

# THE SYSTEMATICS CODE

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

*All Contraries are Positives*

*A Negation is not a Contrary*

William Blake, from preface to book two of *Milton*

*In Homo Ludens Huizinga describes the play concept as: ...a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy, and the consciousness that it is "different" from "ordinary life".*

Dakota Brown

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## INTRODUCTION

This is an extended report on Gathering VII. The Gatherings have been annual meetings for people interested in developing the theory and practice of systematics, the discipline of thinking as developed by John Bennett initially fifty years ago. The first series of reports centred on the idea of Globalization. There was then a gap, as we moved into more experiential realms, such as use of collage. During this time, the concept of systematics as a *game* developed from its intimations in early Gatherings and also from a growing understanding of the allied discipline of *logovisual technology* (LVT).

The report is based on audio recordings and photographs as well as personal memory. It is extended by the inclusion of explanatory material and extrapolations of the theory presented in a rudimentary way during the sessions. The overall theme of the report is a new enlarged vision of what systematics means – includes, is relevant to, etc. – that greatly enlarges its constitution and scope.

The key questions for the Gathering were:

1. How can we better transmit systematics to maintain and develop it?
2. What is the connection between Bennett's multi-term systems and Jung's Archetypes?
3. How can we relate systematics to general culture and other disciplines?

The central idea of the report is *the meaning game*. Such a game is both creative and a means of communication. It appears to me now that both 'classical systematics' and LVT can be subsumed under the category of meaning games.



**From left to right: Leslie Schwing, Anthony Blake, Karen Stefano, Craig Wells, Richard Knowles, Kevin Chenette, John Bardis, Bob Gerber, Ron Eirlen. April 7-9, 2006.**

## OUTLINE

As was mentioned earlier, in symbology, as represented, *numbers* are connected with definite *geometrical figures*, and are usually complementary to each other. In the system of Cabala a *symbology of letters* is also used and in combination with the symbology of letters a *symbology of words*. A combination of the four methods of symbolism by numbers, geometrical figures, letters, and words, gives a complicated but more perfect method.

Then there exists also a *symbology of magic*, a *symbology of alchemy*, and a *symbology of astrology* as well as the system of the *symbols of the Tarot* which unites them into one whole.

G. I. Gurdjieff quoted in *In Search of the Miraculous* p. 283

The report is loosely constructed into four parts but with manifold ancillary material in the form of appendices. It is perhaps less of a report than an amplification of some important themes that emerged in the Gathering from our conversations.

The First Part is an introduction to the nature of systematics in several contexts such as the archetypes of Jung, mathematics, words and the alphabet, physics and so on. It sets the scene for an exploration that extends beyond the bounds of 'classical' systematics. Classical systematics dealt with the properties of multi-term systems as sets of terms. It did not deal with relations between systems, or the significance of 'form', or the ways in which terms can be arranged in a meaning space, consideration of which leads us into shapes and images as well as the more obvious characteristics of geometrical representation. We take up Bennett's idea of 'mutual relevance' of terms as a fundamental idea which has been largely neglected heretofore. In the primary proposition that a *system is a set of independent but mutually relevant terms* we discover the two complementary sides of understanding: in the first we have a set of *discrete elements* – SET - while in the other we have some aspect of the *continuum of wholeness* – MUTUAL RELEVANCE. Both perspectives bear on the meaning of TERMS.

Part Two begins to address the placement of systematics with other disciplines and traditions, but also to enquire into the question of how systematics might be made more accessible to more people. This Part is largely based on our initial conversation about our experiences of using systematics with various groups.

In Part Three, we introduce the idea of systematics as a game and summarise the results of a meaning game we played based on the methodological context – mutual relevance of other known human disciplines of it.

The Meaning Game was conducted using the tools of Logovisual Thinking (LVT). This technology has been developed from the early work of John Bennett on Structural Communication with the Centre for Management Creativity, based in Yorkshire in the UK (see <http://www.logovisual.com/>).

In Part Four, the idea of systematics as a game is elaborated into eight categories. This represents a new theory of systematics. There is also an extended treatment of associating systematics with other disciplines.

Our deepening and extension of systematics leads us into the domain of *structures* that Bennett proposed were *more concrete* than systems per se. It touches upon the further domain of *societies*. Perhaps the most important feature of this approach is that it brings to the forefront the significance of having *several minds* thinking together, instead of the solitary expert. This was, in fact, the milieu of the early work done on systematics.

Our view of systematics embraces magic, divination, mathematics, art, language and so on impartially. It reveals systematics as the method *par excellence* of *integration without rejection*. The idea of meaning games gives us a way of practicing this method that is accessible and capable of producing unexpected results.

The emergent view of systematics was as an amplification of our natural and even instinctive abilities, a more conscious access to the dance of intelligence and not at all as a doctrine. It

exists in the union of natural systems with symbolism, in a creative realm of discovery. We continue to seek for better forms of expression. The quote from Gurdjieff suggests that we have to be able to *combine many approaches* to arrive at an adequate understanding of symbolism. We are finding our way towards this unitive language. The essential antecedent to systematics is symbolism and we are always pulled towards ways of recreating this art for our times. Below we take the liberty of quoting by way of illustration, which we will continue to do copiously throughout.



**Zitronin by Paul Klee**

Klee was devoted to an ideal of painting that stemmed from German idealist metaphysics. He wrote a book called *The Thinking Eye* which tried to make a science of art and design, conceiving of visual equivalents for spiritual states. Klee's images were symbols and signs that were an abstract visual language like musical notes are for music.

Extract from *Meaning and Form in Literature* (William Harris [www.middlebury.edu/~harris](http://www.middlebury.edu/~harris))

When you feel something exciting happening, when you notice little nodes of occurrences seeming to happen together in an agitated way, then the form will be speaking through to you. Now join this up with the meaning which you will have been perceiving all along, since meaning is much easier to grasp for those with our modern education. Even un-obvious meaning is fairly obvious after all. Never think that we can get away from meaning, it is everywhere and second nature to human brains. It is Form which we must strive after, since the world we live in has sacrificed so much in its racing need and constant desire to be explicit. Form is different, it is always totally implicit.

We must never think that the form is there to amplify and decorate the meaning, since form may work with the meaning or it may work in a quite contrary direction, as a counterfoil against the meaning.. As I said, the great master of "form as against meaning" is that Vergil, who has a curious way of sabotaging his purpose with a breath which seems to float in to us somehow from nowhere. Take the phrase *SUNT LACHRYMAE RERUM*, which is not really "God, the inherent sadness of things....". It doesn't really say that or anything like that, but it

does implicitly breathe something ineffable sad, and it does it entirely through the graded nuances of Form.

Why does it work so powerfully? (I have to speak to those who know a great deal of Latin, I am afraid. You can't get any of this in translation!) It took me time to divine, one day long ago, the ascending scale of the vowels, which as they reach the ladder top, fall off with a thud, along with the syllabic rhythms of the words, with the two gut-Roman words (sunt and rerum) sandwiching a very fancy imitation-Greek word (lachrymae) which turns out, with its two letters not in the Roman alphabet, to be a real Roman word under its doll's clothing.

When I saw all this display, too fast to be the author's conscious plan and at the same time too subtly woven not to be a part of his inner mind, and felt it all as poetry rather than grammar --- I saw the door into the poet's mind opening and I was welcomed into a very special and private place in which to read Vergil the master. Reading the words years later I still feel a shudder, there are things which don't wear out with use.

They wear in, and that is what poetry is all about.

Perhaps the best test case would be the culmination of James Joyce's development as it finalized in *Finnegan's Wake*. For whatever reasons, artistic, psychological or even psychotic as some have maintained, Joyce does things with the Meaning Level which make the book "unreadable" to most readers of English prose. The words can be normal English, or they can be Joyce-twisted English, they can fall into regular sentences, or they can display themselves in marvelously contorted fashion on the page. There are here meanings behind what we normally call "meaning", but they are hidden, secretified, and not to be grasped in the usual fashion. There are keys to open some of the secret doors, many scholars have unraveled individual sentences and parts of chapters, rivers, washerwomen, earwigs, garbled telephone numbers in French. But the deciphering does not give us back a great deal of meaning, because Joyce wanted to hide things from us, and much of what he hid is not to be revealed.

Why this dishevelment of meaning, these contortions, these riddling paragraphs? Because Joyce is involved with sound, rhythm, the configuration of musical wording, all things which lie in the realm of Form. Meaning is the coat-hanger, a somewhat twisted old-fashioned wire coathanger, on which he hangs his many-colored coat of infinitely finely threaded form. So I know to read Joyce from the form end first, I intone his words aloud, read the words again and again with different interpretations, as I would approach Beethoven's Hammerklavier Sonata, stretching for the wide range of what the form will let me do with itself. I put William York Tindall's book (*A Reader's Guide to Finnegan's Wake*) on the back burner, and open my well worn out Viking Press edition of the *Wake* to page 556, and read for the thousandth entirely different time "Night by silentsailing night, when Infantina Isobel.... " in infinite tones of voice and delight, down to "...now evencalm lay sleeping." I do sense, rather than understand, Isobel's person, her retrogression through churchly stages, her inner self with wildwood's eyes and primarose hair, in mauves of moss and daphnedews.....things to see in the mind's eye while hearing in the inner ear. I let the meaning come to me when it is ready, while I sing and hear the sounds in their exact order, their complex rhythmic and euphonic display.

Why all this, and why done in this difficult way? Because Joyce has learned in his blindness that it is the ear which reaches the soul first, and word-weaving will be the work of his last years. When weaving you attend woof and warp, while the overall design slowly appears as if by itself. Great control of meaning-design is something he finally learned to let go, and plunged into sound-wording devised by a mind seeking in blindness new ways to see. Hear! Dark hawks hear us!..... Far calls. Coming, far! End here.

# PART ONE – NATURE OF SYSTEMATICS

## PROGRESSION OF THE TWELVE

The twelve are the first twelve *multi-term systems* as articulated by John Bennett, according to the series of natural integers 1, 2, 3, etc. These numbers are not quantities as used in counting but taken in their qualitative or archetypal sense. Bennett's approach had much in common with Carl Jung's thesis that the smaller integers, which could be grasped somewhat 'as a whole', could symbolize or reflect fundamental types of movement towards order. The sequence of integers express an enrichment and deepening of wholeness, whether in human individuation or in an enterprise.

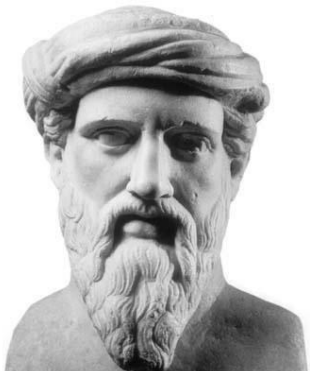


Carl Jung



John Bennett

Though the integers look very simple, they are manifestations of the unconscious as creative spirit entering into consciousness and the knowable. This 'unconscious entering into conscious' can be taken in many senses - psychological, spiritual, social and historical – and one of the main features of Bennett's method was that it encompassed many fields of enquiry. Number symbolism stretches back at least (in the west) to Pythagoras and crosses over many cultures and it has been suspected that an archetypal sense of number may go back at least 10,000 years. Bennett modestly called his own reflections on and articulations of number *systematics* and endeavoured to bridge the ages in uniting early number mysticism with contemporary holistic and systems thinking, and to form a bridge that could cross-communicate between religion and technology.

