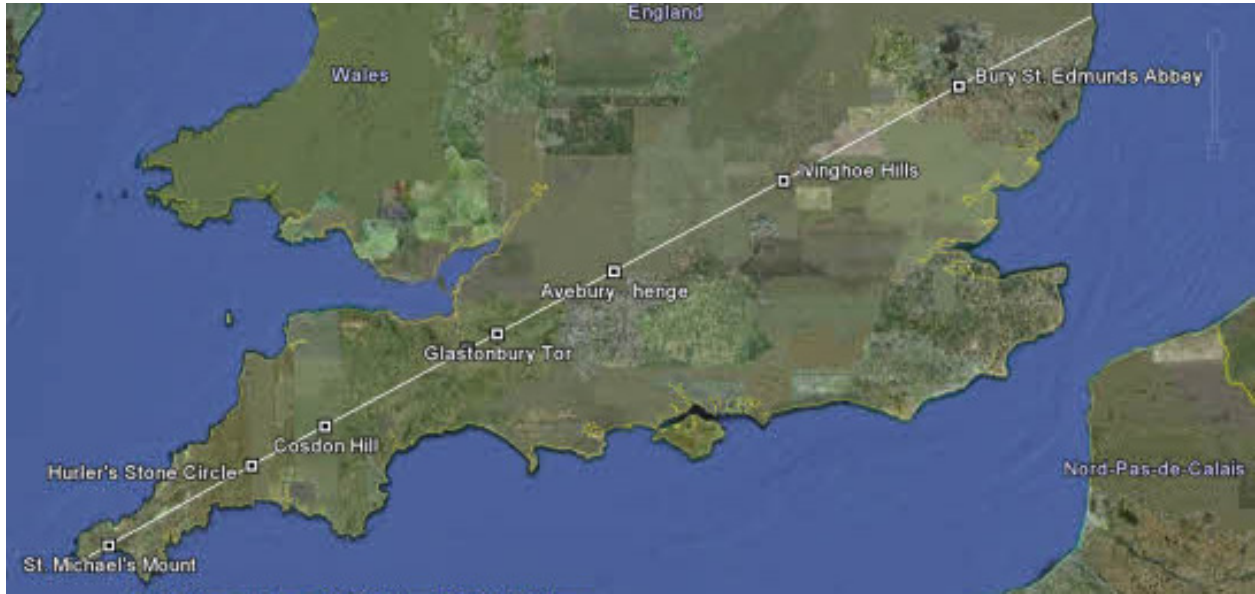


21. Landscape, History and Symbolism



The DuVersity organised a series of tours to 'sacred landscapes'. One of them was to Peru and another to the north western area of Europe known as the region of 'enchanted Albion'. In Peru it was astonishing to what degree the landscape had been fashioned into a sort of 'book' embodying their astronomy and mythology, sometimes as a kind of theatre or cinema as in the case of the 'pyramid' in Ollantaytambo. At dawn of the summer solstice the first

shafts of sunlight strike their way along a road at the side of the pyramid to illuminate a sunken field. In a terraced slope depicting a llama, the first sunlight illuminates its eye. In enchanted Albion it was clear that the peoples who lived there had orchestrated the land, reflecting the patterns of the sky onto the land while also 'spiritualising' the land towards the sky (reminiscent of JGB's 'realisation of essence and spiritualisation of existence' he spoke of in explaining the essence-classes). This action involved pilgrimages and lines of meaning that correspond with the 'song-lines' of aboriginal Australia.



It is thought that a line of energy or meaning crosses England between the most western and the most Eastern points. There is also a Michael-Apollo line starting at Mount Carmel in Israel, passing through Delphi in Greece and eventually going through Mt St Michel in France, St Michael's Mount in England and Skellig Michael in Ireland. These correspond to our *meaning grids* in which points, lines and areas provide a framework for a language of place is written on by history.



This 'enchantment' of place corresponds to what might happen in our own transformation (place = body). The typical process seems to be to make use of natural or 'earthly' features to express a supernatural or higher reality. It is like a region with various parts that evolves into a whole with distinctive 'terms' that are shaped by the emergence of the system.

There is a metaphor of river and river bed: the bed is the given form that is shaped by the river as it acts over the seasons and ages.

21. Bodily Instinct

On the horizon is that we might come to pay attention to the role of bodily instinct and the 'unconscious' intelligence of our organisms with their inherited wisdom of evolution. Most people treat their organisms as just hardware to carry programmes which can be as well incarcerated in computers or other machines. In contrast we suspect that there can be *direct encounters* between unconscious instinct and conscious forms (in tradition - Earth and Sky). It is such that

mark discovery and illumination. They show us the *laws of creation* and constitute *real understanding*.

Systematics began with a kind of anthropology of number, scanning through different cultures and time periods for similarities of pattern associated with number. There is now research on the *sense* of number. Penetrating *down* into the depths of mind is as hard if not harder than rising *up* into the heights of mind. We take as axiomatic an idea similar to Gurdjieff's on cosmoses - that if we really go into a higher cosmos we *must* at the same time go into a lower one - and consider that, for example, the higher intellectual centre might be closer to our cells than to our concepts.

Concerning the anthropology of number in which we survey the meaning across cultures and times associated with number, we can have various goals: (a) to see how people *actually think* or have thought, (b) to strive for a unification of diversity and resolution of differences between the various sources, (c) to discover esoteric knowledge (that is, to become an *initiate* in Gurdjieff's terms), (d) to be reminded of what our higher centres already know.

22. Creativity

In reflecting on N-logue it seemed to us that there was a real phenomenon of combining 'mechanical' elements together for a creative action. For this to emerge each element has to accept itself as only a part and give up on being complete in itself. In a strange way, by the terms being incomplete something new was possible for the system. In life a simple case would be people accepting to obey someone instead of each wanting to be in charge. At the heart of things *will* is realised best through obedience, not through striving or exercising authority.

This idea is reflected in (a) Gurdjieff's picture of man as composed of three machines that, working together, can act as 'I', (b) in the development of written language which is most advanced and meaningful when its symbols are most simple and meaningless on their own.

It also leaves us with the prospect of *synergy* that JGB defined in terms of *co-operation between different levels*. This is perhaps the highest and most important 'teaching' he gave. It is beyond creativity. I attempted to give it some form in what I grandly called '*The Blake-Blake Theory of Communion*'.

23. Reflexivity

Strangely, it took decades to realise that Bennett's systematics was not true to its premises. His two-level scheme of 'system' and 'terms' could not possibly be complete. We opened up this question by the development of the *lattice*. This was added to the exploration of 'molecules of meaning' using LVT, producing a four-fold scheme. A three-fold scheme involving a middle realm of 'inner operations' between system and terms opened up another possibility and made a strong connection to the inner work practices of the fourth way.

THE BLAKE-BLAKE THEORY OF COMMUNION

Anthony Blake



This theory has been largely inspired by William Blake's prophetic poem 'Milton'. In this magnificent work, Milton transforms from a puritan locked into Selfhood into a 'plenary' State, which is the redemption of Albion. As preface to Book Two of the poem, Blake writes:

"How wide the Gulf & Unpassable! Between Simplicity and Insipidity"

"Contraries are Positives

A Negation is not a Contrary"

Let us bear this in mind. The core of the theory is given in the section 'Propositions' and the rest amounts to commentary and gloss.

PREAMBLE

We have been concerned with two questions. Firstly, is there a deeper ground on which Bennett's systematics rests? Secondly, what are the implications of Pensinger's concept of multi-value for groups, or assemblies of individuals?

The investigation of the first question led to puzzlement about unity and counting. It seemed to us that how we count and how we understand unity are coupled closely together. We also came to feel that the starting point of systematics in sets was inadequate. There must be many kinds of grouping, other than those distinguished by number. These different kinds were to be distinguished in ways that systematics has not acknowledged.

Pensinger's multi-value or m-logue concept requires of us that we conceive of groups in a new way. If we ascribe multi-value to individuals, then the 'togetherness' of individuals with each other cannot be conceived of in terms of sets or classes.

Our starting point was given by William Blake's concept of 'States' as 'Combinations of Individuals'.