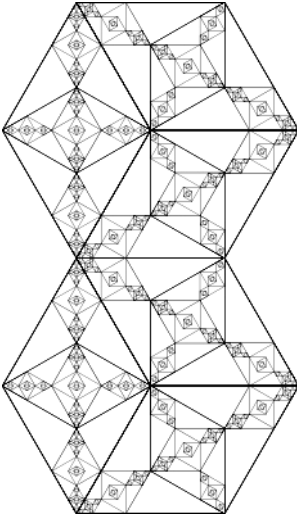


Pythagoras of Samos

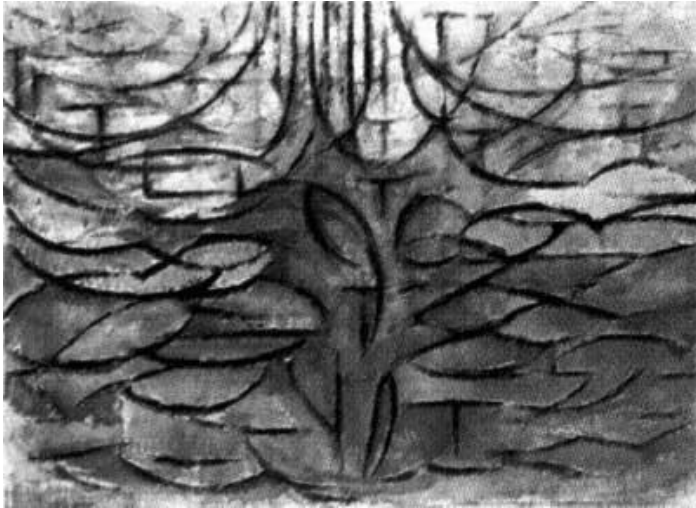


Buckminster Fuller

The systems were seen as extended into a number of terms forming a complex of mutual relevance to each other and also intensively as a quality of wholeness. Every system could be contemplated and analyzed in its own right but the sequence of systems symbolized by the numerical series 1, 2, 3, 4, etc. expressed a progressive order that can be tied in with such contemporary notions as emergence and self-organization.



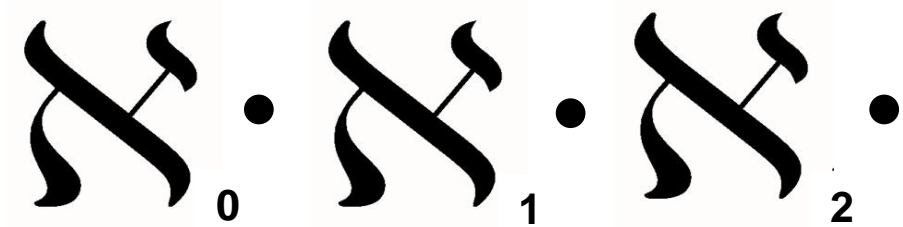
Fractal tessellation



Mondrian tree

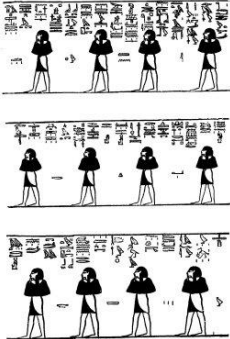
Creative breakthroughs in art, music, science and mathematics have changed our very understanding of order and harmony and it is now commonplace to think of alternative realities and parallel universes. In the context of such innovation and its attendant uncertainties, the sense of meaningful principles at work becomes ever more significant.

The numbers are first of all pure form and prior to any image. This aspect, too, has a long history and shows itself most evidently in Gematria and the numbering systems of letters and words. Projected into images, the numbers become patterns in a kind of meaning space and we can see ways in which terms dance together or balance themselves one with another. Embodied in our circumstances they take on different colours and manners in different contexts. Every simple integer is an infinity of possible content and it is plausible to say that the qualitative numbers of systematics are actually the transfinite numbers infinity, beyond infinity, beyond the beyond of infinity and so on towards the absolute unknowable infinity of infinities the pious will call God.





The idea of twelve principles has many precedents. There are the twelve zodiacal signs and their spiritualization and transcendence in the twelve Disciples of Christ, later still reflected in the twelve Knights of the Round Table. Pantheons of gods from Egypt to Greece were often twelvefold.



Egyptian Pantheon



Gods of Olympus



Knights of the Round Table

Each system can be seen as a god – but a ‘god’ to be understood as a way of seeing and acting and not as some imaginary entity. The idea of a progression of systems is of some ultimate transforming energy that has to pass through all the forms to be completed. The progression is revolutionary but also cyclic. Every sequence of systems reflects this progressive energy or movement. The higher system in number is a meta- system to the lower system; there is always a deeper understanding to be reached.



Kurt Godel



Escher Drawing

Summarized here are Bennett’s definitions of the systems, with some modifications of our own. In addition, we adduce columns illustrating the systems in terms of natural phenomena and also energies, the material taken from Bennett’s work. This makes it clear that using systems to map knowledge from one area into another can be both illuminating and puzzling and *both* are essential if the approach is to be helpful and not a cul-de-sac. In our discussions of systems and systematics we will take illustrations and descriptions from sources ancient and modern, including myths and visual forms to help evoke an all-round sense of them as principle, image and function.

SYSTEM	ATTRIBUTE	TERM CHARACTER	NATURAL EXEMPLIFICATION	ENERGY
Monad	Universality	Diversity in Unity	Hyle – framework laws	Heat
Dyad	Complementarity	Poles	Quantum mechanics	Mechanical
Triad	Dynamism	Impulses	Atomic physics	Cohesive
Tetrad	Activity	Sources	Molecules, materials	Plastic
Pentad	Significance	Essences	Virus	Constructive
Hexad	Coalescence	Actions	Cell	Vital
Heptad	Transformation	Steps	Organism	Automatic
Octad	Completedness	Limits	Human	Sensitive
Ennead	Harmonization	Powers	Planet	Conscious
Decad	Integration	Principles	Sun	Creative
Undecad	Synergy	Groups	Galaxy	Unitive
Duodecad	Fulfilment	Perfections	Universe	Transcendent

## BEYOND BINARY THINKING

Systematics is the study and application of ways in which a many can be *seen to be* or even *act* as one whole. When there are these kinds of wholeness, the many and the one are two perspectives on them. This means that the one is seen in the context of the many and the many are seen in the context of the one (we will speak more of *context* later). There is not the many on the one hand and the one on the other. Constructions in words usually fail to capture the intimacy of the one and the many. At best we can say that the many emerge out of the one and the one comes to presence in the many.

At one extreme, we can posit as a *limit* collections of elements (a kind of many) that are entirely arbitrary. At another extreme we can posit as a *limit* a continuous wholeness in which any elements are ‘dissolved’ into oneness. It is in the region between these two extremes that we hope to find *systems* in the sense of Bennett’s systematics. In systems, the many is an articulation of the wholeness and the one is their union. In systematics, we speak of wholeness in the plural because there are as many kinds of wholeness as there are *numbers* and the number of the many is assumed to be the main determinant of the kind of wholeness that it can engender. This is the specific claim that systematics makes and which distinguishes it from most systems theory.

The main reason for this relative indifference in systems thinking to the number of elements is due to an underlying frame of thinking which considers, in effect, connections between only two elements ‘at a time’. Systems diagrams, for example, are built up from chains of binary linkages. They can include ‘logic-gates’, which have some similarities to systems in our sense, but they also are restricted to binary thinking.

Nearly all established thinking considers only two elements together at any one time, whatever the form of togetherness in view (such as forces between particles). ‘At any one time’ includes thinking about any action or process or object that links or holds elements together. This is the principle of *local action*. Many physicists detest and reject any idea of a non-local or holistic action, in spite of its apparent necessity in quantum mechanics.

In dealing with interactions between more than two elements at a time, a problem arises known as the ‘three-body problem’. It is impossible to predict the motions of three bodies even though each pair, taken in isolation from the third, is perfectly predictable. If one attempts to visualise a three body interaction, it is possible to become aware of *something missing* from one’s picture. One sees that one does not see what is really going on. To come to grips with this, mathematical techniques have been developed and some have enabled the calculation of possible ‘families’ or orbits. These mathematical forms may reflect a world of form that is kindred to the domain of quantum potential and, in general, to what David Bohm called *active information* (see last part of Overview in Part Four).

Of course, the possible forms of motion of three bodies are taken to *derive* from the three binary interactions between them. The idea of a property emerging out of the interactions between bodies was applied by Ernst Mach in his view that inertia arose from the interactions of all the masses of the universe. The supposition that more global properties arise from the ensemble of local ones is usually favoured over the view that in some sense the global properties *precede* local ones. A debate continues that cannot be resolved because each side is assuming different versions of precedence or of *time*. The minority group of globalists – or ‘Platonists’ – look to some kind of precedence that is ‘beyond time’.

The three body problem illustrates how our *picturing* of situations is limited to binary relations. There are innumerable beliefs woven into our way of picturing things, especially about time and space. We picture things in what we suppose is an ‘objective’ three dimensional space and their interactions along a single line of time, one moment after or before another. The shortest or most immediate path between two things is a straight line and sequence in time is the underlying frame of causality. It is easy to see that *linear thinking* is taken as the norm.

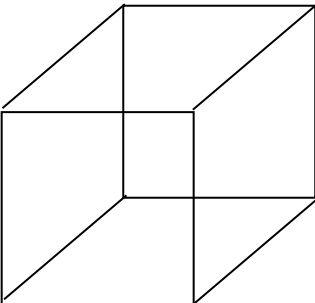
It is possible to see that linear, binary thinking

(+) ----- (-)

can be a *collapse* from, or a degenerate form of, a more complex kind. In physics, this is reminiscent of Feynman’s notion that *all possible pathways* connect two things but *cancel each other out* to leave only one. We can imagine that to some degree they may *not* cancel each other out and have an influence on what actually happens that cannot be predicted in terms of the single binary local connection. In a similar vein, William Pensinger has proposed that multi-valued logic is collapsed into 2-valued logic in our usual thinking. He also suggests that it is possible to train one’s mind to become aware of these higher order logics.

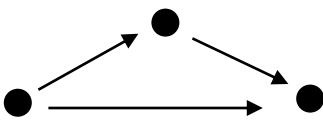
In contrast with the ‘norm’ of a collapsed and degenerate state are moments of ecstasy, sometimes regarded as psychic energy bursting the bounds of (habitual) thought, as in the experience of Dostoevsky’s ‘Idiot’ (see Appendix 1). Such experience is marginalized in a 2-valued framework, which typically takes the form of objective/subjective, the subjective being taken as unreal or spurious. What is involved in ecstasy, or in its milder forms of aesthetic awareness, sense of living presence, or intuitive flow is rendered blank or treated as a negative. The world we picture – as in the representations used in physics – is *denuded of ourselves* and it is then a tautology that we appear as extraneous or meaningless.

However, it is striking that physics continues to play with ideas of higher dimensions and does not dismiss them as mere 'imagination'. Higher – or simply more – dimensions imply that things that are seen as separate from a restricted view may be intimate when regarded in enriched dimensionality. It might also be the case that there are modes of interplay between things that are not restricted to binary relations but extend to three or more terms 'at a time'. However, we would expect that predictability would *mean something different from what it usually does*. This is, in fact, suggested or implied in the 'magical' practice of *divination* that cannot yield determinate results but only offer a qualitative image of the 'shape' of possible events. The connections possible in higher dimensions may appear as unexpected or even *miraculous*!

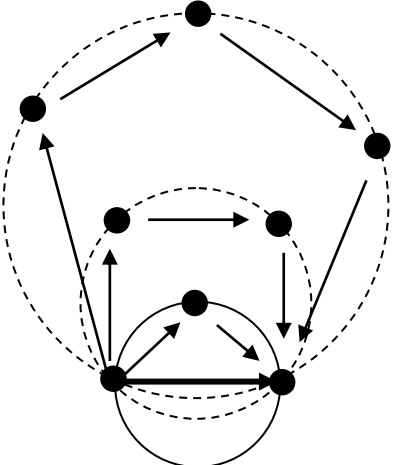


Evidently, there is a massive pull on us to think in binary ways. Take the well known case of this drawing of a cube. It can be seen as a three-dimensional form in one of two ways. It is next to impossible to see *both* at the same time. It is even difficult to see the drawing simply as a set of two-dimensional lines. This perceptual constraint reflects into our thinking: it is this *or* that. If one can hold attention, it is possible to see how we lock onto one point and track to another along a line, or identify one plane and jump to another.

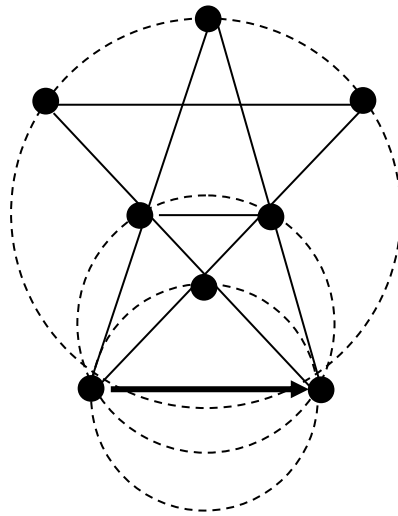
As we go from one thing to another, we cannot simultaneously take another path, e.g. via a third thing. We might have the feeling of more than one path at a time as what we call *context*. There are some well know physical examples of this action such as catalysis in chemistry and the role of the 'presence' of a third body in enabling a transition to be made between two things (an atomic nucleus can enable a photon to split into particle-antiparticle). There are numerous examples from the field of psychology such as the obvious ways in which the presence of a third person can influence the mutual conduct of two people.



For the most part, context is considered in a relatively undifferentiated state. But, it *could* be looked at in terms of a family of alternative pathways engaging with more than two elements at a time. There would be not only binary sets of connections but also triadic, quaternary, and so on.



Instead of drawing in series of linkages, we can bring out the shapes of the dyadic, triadic, tetradic and pentadic relationships. The resultant figure then suggests that the dominant binary linkage is interpenetrated or influenced by a series of *systems* which make up the 'context'. The *identities* of the two basic elements are not the same in each system. Pensinger referred to this property as *identity-transparency*.



It is also possible to see that features of the quantum potential may be represented here. An electron going through one slit as in the basic linkage *is also* going through another slit in the 'relational' system of the experiment. Human systems offer cases whereby we can see even more what Bohm would call *implicate* orders apply. A transaction between two family members may critically involve transactions that go back generations and may have a bearing on generations to come. In systematics, we consider both physical and human situations equally. Since we do this, we cannot build physical models for systems, since they will embody factors such as 'intentionality', 'interpretation', 'values' and the like – all such considerations removing the elements or *terms* of systems from the realm of objects.

It is generally appreciated but not understood that *how* we see influences *what* we see. This is usually taken to mean that we somehow *impose* filters and distortions on what we see; but this view stems from believing that there are fixed objects as such in the first place. We can take another view, in which our various modes of interpretation serve to render us aware of the multi-valued nature of anything that enters our experience. In doing this, we are striving to articulate what context means. Systematics is one way of addressing this question.

Since we cannot make a physical model we cannot make corresponding calculations. In the place of calculations we put consideration of *forms*. Forms obviously relate to number and geometry but can enter the domain of aesthetic meaning, as in works of art. The 'form' of a piece of music exists on many levels. Form becomes subtle and elusive in the realm of feelings. These are not defects. The language of systems is that of *symbols* and Bennett proposed that symbols must always have multiple meanings. They embrace and transcend contradictions. They cannot be resolved into any single 'solution'. This must be the case, given that, as we have been discussing, we seek to transcend simple binary connections.

## WORDS ABOUT WORDS

We are somewhat aware that we use words in diverse, shifting, ambiguous and even contradictory ways. Different people associate different connections, images, feelings and memories to the 'same' word. We might consider words as elements with complex relations far beyond any simple  $A = B$  looked for in naive definitions. Some people are concerned to make definitions that enable them to pin down and fix the meaning of a word but the prime example of a text on the English language – the Oxford English dictionary – shows definition as only a small part of the process of clarification of meaning of words. The word 'set' has more than 250

definitions, which are analysed and illustrated by 95,000 words of text. To reduce all this to one sense is to greatly restrict the context in which the word is used. The more precise and narrow the definition, the less relevance it has to natural language; rather as Russell once said that mathematics develops to say more and more about less and less. To return to the example of the word 'set', it is found that most people can easily use the word in the right way in a variety of contexts without any recourse to consulting the dictionary!

In practice, definitions depend on complex frameworks. If one does not know the framework, the definition is useless and can even be misleading. Phenomenologically, no word ever exists or is used in isolation. It always stands in relation to other words and even whole families of words, including how its usage is exemplified in texts and conversations. The image we made of the possible 'higher connections' between things through various systems of meaning applies here. Although natural language is often devalued as being imprecise, it has the immense value of being used by everyone for a vast range of purposes in a way that largely works. We can consider there to be at least three main types of language: mathematical, linguistic and artistic. Each has its virtue. Systematics uses simple mathematics to clarify and enhance natural language and reaches towards the condition of art.

A starting point for considering what systematics brings to the use of words is to take a word and build around it other relevant words, each of which can bring out or illuminate the meaning of the given word – by contrast, amplification, resonance, etc. In this example, the given word is 'world'.

<b>Totality</b>	<b>Creation</b>	<b>Reality</b>
<b>Biosphere</b>	<b>World</b>	<b>Human affairs</b>
<b>Geography</b>	<b>Planet earth</b>	<b>Boundaries</b>

This is by no means a 'good', 'best', or 'true' compilation. It is simply a meaningful one amongst millions that could be compiled. An alternative one would associate from 'world' to similar words in other ways, such as via spelling, sound, symbol, etc. to produce a set including: word, whirled, weird, worried, etc. or even four (four quarters), evil (Gnostic view), oyster ('world is my oyster') also deriving from the ancient story of the Pearl, and so on and so on.

Now, not only can there be a vast number of alternative versions of a set but also of how the elements are *arranged relative to each other*. The use of such arrangements has been developed as *meaning games*. Such games start from the following premises:

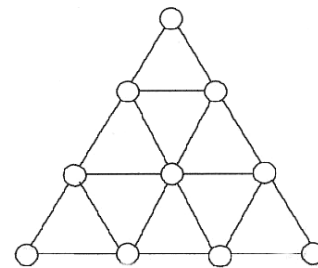
1. **MMs.** There are units of meaning (such as words recognised by a group of people as meaningful) which in general we will call 'molecules of meaning' or MMs.
2. **Relevance.** Given a source set of MMs, different people will prefer one sub-set of this set to each other. One person will see what is 'most relevant' differently from another person.
3. **Arrangement.** Even if operating with the same sub-set of MMs, different people will arrange them relative to each other in different ways.
4. **Rules.** People working in a group can agree to a set of rules enabling them to combine together to produce a result that is meaningful to all participants.

The consideration of *arrangement* is a prototype for the study of systems. Aspects of this can be found in certain management studies, such as the Cynefin approach developed by David Snowden and his associates. In this approach, it is assumed that there are four distinguishable realities: the known, the knowable, the complex and the chaotic. A working group generates MMs and then maps onto a two-dimensional space. There is an implied 3 x 3 grid 'behind' the display space.

A3	B3	A2
B4	C	B2
A4	B1	A1

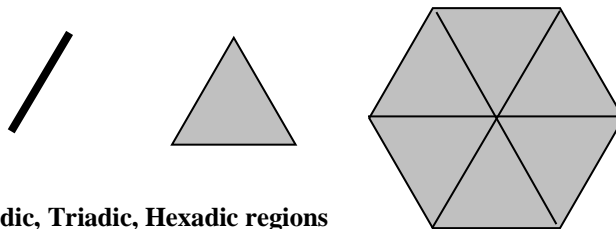
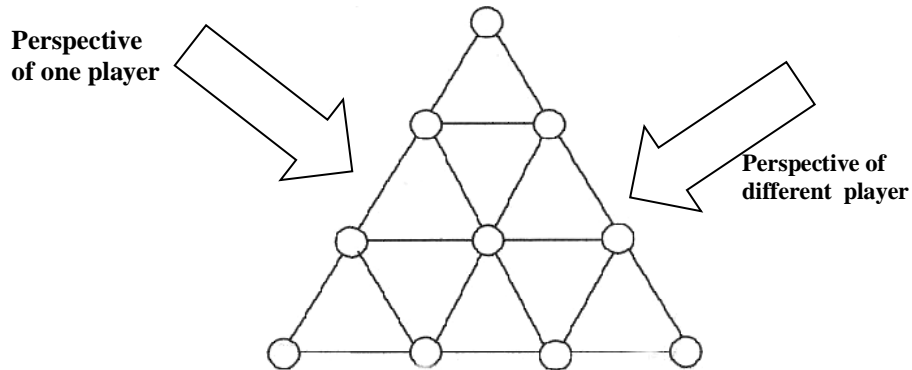
The A's are for MMs that clearly belong to one of the four main realities. The B's are for MMs that straddle two domains and have to be clarified further. The C is for where everything is confused. There are rules for clarification procedures and also for development of the meaning of the intermediary locations (e.g. in terms of pathways, boundaries, etc.)

The 3 x 3 arrangement used in these examples is an example of a *meaning grid*. Such grids can have any number of points or cells and take any kind of form. They provide a vehicle of container for the game. The overall shape of the grid can be changed as a game progresses, according to the agreements of the players. The 3 x 3 grid lends itself to thinking in terms of fours, or the tetrad; while the decadic format encourages triadic interpretations. The basic overall shapes are triangles, squares and circles. An 'open grid' provides an extensive space of points which can be populated from a variety of starting points leading to regions of confluence where meaning is to be negotiated.



**Decadic meaning grid**

To be noted is that a 'region' is any space defined by one or more MMs. If the MMs are single words, then we have the play of regions defined by pairs of words, triplets of words, quaternaries of words and so on. The meaning space of words as used in natural language may be multi-dimensional or indeterminate, so representation in two-dimensional space is only



**Dyadic, Triadic, Hexadic regions**

an approximation; but it is an approximation greatly enriched by playing a game, which gives every region multiple interpretations.

The supposition in meaning games is that we can translate from the multi-dimensionality of meaning into two-dimensional geometries and back again and that this translational ability is enhanced by having a group of people working together. There can be no rules in a strong sense for this process of translation, since the intrinsic realm of meaning we have called multi-dimensional is *a priori* beyond definition and codification. We do not have on the one hand the realm of meaning and on the other the realm of representation on a page as if we could compare them. This is why the term *archetype* has been applied to the realm of meaning to signify forms we cannot directly apprehend but inform all our understandings.