We need, however, to allow for States to inhere in Individuals, if we are to accommodate Pensinger's concepts. In the case of 'Milton', the leading character himself is described as taking on such a State: "And thou, O Milton, art a State about to be Created." We introduce, therefore, the idea of Individuals that, though 'eternal', are able to assume States. Such multi-value thinking was initiated 2,000 years ago in the struggles to understand the nature of Christ, aspects of which are to be found in our theory. Christ as 2-valued and God as 3-valued were

incredible steps of thinking. Considerations of God, prophecy and sin fall naturally out of the theory.



Now, this theory concerns itself with Individuals. There is no place for more abstract elements such as forces, sources, limits, etc. – in other words, none of the content of traditional systematics. We believe that systems are merely reflections of the primary reality of States of Individuals. Individuals are not composed, even though they may assume States. In proposing this, we echo the original genius of Duns Scotus (born just a few miles away from where I live in the Borders of Scotland) who taught that we first have knowledge of concrete individuals, each with its hæcceitas or 'suchness', and only secondarily with the general 'forms' of existence.

States correspond to experience. What then are Individuals? Our provisional answer is that they are much the same as Bennett's Will, though in its most concrete form. Bennett's treatment of Will (in volume II of 'The Dramatic Universe') gave a curiously composite form to Individuality and never sat comfortably with the idea of 'particulate'

Will. However, in his book 'Hazard', in Appendix Two, we can find a closer model (see Comments at end).

PROPOSITIONS

1. Reality is made of Communions.

2. A Communion of Individuals is such that every Individual is in a State of combination of Individuals of that Communion.
 - 2a. There can be an Individual that is in a State of combination of every Individual of the Communion (including the 'fallen' – see below). This is the Plenary Individual.
 - 2b. There can be a 'symbolic form' (such as ancestral totem pole) in place of the Plenary Individual.
 - 2c. The symbolic form is 'God'. The Plenary Individual is 'prophet'.

3. Individuals who are in a State of combination only of themselves are 'fallen into sin'.

4. Sex consists of all States of combination of two Individuals in the Communion.

5. Individuals of a Communion can be in a State that includes the Plenary Individual. Such States are called 'participation'; but they are only partial.
 - 5a. A symbolic form of a participation is called a 'church'.

- 6a. The States of combination of single Individuals ('in sin') are 'conscious'.
- 6b. The States of combination of two individuals ('in sex') are 'creative'.
- 6c. The States of combination of three or more Individuals, including the Plenary – i.e. in participation – are 'unitive' ("When two or three are gathered together in My Name, then am I with them")
- 6d. The States of combination of Individuals which belong to different Communions are 'transcendent'.

7. A Communion is defined by its inclusion of a Plenary Individual or symbolic form. Hence such are religions, faiths, tribes, ways of living, etc.
 - 7a. Individuals who are included in two or more Communions are called 'peace-makers'.

8. Reality is without boundaries.
 - 8a. The Individuals of a Reality cannot be counted.

8b. The States of a Reality go beyond experience.

8c. The Communions of a Reality are unknown.

9. States resolve into subjective and objective aspects in that single-valued Individuals are most like objects and Plenary Individuals are most like subjects.

9a. It is likely that this gives much the same results as e.g. Kashmiri Shaivism.

9b. The theory of Communion contains Whitehead's concept of organic prehension (as States) and Leibniz's concept of monads (as Individuals).

10. The theory does not involve communication or any transfer 'between' Individuals. We regard communication as a poor theory of communion. In Communion, there is no need for any exchange because different Individuals are not separated in the States they assume.

11. A divine messenger is transcendent

A prophet is unitive

A saint is creative (lovers = one saint)

A sinner is conscious ("Hell is oneself" T. S. Eliot, taken from Blake)

12. In a Communion, 'many' is always 'one', and 'one' is always 'many'. When one = many, there is a State. All States are 'images' of the Communion.

COMMENTS

1. Our theory may strike the reader as abstract and elevated and not concerned with the usual human condition. This would be a mistake. What is offered here for contemplation is a seeing of the world of communion in which we already participate. We have experience in states, though these are ordinarily regarded in terms of 'awareness of the world' or 'relationships', which token only external connection. We have to go to the implicate side of our experience, into the interiority of states. We then need to allow this implicate type of perception to 'disclose' communion. The communion cannot be reduced to an experience, not unless we are the plenary individual. By taking the plenary individual on faith, we allow this state to 'in-form' us. It is by this in-forming, we argue, that we are supported in our faith, hope and love.

The theory allows us to conceive of 'sacred individuals' but also of the possibility of our participation in their nature. It seems to us that this gives substance to religious views which must, as we believe is obvious, concern the 'subjective' aspect of communion. At the same

time, the realm of human interaction, usually considered in the objective' aspect of communion, can be accommodated.

2. The systems of systematics appear in the theory as reflections of states onto the objective aspect. For this to be acceptable, we have to allow a symbolic replacement of individuals by sub-elements of experience such as objects, forces, sources, limits, etc. In this light, systems may be thought of as, in their essence, 'acts of will'. It is no accident that systems are as they are because they are 'seen that way'. The view of systems as based on external connections becomes valid only at the objective limits of communion.

We draw attention to a critical proposition in Bennett's systematics. This is that the 'terms' of any system are 'homo-ousias', that is, of the same kind. In this guise, they can take the place of individuals: individuals are strictly homo-ousias and 'equal'. The mere approximations to the ideality of systems we find in empirical circumstances can be understood as deriving from the lack of true equality and individuality of empirical terms.

The variety of a system [N] we find in practice are due to the variety of states of N individuals in combination to be realised in a given communion. This may serve to explain why cultures are significant for the explication of systematics.



3. In the book 'Hazard', Bennett says that Will is "an indivisible whole that always remains the same and yet it is composed of an infinity of particulate wills." (Appendix Two). Though poised on the threshold, so-to-say, he makes no allowance for any significance of combinations of particulate wills. In another place, in the book 'Creation', however, he uses Cantor's concept of transfinite numbers to entertain such an idea. In 'The Dramatic Universe' (vol. II) he talks extensively of Will as 3-fold, but not even as a state of combination of 3 particulate wills or individuals. Our theory offers a bridge between his various models. Of course, our theory gives an exalted status to 'individuals', much as in the religious sense of individuals as 'sparks of the divine'.

In 'Hazard' he says that the 'atoms of will' only make themselves felt when enclosed in a vessel. How such atoms can be enclosed is a mystery. Our theory allows us to postulate states as intermediary. There are no vessels as such. Particles of will can 'take shape' in combinations.

In many places, he speaks of the 'self-limitation of will' in terms of the formation of the 'determining-conditions' of space, time, number, etc. We would like to replace the concept of self-limitation by the theory of combinations. Because a combination of individuals is involved, there has to be agreement about 'how to act'. It is this agreement that is the basis of the determining conditions. We can then see that there are a multitude of determining conditions, in the form of agreements. The individuals in a combination have to act together; and they thereby exemplify what Bennett, in yet other writings, called 'coalescence'. It is this property that gives rise to Cosmos out of the apparent Chaos of raw communion.

Implicit in this argument is a strong version of the 'anthropic' principle, but based on individuals and not on human generality. It implies that the far greater part of the universe is yet to be discovered. Agreeing with Bennett, we can conceive of a base-line agreement which is simply to 'exist' at all.

Finally, to revert to Bennett's model of a 'vessel', we can take note that he regarded this as 'being'. We want to point out that the root concept of being is 'inner-togetherness' – which is tantamount to what we mean by combinations of individuals. In this sense, every individual contains' every other who belongs in the same state.

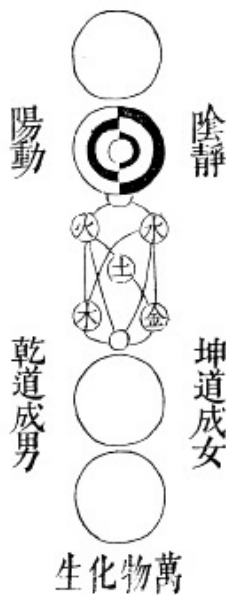


Chart of the Great Ultimate *Taiji Tu*