## NUMBER ARCHETYPES

The idea of the integers as *archetypes* prevalent throughout all kinds of search for meaning is now mostly associated with Carl Jung and his pupil Marie Louise von Franz.

After C. G. Jung had completed his work on synchronicity in "Synchronicity: An Acausal Connecting Principle," he hazarded the conjecture, already briefly suggested in his paper, that it might be possible to take a further step into the realization of the unity of psyche and matter through research into the archetypes of the natural numbers. He even began to note down some of the mathematical characteristics of the first five integers on a slip of paper. But, about two years before his death, he handed the slip over to me with the words: "I am too old to be able to write this now, so I hand it over to you." --- Marie-Louise von Franz, from the preface of *Number and Time*.

It is worth while spending some time on reviewing the concept of archetype. The following extracts are from 'The Emergence of Archetypes in Present-Day Science and Its Significance for a Contemporary Philosophy of Nature' by Charles Card (<http://www.goertzel.org/dynapsyc/1996/natphil.html>) from which we quote extensively. In Appendix 2 there is further amplification which includes the planetary or astrological features of archetypes.

Paul Schmitt has given the following etymology of the word 'archetype':

The first element 'arche' signifies 'beginning, origin, cause, primal source, and principle,' but it also signifies 'position of a leader, supreme rule and government' (in other words a kind of 'dominant'); the second element 'type' means 'blow and what is produced by a blow, the imprint of a coin...form, image, copy, prototype, model, order, and norm,'...in the figurative, modern sense, 'pattern, underlying form, primordial form' (the form, for example, 'underlying' a number of similar human, animal, or vegetable specimens).

Citing Von Blumenthal, Van der Hammen has argued that the meaning given to 'type' as 'the impression made by a blow' is incorrect, and he derives 'type' from the Greek noun 'typos', which originally referred to a mould (a hollow form or matrix). There are numerous instances of the use of the term 'archetype', or its Greek form, archetypos, or the Latin form, archetypus. The term was used in the metaphysical sense of Idea, namely as the original in the Mind of God of which all things are copies, by Philo Judaeus (first century) and in a more or less similar way by Plotinus. Apparently, Jung took the term 'archetype' from two sources, namely the Corpus Hermeticum and Dionysius the Areopagite's *De Divinis nominibus*... In the 16th Century, Johannes Kepler used the term 'archetypus' to refer to ideas or forms pre-existent in the Mind of God which are geometrical in nature. Because the human soul is, according to Kepler, the Image of God, the human is capable of discerning the archetypal geometrical forms according to which the world is structured. Other usages of the term 'archetype' can be found in Rene Descartes' 1641 printing of his *Meditationes Prima Philosophia* and later by John Locke, in Books II and IV of his *Essay Concerning Human Understanding*.



The most notable and, for some, the most notorious use of the term 'archetype' prior to Jung occurred in the development of transcendental morphology that grew out of 19th Century Naturphilosophie. . . .The approach to homology established by Owen and his predecessors was altered drastically by Darwin. Darwin converted the basis of homology from pattern continuity to evolutionary descent, and in doing this, he changed the notion of archetype accordingly. In *The Origin of the Species* he wrote,

The explanation [for stable patterns] is to a large extent simply based on the theory of the selection of successive slight modifications...if we suppose that an early progenitor - the archetype as it may be called - of all mammals, birds, and reptiles, had its limbs constructed on the existing general pattern, for whatever purpose they served, we can at once perceive the plain significance of the homologous construction of the limbs throughout the class.

Jung himself wrote:

Again and again I encounter the mistaken notion that an archetype is determined in regard to its content, in other words that it is a kind of unconscious idea (if such an expression be permissible). It is necessary to point out once more that archetypes are not determined as to their content, but only as regards their form, and then only to a very limited degree. A primordial image is determined as to its content only when it has become conscious and is therefore filled out with the material of conscious experience.

The archetypal representations (images and ideas) mediated to us by the unconscious should not be confused with the archetype as such. They are very varied structures which all point back to one essentially 'irrepresentable' basic form. The latter is characterized by certain formal elements and by certain fundamental meanings, although these can be grasped only approximately. The archetype as such is a psychoid factor that belongs, as it were, to the invisible, ultraviolet end of the psychic spectrum. It does not appear, in itself, to be capable of reaching consciousness.

Jung held that the *unus mundus* contains all of the preconditions which determine the form of empirical phenomena, both mental and physical. These preconditions are archetypal in nature and are therefore completely non-perceptual, thus pregeometrical and prelogical. Only when they reach the threshold of psychic perception do they take on specific representations in the form of images of geometric or numerical structures. Consequently, archetypes are the mediating factors of the *unus mundus*. When operating in the realm of psyche, they are the dynamical organizers of images and ideas; when operating in the realm of physis, they are the patterning principles of matter and energy. Thus, archetypes lie behind the acausal orderedness of the physical world, as well as act as structuring principles for causal processes. When the same archetypes operate simultaneously in both realms, they give rise to synchronistic phenomena. Pauli approached the archetypal hypothesis by questioning the assumption that natural laws can be derived from the "material of experience" alone:

What is the nature of the bridge between the sense perceptions and the concepts? All logical thinkers have arrived at the conclusion that pure logic is fundamentally incapable of constructing such a link.



AN ARCHETYPAL LANDSCAPE

In his discussion of the relevance of archetypes to modern science, Card says:

A further indication of archetypal order in quantum phenomena may be inferred from the prominent role played by symmetry properties and principles in the formulation of quantum mechanics and in the description of elementary particles. The correspondence of the concept of abstract group with its particular realizations to the concept of archetype-as-such with its archetypal representations has received attention from several authors: Jung himself initiated this comparison when he asserted that the archetype, "might perhaps be compared to the axial system of a crystal, which, as is were, preforms the crystalline structure in the mother liquid, although it has no material existence of its own." Werner Nowacki has pursued the relationship between archetypes and groups further, asserting that symmetry groups may be thought of as primal images:

Symmetries are formal factors which regulate material data according to set laws. A symmetry element or a symmetry operation is in itself something irrepresentational. Only when...it has an effect upon something material does it become both representational and comprehensible. As primal images the symmetry groups underlie, as it were, crystallized matter; they are the essential patterns according to which matter is arranged in a crystal....The analogy between symmetry elements and the archetypes is clearly unusually close. This is the pivot of the structure of reality.

We will have reason to return to the theme of symmetry later on.

What is important for our discussion is to realize that Marie Louise von Franz largely limited herself to just the *first four numbers*.

The archetypes primarily represent dynamic units of psychic energy. In preconscious processes they assimilate representational material originating in the phenomenal world to specific images and models, so that they become introspectively perceptible as "psychic" happenings. In *Number and Time*, von Franz has discussed in particular detail the qualitative aspects of the four archetypes called the quaternio. While the quaternio are naturally associated with the first four integers, their archetypal nature gives them a much more comprehensive role. von Franz has given a summarizing statement of their archetypal behavior:

Numbers then become typical psychological patterns of motion about which we can make the following statements: One comprises wholeness, two divides, repeats and engenders symmetries, three centers the symmetries and initiates linear succession, four acts as a stabilizer by turning back to the one as well as bringing forth observables by creating boundaries, and so on. (*loc. cit.*)

Card also cites von Weizsacker, who spoke of ur-phenomena based on *two*; we can also think of Charles Sanders Peirce whose metaphysics was based on *three* (Oneness, Twoness and Threeness). What is apparent here is that key figures in thinking about the meaning of the integers as archetypes have restricted themselves to just the first 2, 3 or 4. In contrast, Bennett

set himself to investigate the first *twelve* integers, even though, as we shall see, he really did not go beyond eight.

Arnold Mindell, the 'process' psychologist, has argued that different people operate with different *number-bases*. We are used to the decimal number base, which uses ten digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. The symbol 10 for ten signifies that we 'start again' in counting up to ten, the '1' signifying ten because of its position. If we had a number base of 7, then 10 would not signify ten but seven, 21 would not signify twenty one but fifteen and so on. In the modern world we are also used to the binary system where, for example 10 signifies two, 21 signifies five and so on.

'Starting again' in our count is psychologically equivalent to reaching the limits of our discrimination and adopting another cycle to deal with higher numbers. This enables us to *count* however large a number we want but it does not mean that we can *see* larger wholes. The number-base signifies the limits of our mental embrace. The difference between counting and seeing is of primary importance. In counting we can deal with one thing at a time while in seeing, while in seeing we need to grasp the whole 'all at once'. Obviously, counting relates to the many and seeing to the one. We must emphasise that this does not mean that we have to take counting as one thing and seeing as another!

Bennett made significant contributions to our understanding of the meaning of the integers from 5 to 8. In particular, these two numbers were given special treatment. For the number 7, he developed ideas derived largely from Gurdjieff. Gurdjieff in his turn concentrated almost exclusively on the numbers 3 and 7. As we said, Bennett aimed to deal with the integers from 1 to 12 but did not in fact do much for the last four numbers. For 9, he took the Enneagram symbol from Gurdjieff. For 10 and 11 he made vague statements. The number 12 is used extensively, but scrutiny will reveal that he dealt with it largely as the compound 3 x 4.

We can make a grid of the first twelve numbers, taking into account the strong influence of fourness. Bennett himself tended to group the numbers or systems into fours, a trend which began in Volume I of *The Dramatic Universe*. This simple arrangement gives an interesting picture, in which some patterns may be seen.

9	10	11	12
5	6	7	8
1	2	3	4

Just from a cursory glance, we notice that the third column is all primes. It is also the case that the transitions from 3 to 4 and from 7 to 8 are the 'critical intervals' Gurdjieff describes in his explanations of the *octave*, which might lead us to suppose that there is some equivalent for the transition from 11 to 12.

The first four numbers are always taken as universal, applying to everything. They are the most abstract. In his treatment of the natural sciences, Bennett correlated these numbers with 'hyponomic existence' or that which was subject to law; in common parlance, the material world. The first four systems can be thought of as rudimentary. Everything that exists must include them.

The next four numbers mark a significant change and indeed Bennett ascribed significance as such to the pentad. In his early scheme, these numbers correlate with the world of *life*, or that which is autonomic and has its own meaning. The number 5 relates to a virus, while the number 8 relates to the human self. Bennett went on to relate the number 6 to the present moment and

events, while he related the number 7 to transformation. In life-terms, 6 relates to the cell and 7 to the organism.

The last four numbers are akin to framework conditions or 'cosmic' totalities. Bennett related 9 to cosmoses, or 'worlds', while 12 he related to 'fulfilment'. Associating from the systemic attribute of 12, we might consider 8 and 4 to represent degrees of fulfilment. Bennett called 8 'completedness'. The number 4 appears in all cultures as the number for the totality of matter, as in the four elements; or for the 'world'.

Looking to the columns, we notice that the second one contains all those systems that are strongly symmetrical or concerned with balance and complementarity. This is in contrast with the third column, which contains the systems that are most dynamic and concerned with change. What then of the first column? One striking thing is that Bennett often spoke of the pentad as enabling us to *identify* the monad: whereas the monad itself is like a collection, the pentad shows a self-sufficient whole. With the pentad, the monad discovers its 'name'. The systems in the first column are all *starting points*. In the number-base of 4, they signify a new cycle or new beginnings. The set of columns then signifies commencement, complimentary and completion. There is a meta-pattern.

The three rows can be seen as universal, emergent and containing; but such terms are at best the crudest approximations to their meaning.

It is tempting to consider a 4 x 4 grid. After all, in Bennett's scheme there is no inherent reason why the systems should stop at 12, the duodecad. 13 is a significant number, e.g. in the Jewish tradition. 14 and 15 often appear in lists of 'principles' and 16 is the development of 4 as  $16 = 4 \times 4$ . It is also the number of the next N-gram after the Enneagram in the series defined as  $n = 1, 4, 9, 16, 25, \dots$  the series of the squares (see Appendix 3).

The placement of the systems within a meaning grid draws attention to them taken as a higher totality. The meta-pattern portrays a 'meta-system' or system of systems. This is a natural extension of taking seriously the fact that known treatments of the numbers as archetypes only encompass a limited range of numbers and gives this number significance.

**THE ENIGMA OF THE ALPHABET**

The origin of alphabets as we know them today goes back to the 17<sup>th</sup> century BC, when people in the Sinai area developed a series of signs based on Egyptian hieroglyphics, but operating in a very different way. The word *aleph* meant ox and the sign for an ox, like an inverted A, was used to represent the first *sound* of the word, namely ‘a’. Similarly, the word *beth* meant house, and its sign was used to represent the first sound or ‘b’. In other words, signs were adopted and used to represent sounds and *not* meanings.

The alphabet we are familiar with originated with the Phoenicians in the 12<sup>th</sup> century BC. One branch went on to become the Hebraic alphabet and another to become the Greek alphabet by the 9<sup>th</sup> century BC. The Greeks added signs for the vowels. The Greek alphabet gave rise to the modern European ones. The Greek alphabet has 28 signs whereas our English one, based on the Roman version, has 26. The alphabet for Hebrew has 22 signs and does not include any vowels.

For centuries, people have ascribed archetypal meaning to the series of letters in the alphabets. This is strongly exemplified by Hebrew as expounded in the mystical system called *Kabbalah* (see Appendix 4). The sequence of letters we have in the English alphabet has come down to us over thousand of years. A question is whether we can discover any sense and meaning to this sequence, which may have been subject to many historical contingencies.

First we should note the almost universal appearance of the first three letters; if we allow our ‘c’ to stand in for the Greek  $\gamma$  or gamma (the original letter was from the word for *camel* and this is taken over, it seems, into our English letter ‘c’). In some sense, the first suggests the insemination of the spirit and the second container or womb (which relates to *beth* as *house*); with the third as of the nature of becoming. There is even some correspondence with Peirce’s Firstness, Secondness and Thirdness (see Appendix 5) and we have the saying, ‘Simple as A, B, C’. Now, if we adopt the device of ascribing the first three letters to the number 1 and then go on counting, we find the following result:

<b>ABC</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>	<b>N</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>

<b>O</b>	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>U</b>	<b>V</b>	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>

The *vowels* A, E, I, O, U fall on the *prime numbers* 1, 3, 7, 13, 19. The primes 5, 11 and 17 do not match vowels; but Y, which can act as a vowel, does (23). Of course, sometimes 2 is taken as a prime also. It is striking that E - which here corresponds to 3 - is the letter most used in the English language, since 3 is the dominant prototype of a system, as in the influence of the Holy Trinity, dialectical materialism and dialogue.

The prime numbers can only be divided by themselves and in this sense are unique. It is impossible to exactly predict when a prime number will occur in the series of natural numbers. Some commentators have therefore proposed that the numerical archetypes should be restricted to the series of prime numbers.

1 2 3 5 7 11 13 17 19 23 29 31 etc.

1 2 3 4 5 6 7 8 9 10 11 12 etc.

We have placed the sequence of integers under the primes to suggest a correspondence in *ordered sequence*. From one perspective, 10 may be the equivalent of 23 while from another it is obviously different. *How* different things can be seen as 'equivalent' is an important aspect of systematics. The correlation with primes can be extended to consider even more extraordinary numbers such as the *transcendentals* (see Appendix 6). A few examples are given here.

<b>0</b>	<b>1</b>	<b>φ</b>	<b>2</b>	<b>e</b>	<b>3</b>	<b>π</b>	<b>4</b>	<b>δ</b>	<b>5</b>
	golden mean	exponential		ratio of cir. to radius		feigenbaum			

φ appears in all matters of design and proportion, *e* is used in logarithms, π is universally known and δ is a number of great significance in complexity theory. Though we have found that the appearance of the prime numbers in the sequence of integers has some correspondence with the appearance of the vowels in the sequence of letters in the alphabet, this 'proves' nothing. It can only be suggestive, in the manner Jung spoke of *synchronicity*, which is the property of correspondence of forms of two things that has no apparent reason but can be found to be *meaningful*. We can explore the correspondence in question further by ringing into the picture such things as Gurdjieff's enneagram, in which we see a sequence 'punctuated' by special elements.

**0 – 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9**

We note of course that the enneagram has a much simpler and symmetrical form than that of the alphabet with its consonants and vowels. But the vowels are like 'energies' or qualities that are given form by the constraints of the consonants just as the stages of the enneagram provide a 'container' for the energies introduced at the critical points. The vowels have always been given special significance, as described by Joseph Rael in his explanations of chanting as something that transcends particularities of different languages (see Appendix 7).

If we are to consider numbers as signifying archetypes, then we can also consider letters as signifying archetypes. This can at least open the way to appreciating yet other manifestations of systems in even more subtle forms as in painting, where we might take the colours as 'vowels' and the lines as 'consonants'.

The realm of natural language is rich in content and form but it is usually left to the poets to realise this. For the most part, we skate over its surface and are rarely conscious of its depth. Thinking in words need not be linear and we restrict ourselves in this way by a narrowness of awareness. Language involves an *active* attention to every distinct element (so that they can be 'counted') but also a *receptivity* to the wholeness from which meaning comes. Between these two we participate in the *making of meaning* (perhaps a *third* force in the dynamism).

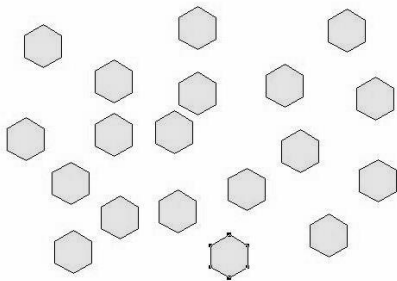
## THE QUALITATIVE NATURE OF SYSTEMATICS

Since systematics draws attention to the *number of terms* in a system, we have to think about how we discriminate and count them. Terms are not things just hanging around for us to enumerate and collect. Here, we come across a fundamental paradox or ambiguity in the fundamental nature of systematics: it is predicated on understanding the *qualitative* significance of number. This amounts to saying that it concerns the qualities of quantity! Let us think about this in terms of a *discourse*, such as a text or story or conversation.

A discourse does not come in discrete chunks, though there are words, sentences and so on. Its *meaning* is as much continuous and unbroken as it is in parts. We could extract every distinct word and every distinct sentence and take these as indicators or carriers of meaning. The former is used when we make an *index*, which is one standard way in which we 'bring out' what the discourse contains. The latter is rarely used, though it would be a reasonable approach, since every sentence is supposed to convey one idea. In practice, there is some ambiguity as between sentences and meanings and the one cannot be identified with the other.

If one person summarised the discourse into a set of meaning chunks, another might do it differently. We call chunks of meaning 'molecules of meaning' (MMs) to signify that they will always be complex in their own right. Various attempts, such as that of Descartes, to abstract 'atomic' or irreducible units of meaning from e.g. philosophic discourse have failed. Just as particle physics has split the atom and revealed a great complexity of yet 'more fundamental' particles, so we find that 'a' meaning can always be resolved into relations between other meanings. In natural language, 'bootstrapping' prevails.

It is important to point out that the complexity is not hierarchical. There are not 'smaller' meanings which are made into 'larger' ones. There is always some kind of judgement of what is *essential*. This judgement relates to the nature of the discourse and the person who is articulating the MMs it contains. If a reader went through the previous paragraphs, he might come up with a different set of MMs than would the author. There could, however, be considerable overlap, which would mean that the reader and the author could carry on a coherent conversation.



If we remember that meaning is both continuous and discrete (wave and particle if one likes that analogy) then we should realise that any identification of a set of MMs not only contains a set of discrete elements but also, at least by implication, some aspect of the continuum. This is represented in the method of logovisual technology (LVT) by having the discrete items written onto separate hexagons but then placed on a display board so that we also have the 'gaps' between the MMs to signify the plenum of continuous associations between the MMs and even so to

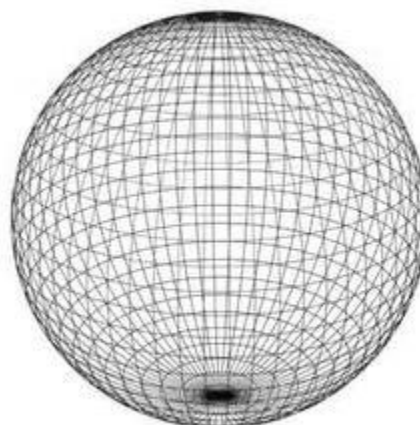
say 'containing' them. The initial blank display signifies the pure continuum before any act of discrimination.

Putting to one side the detail of how similar or dissimilar the sets of MMs that different people produce might be, in systematics we are concerned primarily with their *number*. Let us also say that the task in hand is to bring out what are the 'essential' MMs. By preference, some people will go for a smaller number and others for a larger. There is at work something like an inherent 'plane of reference' or way of 'cutting through' the whole complex such that different planes of reference are giving different results. A plane of reference relates to what one is tending to look for.

Going back to the paradox of quality and quantity, we can add a third term related to plane of reference as *form*. This idea gets its meaning from considering that we could have N objects but they could be arranged into a *shape* and their shape though visible cannot be counted as the objects can. Described mathematically, a shape can be precisely defined but this description is relational rather than arithmetical. It leads us into algebra. The idea of 'shape' is then extended into a more general idea of form. The word 'form' has been used since the time of Aristotle in contrast with 'matter', when it meant that which was intelligible and could be thought about. In some Scholastic schools of the Middle Ages, matter even needed the *form of quantity* to be measurable! Our use of the word 'form' is intended to mean any kind of shape, however we see what shape might be and we will be extending its meaning to embrace 'images'.

Let us imagine a discourse as a sphere. This does not mean that it 'really is' a sphere; it is simply a means of thinking about some of the questions we have raised. We are using a shape to think with. Now, let us imagine that we take various cross sections through the sphere. We could start at the equator and work our way up to a pole. Picturing this, we can see that a cross-section at the equator will contain 'more' than one near a pole.

Now, the image of a sphere is intended to convey the idea that discourse is not only a *sequence* of elements but also a *holistic* ensemble. This means that any 'region' of the discourse reflects the whole. Thus, the various cross-sections are not of *different parts* of the discourse but relate to different ways of seeing it. The different cross sections will yield different numbers of MMs but yet each will represent the whole.



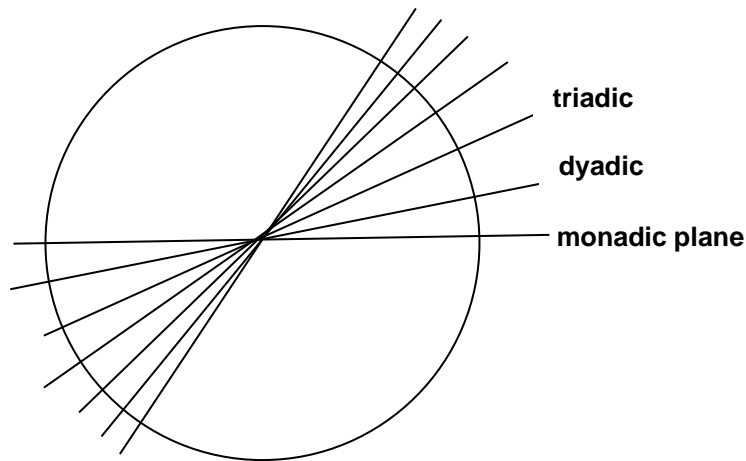
In this picture, every region (close to a point) on the surface will represent the whole in a *monadic* way. The set of all such points would be a *monad*. Thinking of them as 'on the surface' signifies that there are *no essential* discriminations in the monad – it is simply a collection. The regions within the sphere are more essential. We can then think in the following way: the cross sections as we move from pole to equator signify higher and higher multi-term systems. The equatorial section then represents the highest order of system we can reach. The polar region is simply the monad as represented by one term.

The last statement needs explanation: *any* element in a monad can stand for the whole of its content. This is, in fact, how wholeness is understood in phenomenology.

We can reduce the image to a simpler form by picturing just a circle. In this image, we add the different cross sections as relating to different planes – or *systems* - of representation.

The monadic plane is now not the outer surface of a sphere but a line through the circle, which divides it into two halves. We can take this plane as a boundary between what is consciously articulate and what is not. The lower half of the circle is then a symbol of the unconscious and inarticulate.



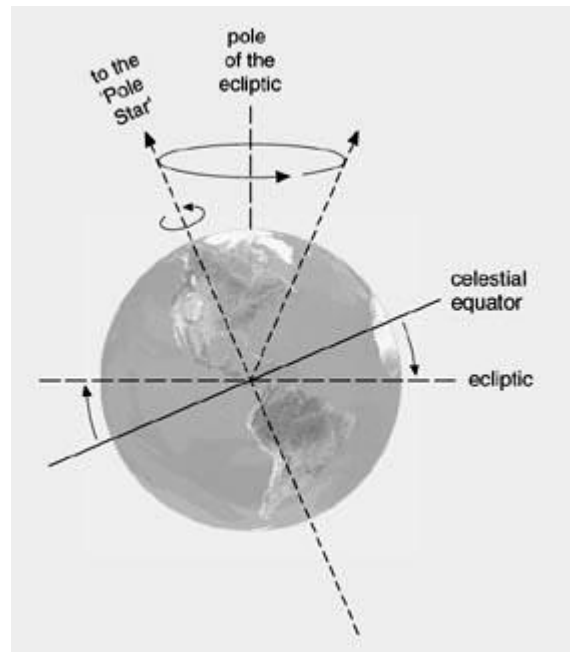


The portrayal of successive systemic cross sections is shown as at different angles to the monad. This is to signify that they progressively enter into the realm of the unconscious. As they are shown in the diagram, they are asymptotic to a line in the vertical direction. This is to suggest that they have no finality, only a limit. It would have been equally possible to shown them as continuing round to eventually coincide with the monadic boundary. In which

case, the presumption would be that the set of cross sections or systems would be finite and forms a cycle.

The 'conscious' part of a line would signify articulation of an increasing number of discrete terms. The 'unconscious' part would signify an increasing inclusion of continuous meaning. This representation agrees with the picture Jung gives of integrating unconscious elements into conscious experience. It does not mean that the unconscious elements become 'known' in any obvious sense. It could well imply that understanding a higher term system would require a greater participation in the unconscious, rather as Gurdjieff suggests in his expositions of cosmic laws in *Beelzebub's Tales*.

The image can also be amplified by reference to ancient thinking about the cosmos. The lower half would then be the cosmic 'sea' or that which is below the plane of the ecliptic. This how Santillana and von Dechend speak of it in their masterwork *Hamlet's Mill*. They interpret world wide references to a Great Flood as signifying not an onrush of water due to terrestrial climate but a shift of the ecliptic relative to the celestial equator. The constellations visible in any epoch do not remain the same and some descend or 'drown' over time while others emerge. As a new one comes into the ascendant, another goes out of sight. (Some helpful explanations can be found at <http://fusionanomaly.net/hamletsmill.html> which also quotes from William Sullivan). The realm of visible stars represents the intelligible realm of what is knowable. It gives us a 'celestial architecture' and, for the ancients, was their instructor in number.



Santillana, Sullivan, Stewart and others have spoken about the 'shock' that may have been experienced by the ancients when they discovered that 'heaven' was changing. According to Pete Stewart ( see his 'Architecture of the Spirit' at <http://www.duversity.org/Pete.htm>), this must have been the origin of the idea and sense that time and eternity were broken apart and there needed to be some way of 'mending' them again. One way was to find the pathway to the gods, and another was to gain immortality.



A third way came down to us in Christianity and the idea of the *Redeemer*. We rightly associate Christ with the *cross* which is an obvious symbol of the divorce between the eternal (vertical) and the temporal (horizontal). When Christ is nailed onto the cross to suffer and die, he is taking on the 'sins of the world'. We should remember that the word 'sin' originally meant not immorality but *missing the mark*.

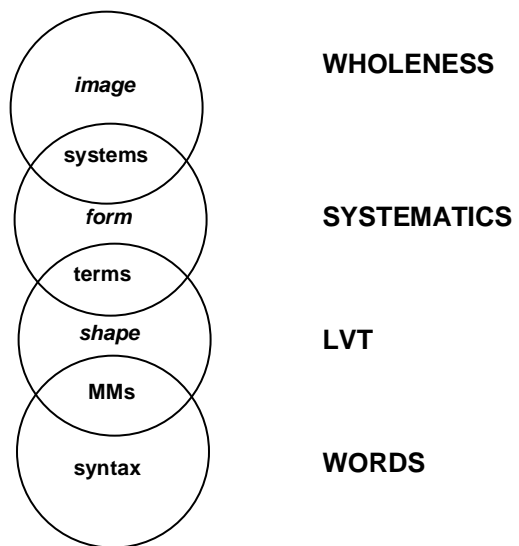
While the initial reaction to the realisation of cosmic change may have been in terms of catastrophe, there eventually came a complementary sense of *progress*. Loss of the initial vision of agreement between heaven and earth was reflected in the Biblical story of the Fall of Man and the expulsion from Paradise; but this was also linked to *eating from the tree of knowledge*.

We have used various images including Dali's famous painting of the Crucifixion and made mention of various ancient narratives. This illustrates the contention that between quantity and what can articulated and enumerated, and quality which must remain more a feeling than a thought, there is a realm of *form* that is essential if we are to be able to think about number in a qualitative way (see Appendix 8).

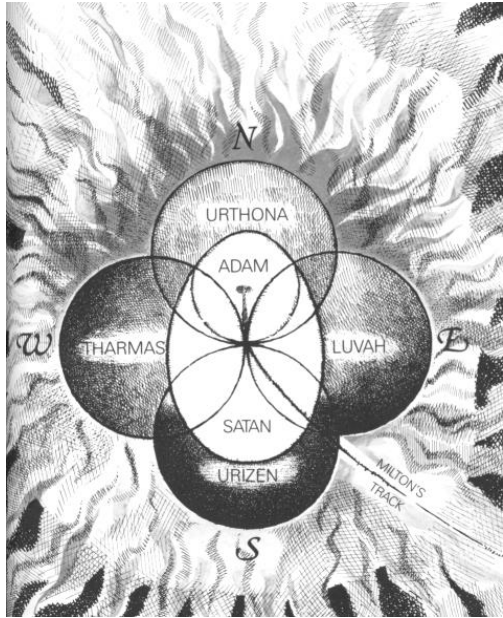
Underlying our discussion has been the prospect that what is to hand in discourse, such as words and sentences, does not directly translate – at last by any simple formula – into *terms of systems*. A term is as enigmatic as the system to which it belongs. We cannot discern the terms without awareness of the system and we cannot identify the system without awareness of the terms.

In their turn, terms and MMs are related. An MM is any discernible and expressible meaning, whereas a term must *belong* to a system. In LVT, we can produce terms by using shape, as in an arrangement of MMs. The words 'syntax', 'shape', 'form' and 'image' shown in the diagram all refer to ways in which many elements are related together. In the early descriptions of systematics we had only terms and systems. Then we began to appreciate the relevance of form. With the development of LVT, we next realised how terms could come out of meaningful elements (MMs) through their arrangements or collective 'shape'. This led us down into 'syntax' or the coherent use of words.

Because we are making a picture, the various terms are shown separate from each other, and the diagram even suggests some kind of hierarchy. It is this sort of thing that requires us to distinguish the term 'image' from such things as diagrams. *Image* is what is seen in the mind and not just what is on paper. We call a picture a 'work of art' if it transcends this distinction. The picture in the diagram is as false as it is true. Anyone looking at it needs to create the image it *means*.



Wholeness is the realm of continuous meaning. It stands in contrast with the realm of words in an important way: words are the way we are able to *split things apart*. This is their *virtue* as well as their vice! Ultimately, words are just marks on paper or sounds in the air, while wholeness is like the air itself.



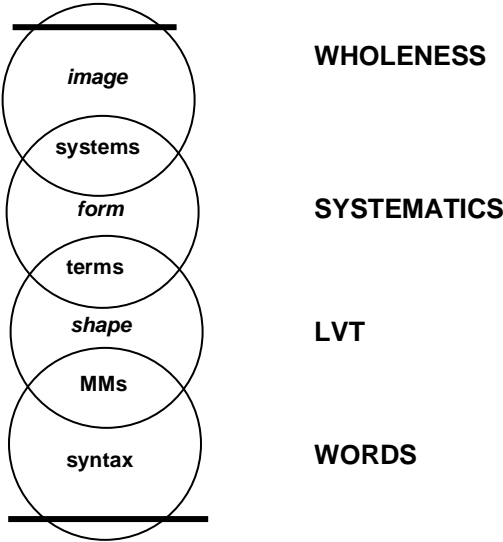
Any picture has elements of syntax, shape, form and image and it is up to us to discriminate them. The nearer we can get to the image, the better for our capacity to *see meaning*. The shape and form of the diagram easily evokes a resonance with the system of *four elements*. But, would it be of value to explore the four realms of the diagram in relation to Greek ideas about earth, water, air and fire? Alternatively, we see that the diagram combines threes and fours, or consist of seven (or potentially nine) components: could we then explore it as a duodecad, heptad or even ennead? Again, there is a suggestion that our four realms might correspond to the 'four worlds' as discussed by John Bennett in his collection of talks published as *Creation*.

Systematics can speak of the qualitative significance of number (quantity) because it brings into play the meaning of form. Form is not yet another 'thing' to add to 'quality' and 'quantity' but is a way of seeing how to relate them. But it brings into play a whole new realm of thinking that extends into William Blake's *Imagination*. We may invent the term *structural images* to signify pictorial forms that are intended to represent systematic patterns (see Appendix 9).

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of thinking that extends into William Blake's *Imagination*. We may invent the term *structural images* to signify pictorial forms that are intended to represent systematic patterns (see Appendix 9). Finally, we return to the original starting point of taking into account both the discrete and the continuous in discerning terms of systems. According to the French mathematician Francoise Chatelin our scope of understanding is *bounded* by random and discrete elements on the one hand and continuous wholeness on the other. We cannot go below the former or above the latter. By using Bennett's technique of *partition and blending* we can derive four main regions. From the top down:

1. Plenum. Wholeness-wholeness. The mystic state of all-inclusive seamlessness and art.
2. Structures. Wholeness-discreteness. The realm of systematics.
3. Articulation. Discreteness-wholeness. The realm of LVT.
4. Language. Discreteness-discreteness. The realm of words.



In the diagram, the extremes of 'randomly discrete' and 'holistically continuous' are marked by bold lines. This picture lends itself to portrayal as an 'octave'. This is to play with terms and forms.

Do' the holistic continuity of all  
-----  
Si images as in art  
La systems as in systematics  
Sol form as related to ideas of togetherness  
Fa terms as of systems  
---- shape of visual representations  
Mi MMs as in LVT  
Re sentences as representing syntax  
Do associations of words without any syntax, shape, etc.

## APPENDIX ONE – moment of ecstasy

From Dostoevsky's *The Idiot* pp. 241-3

He remembered among other things that he always had one minute just before the epileptic fit (if it came on while he was awake), when suddenly in the midst of sadness, spiritual darkness and oppression, there seemed at moments a flash of light in his brain, and with extraordinary impetus all his vital forces suddenly began working at their highest tension. The sense of life, the consciousness of self, were multiplied ten times at these moments which passed like a flash of lightning. His mind and his heart were flooded with extraordinary light; all his uneasiness, all his doubts, all his anxieties were relieved at once; they were all merged into a lofty calm, full of serene, harmonious joy and hope. But these moments, these flashes, were only the prelude of that final second (it was never more than a second) with which the fit began. That second was, of course, unendurable. Thinking of that moment later, when he was all right again, he often said to himself that all these gleams and flashes of the highest sensation of life and self-consciousness, and therefore also of the highest form of existence, were nothing but disease, the interruption of the normal condition; and if so, it was not at all the highest form of being, but on the contrary must be reckoned the lowest. And yet he came at last to an extremely paradoxical conclusion. "What if it is disease?" he decided at last. "What does it matter that it is an abnormal intensity, if the result, if the minute of sensation, remembered and analysed afterwards in health, turns out to be the acme of harmony and beauty, and gives a feeling, unknown and undivined till then, of completeness, of proportion, of reconciliation, and of ecstatic devotional merging in the highest synthesis of life?" These vague expressions seemed to him very comprehensible, though too weak. That it really was "beauty and worship," that it really was the "highest synthesis of life" he could not doubt, and could not admit the possibility of doubt. It was not as though he saw abnormal and unreal visions of some sort at that moment, as from hashish, opium, or wine, destroying the reason and distorting the soul. He was quite capable of judging of that when the attack was over. These moments were only an extraordinary quickening of self-consciousness—if the condition was to be expressed in one word—and at the same time of the direct sensation of existence in the most intense degree. Since at that second, that is at the very last conscious moment before the fit, he had time to say to himself clearly and consciously, "Yes, for this moment one might give one's whole life!" then without doubt that moment was really worth the whole of life. He did not insist on the dialectical part of his argument, however. Stupefaction, spiritual darkness, idiocy stood before him conspicuously as the consequence of these "higher moments"; seriously, of course, he could not have disputed it. There was undoubtedly a mistake in his conclusion—that is, in his estimate of that minute, but the reality of the sensation somewhat perplexed him. What was he to make of that reality? For the very thing had happened; he actually had said to himself at that second, that, for the infinite happiness he had felt in it, that second really might well be worth the whole of life. "At that moment," as he told Rogozhin one day in Moscow at the time when they used to meet there, "at that moment I seem somehow to understand the extraordinary saying that *there shall be no more time*. Probably," he added, smiling, "this is the very second which was not long enough for the water to be spilt out of Mahomet's pitcher, though the epileptic prophet had time to gaze at all the habitations of Allah."

## APPENDIX TWO - Archetypal Principles

excerpted from Richard Tarnas, *Cosmos and Psyche: Intimations of a New World View*, New York: Viking, 2005) [http://www.matthewstelzner.com/Essay\\_RT\\_Planets.aspx](http://www.matthewstelzner.com/Essay_RT_Planets.aspx)

The concept of planetary archetypes, in many respects the pivotal concept of the emerging astrological paradigm, is complex and must be approached from several directions. Before describing the nature of the association between planets and archetypes, however, we must first address the general concept of archetypes and the remarkable evolution of the archetypal perspective in the history of Western thought.

The earliest form of the archetypal perspective, and in certain respects its deepest ground, is the primordial experience of the great gods and goddesses of the ancient mythic imagination. In this once universal mode of consciousness, memorably embodied at the dawn of Western culture in the Homeric epics and later in classical Greek drama, reality is understood to be pervaded and structured by powerful numinous forces and presences that are rendered to the human imagination as the divinized figures and narratives of ancient myth, often closely associated with the celestial bodies.

Yet our modern word *god*, or *deity* or *divinity*, does not accurately convey the lived meaning of these primordial powers for the archaic sensibility, a meaning that was sustained and developed in the Platonic understanding of the divine. This point was clearly articulated by W. K. C. Guthrie, drawing on a valuable distinction originally made by the German scholar Wilamowitz-Moellendorff:

*Theos*, the Greek word which we have in mind when we speak of Plato's god, has primarily a predicative force. That is to say, the Greeks did not, as Christians or Jews do, first assert the existence of God and then proceed to enumerate his attributes, saying "God is good," "God is love" and so forth. Rather they were so impressed or awed by the things in life or nature remarkable either for joy or fear that they said "this is a god" or "that is a god." The Christian says "God is love," the Greek "Love is *theos*," or "a god." As another writer [G. M. A. Grube] has explained it:

"By saying that love, or victory, is god, or, to be more accurate, a god, was meant first and foremost that it is more than human, not subject to death, everlasting .... Any power, any force we see at work in the world, which is not born with us and will continue after we are gone, could thus be called a god, and most of them were."

In this state of mind, and with this sensitiveness to the superhuman character of many things which happen to us, and which give us, it may be, sudden stabs of joy or pain which we do not understand, a Greek poet could write lines like: "Recognition between friends is *theos*." It is a state of mind which obviously has no small bearing on the much discussed question of monotheism or polytheism in Plato, if indeed it does not rob the question of meaning altogether.

As the Greek mind evolved, by a process sometimes too simply described as a transition from myth to reason, the divine absolutes ordering the world of the mythic imagination were gradually deconstructed and conceived anew in philosophical form in the dialogues of Plato. Building on both the Presocratics' early philosophical discussions of the *archai* and the Pythagorean understanding of transcendent mathematical forms, and then more directly on the critical inquiries of his teacher Socrates, Plato gave to the archetypal perspective its classic metaphysical formulation. In the Platonic view, archetypes-the Ideas or Forms-are absolute essences that transcend the empirical world yet give the world its form and meaning. They are timeless universals that serve as the fundamental reality informing every concrete particular. Something is beautiful precisely to the extent that the archetype of Beauty is present in it. Or, described from a different viewpoint, something is beautiful precisely to the extent that it participates in the archetype of Beauty. For Plato, direct knowledge of these Forms or Ideas is regarded as the spiritual goal of the philosopher and the intellectual passion of the scientist.

In turn, Plato's student and successor Aristotle brought to the concept of universal forms a more empiricist approach, one supported by a rationalism whose spirit of logical analysis was secular rather than spiritual and epiphanic. In the Aristotelian perspective, the forms lost their numinosity but gained a new recognition of their dynamic and teleological character as concretely embodied in the empirical world and processes of life. For Aristotle, the universal forms primarily exist *in* things, not above or beyond them. Moreover, they not only give form and essential qualities to concrete particulars but also dynamically transmute them from within, from potentiality to actuality and maturity, as the acorn gradually metamorphoses into the oak tree, the embryo into the mature organism, a young girl into a woman. The organism is drawn forward by the form to a realization of its inherent potential, just as a work of art is actualized by the artist guided by the form in the artist's mind. Matter is an intrinsic susceptibility to form, an unqualified openness to being configured and dynamically realized through form. In a developing organism, after its essential character has been fully actualized, decay occurs as the form gradually "loses its hold." The Aristotelian form thus serves both as an indwelling impulse that orders and moves development and as the intelligible structure of a thing, its inner nature, that which makes it what it is, its essence. For Aristotle as for Plato, form is the principle by which something can be known, its essence recognized, its universal character distinguished within its particular embodiment.

The idea of archetypal or universal forms then underwent a number of important developments in the later classical, medieval, and Renaissance periods. It became the focus of one of the central and most sustained debates of Scholastic philosophy, "the problem of universals," a controversy that both reflected and mediated the evolution of Western thought as the locus of intelligible reality gradually shifted from the transcendent to the immanent, from the universal to the particular, and ultimately from the divinely given archetypal Form (*eidos*) to the humanly constructed general name (*nomina*). After a final efflorescence in the philosophy and art of the High Renaissance, the concept of archetypes gradually retreated and then virtually disappeared with the modern rise of nominalist philosophy and empiricist science. The archetypal perspective remained vital principally in the arts, in classical and mythological studies, and in Romanticism, as a kind of archaic afterglow. Confined to the subjective realm of interior meaning by the dominant Enlightenment world view, it continued in this form latent in the modern sensibility. The radiant ascent and dominance of modern reason coincided precisely with the eclipse of the archetypal vision.

Between the triumph of nominalism in the seventeenth century and the rise of depth psychology in the twentieth, philosophy brought forth a weighty development, Kant's Copernican revolution in philosophy, that subsequently had major consequences for the form in which the archetypal perspective eventually reemerged. With Kant's critical turn focused on discovering those subjective interpretive structures of the mind that order and condition all human knowledge and experience, the a priori categories and forms, the Enlightenment project underwent a crucial shift in philosophical concern, from the object of knowledge to the knowing subject, that has influenced virtually every field of modern thought.

It was not until the turn of the twentieth century that the concept of archetypes, foreshadowed by Nietzsche's vision of the Dionysian and Apollonian principles shaping human culture, underwent an unexpected renaissance. The immediate matrix of its rebirth was the empirical discoveries of depth psychology, first with Freud's formulations of the Oedipus complex, Eros and Thanatos, ego, id, and superego (a "powerful mythology," as Wittgenstein called psychoanalysis), then in an expanded, fully articulated form with the work of Jung and archetypal psychology. Jung, as we have seen, drawing on Kant's critical epistemology and Freud's instinct theory yet going beyond both, described archetypes as autonomous primordial forms in the psyche that structure and impel all human experience and behavior. In his last formulations influenced by his research on synchronicities, Jung came to regard archetypes as expressions not only of a collective unconscious shared by all human beings but also of a larger matrix of being and meaning that informs and encompasses both the physical world and the human psyche.

Finally, further developments of the archetypal perspective emerged in the postmodern period, not only in post-Jungian psychology but in other fields such as anthropology, mythology, religious studies, philosophy of science, linguistic analysis, phenomenology, process philosophy, and feminist scholarship. Advances in understanding the role of paradigms, symbols, and metaphors in shaping human experience and cognition brought new dimensions to the archetypal understanding. In the crucible of postmodern thought, the concept of archetypes was elaborated and critiqued, refined through the deconstruction of rigidly essentialist "false universals" and cultural stereotypes, and enriched through an increased awareness of archetypes' fluid, evolving, multivalent, and participatory nature. Reflecting many of the above influences, James Hillman sums up the archetypal perspective in depth psychology:

Let us then imagine archetypes as the deepest patterns of psychic functioning, the roots of the soul governing the perspectives we have of ourselves and the world. They are the axiomatic, self-evident images to which psychic life and our theories about it ever return.... There are many other metaphors for describing them: immaterial potentials of structure, like invisible crystals in solution or forms in plants that suddenly show forth under certain conditions; patterns of instinctual behavior like those in animals that direct actions along unswerving paths; the *genres* and *topoi* in literature; the recurring typicalities in history; the basic syndromes in psychiatry; the paradigmatic thought models in science; the worldwide figures, rituals, and relationships in anthropology.

But one thing is absolutely essential to the notion of archetypes: their emotional possessive effect, their bedazzlement of consciousness so that it becomes blind to its own stance. By setting up a universe which tends to hold everything we do, see, and say in the sway of its cosmos, an archetype is best comparable with a God. And Gods, religions sometimes say, are less accessible to the senses and to the intellect than they are to the imaginative vision and emotion of the soul.

They are cosmic perspectives in which the soul participates. They are the lords of its realms of being, the patterns for its mimesis. The soul cannot be, except in one of their patterns. All psychic reality is governed by one or another archetypal fantasy, given sanction by a God. I cannot but be in them.

There is no place without Gods and no activity that does not enact them. Every fantasy, every experience has its archetypal reason. There is nothing that does not belong to one God or another.

Archetypes thus can be understood and described in many ways, and much of the history of Western thought has evolved and revolved around this very issue. For our present purposes, we can define an archetype as a universal principle or force that affects-impels, structures, permeates-the human psyche and the world of human experience on many levels. One can think of them in mythic terms as gods and goddesses (or what Blake called "the Immortals"), in Platonic terms as transcendent first principles and numinous Ideas, or in Aristotelian terms as immanent universals and dynamic indwelling forms. One can approach them in a Kantian mode as a priori categories of perception and cognition, in Schopenhauerian terms as the universal essences of life embodied in great works of art, or in the Nietzschean manner as primordial principles symbolizing basic cultural tendencies and modes of being. In the twentieth-century context, one can conceive of them in Husserlian terms as essential structures of human experience, in Wittgensteinian terms as linguistic family resemblances linking disparate but overlapping particulars, in Whiteheadian terms as eternal objects and pure potentialities whose ingression informs the unfolding process of reality, or in Kuhnian terms as underlying paradigmatic structures that shape scientific understanding and research. Finally, with depth psychology, one can approach them in the Freudian mode as primordial instincts impelling and structuring biological and psychological processes, or in the Jungian manner as fundamental formal principles of the human psyche, universal expressions of a collective unconscious and, ultimately, of the *unus mundus*.

In a sense, the idea of archetypes is itself an archetype, an *arche*, a continually shape-shifting principle of principles, with multiple creative inflections and variations through the ages



as diffracted through different individual and cultural sensibilities. In the course of that long evolution, the archetypal idea seems to have come full circle, arriving now in its post-synchronicity development at a place very closely resembling its ancient origins as cosmic *archai* but with its many inflections and potentialities, as well as new dimensions altogether, having been unfolded and explored.

We can thus conceive of archetypes as possessing a transcendent and numinous quality, yet simultaneously manifesting in specific down-to-earth physical, emotional, and cognitive embodiments. They are enduring a priori structures and essences yet are also dynamically indeterminate, open to inflection by many contingent factors, cultural and biographical, circumstantial and participatory. They are in one sense timeless and above the changing flux of phenomena, as in the Platonic understanding, yet in another sense deeply malleable, evolving, and open to the widest diversity of creative human enactment. They seem to move from both within and without, manifesting as impulses, emotions, images, ideas, and interpretive structures in the interior psyche yet also as concrete forms, events, and contexts in the external world, including synchronistic phenomena. Finally, they can be discussed and thought of in a scientific or philosophical manner as first principles and formal causes, yet also be understood at another level in terms of mythic *personae drama/is* that are most adequately approached or apprehended through the powers of the poetic imagination or spiritual intuition. As Jung noted about his own mode of discourse when discussing the archetypal content of psychological phenomena:

It is possible to describe this content in rational, scientific language, but in this way one entirely fails to express its living character. Therefore, in describing the living processes of the psyche, I deliberately and consciously give preference to a dramatic, mythological way of thinking and speaking, because this is not only more expressive but also more exact than an abstract scientific terminology, which is wont to toy with the notion that its theoretic formulations may one fine day be resolved into algebraic equations.

### ***Planetary Archetypes***

The astrological thesis as developed within the Platonic-Jungian lineage holds these complex, multidimensional archetypes governing the forms of human experience are intelligibly connected with the planets and their movements in the heavens. This association is observable in a constant coincidence between specific planetary alignments and specific archetypally patterned phenomena in human affairs. It is important for what follows that we understand the nature of this correspondence between planets and archetypes. It does not appear to be accurate to say that astrologers have in essence arbitrarily used the mythological stories of the ancients about the gods Jupiter, Saturn, Venus, Mars, Mercury, and the rest to project symbolic meaning onto the planets, which are in actuality merely neutral material bodies without intrinsic significance. Rather, a considerable body of evidence suggests that the movements of the planets named Jupiter, Saturn, Venus, Mars, and Mercury tend to coincide with patterns of human experience that closely resemble the character of those planets' mythical counterparts. That is, the astrologer's insight, perhaps intuitive and divinatory in its ancient origins, appears to be fundamentally an empirical one. This empiricism is given context and meaning by a mythic, archetypal perspective, a perspective that the planetary correlations seem to support and illustrate with remarkable consistency. The nature of these correlations presents to the astrological researcher what appears to be an orchestrated synthesis combining the precision of mathematical astronomy with the psychological complexity of the archetypal "imagination, a synthesis whose sources seemingly exist a priori within the fabric of the universe.

Here is where the distinction between the ancient philosophical (Platonic) and the modern psychological (earlier Jungian) conceptions of archetypes becomes especially relevant. Whereas the original Jungian archetypes were primarily considered to be the basic formal principles of the human psyche, the original Platonic archetypes were regarded as the essential principles of reality itself, rooted in the very nature of the cosmos. What separated these two views was the long development of Western thought that gradually differentiated a meaning-

giving human subject from a neutral objective world, thereby locating the source of any universal principles of meaning exclusively within the human psyche. Integrating these two views (much as Jung began to do in his final years under the influence of synchronicities), contemporary astrology suggests that archetypes possess a reality that is both objective and subjective, one that informs both outer cosmos and inner human psyche, "as above, so below."

In effect, planetary archetypes are considered to be both "Jungian" (psychological) and "Platonic" (metaphysical) in nature: universal essences or forms at once intrinsic to and independent of the human mind, that not only endure as timeless universals but are also co-creatively enacted and recursively affected through human participation. And they are regarded as functioning in something like a Pythagorean-Platonic cosmic setting, i.e., in a cosmos pervasively integrated through the workings of a universal intelligence and creative principle. What distinguishes the contemporary astrological view is the additional factor of human co-creative participation in the concrete expressions of this creative principle, with the human being recognized as itself a potentially autonomous embodiment of the cosmos and its creative power and intelligence.

In Jungian terms, the astrological evidence suggests that the collective unconscious is ultimately embedded in the macrocosm itself, with the planetary motions a synchronistic reflection of the unfolding archetypal dynamics of human experience. In Platonic terms, astrology affirms the existence of an *anima mundi* informing the cosmos, a world soul in which the human psyche participates as a microcosm of the whole. Finally, the Platonic, Jungian, and astrological understandings of archetypes are all complexly linked, both historically and conceptually, to the archetypal structures, narratives, and figures of ancient myth. Thus Campbell's famous dictum: It would not be too much to say that myth is the secret opening through which the inexhaustible energies of the cosmos pour into human cultural manifestation.

So also Jung: "I hold Kerenyi to be absolutely right when he says that in the symbol the *world itself* is speaking."

For conceptual clarity, then, when we consider the meaning and character of each planetary archetype in the following chapters, it will be useful to understand these principles in three different senses: in the Homeric sense as a primordial deity and mythic figure; in the Platonic sense as a cosmic and metaphysical principle; and in the Jungian sense as a psychological principle (with its Kantian and Freudian background)-with all of these associated with a specific planet. For example, the archetype of Venus can be approached on the Homeric level as the Greek mythic figure of Aphrodite, the goddess of beauty and love, the Mesopotamian Ishtar, the Roman Venus. On the Platonic level Venus can be understood in terms of the metaphysical principle of Eros and the Beautiful. And on the Jungian level Venus can be viewed as the psychological tendency to perceive, desire, create, or in some other way experience beauty and love, to attract and be attracted, to seek harmony and aesthetic or sensuous pleasure, to engage in artistic activity and in romantic and social relations. These different levels or senses are distinguished here only to suggest the inherent complexity of archetypes, which must be formulated not as literal concretely definable entities but rather as dynamic potentialities and essences of meaning that cannot be localized or restricted to a specific dimension.

Finally, alongside this essential *multidimensionality* of archetypes is their equally essential *multivalence*. The Saturn archetype can express itself as judgment but also as old age, as tradition but also as oppression, as time but also as mortality, as depression but also as discipline, as gravity in the sense of heaviness and weight but also as gravity in the sense of seriousness and dignity. Thus Jung:

The ground principles, the *archai*, of the unconscious are indescribable because of their wealth of reference, although in themselves recognizable. The discriminating intellect naturally keeps on trying to establish their singleness of meaning and thus misses the essential point; for what we can above all establish as the one thing consistent with their nature is their manifold meaning, their almost limitless wealth of reference, which makes any unilateral formulation impossible.

This discussion is directly relevant to the outcome of our earlier consideration of free will and determinism in astrology. If I may summarize that thesis in a single statement: It seems to be specifically the multivalent potentiality that is intrinsic to the planetary archetypes-their dynamic indeterminacy-that opens up ontological space for the human being's full co-creative participation in the unfolding of individual life, history, and the cosmic process. It is just this combination of archetypal multivalence and an autonomous participatory self that engenders the possibility of a genuinely open universe. The resulting cosmological metastructure is still Pythagorean-Platonic in essential ways, but the relationship of the human self and the cosmic principles has undergone a metamorphosis that fully reflects and integrates the enormous modern and postmodern developments.

Our philosophical understanding of archetypes, our scientific understanding of the cosmos, and our psychological understanding of the self have all undergone a profound evolution in the course of history, and they have done so in complexly interconnected ways at each stage in this development. Our *experience* of all these has evolved, century by century, and thus our theories have as well.





## Brief Descriptions of the Simpler N-grams of the Family $N = P^2$

**Monogram:** this is the archetypal absolute unity. In Gurdjieff's cosmology, it represents His Endlessness (the point at the top of the circle) residing on the Sun Absolute (the whole circle). According to Gurdjieff, this state of affairs was 'threatened' by the progressive diminution of the Sun Absolute, forcing His Endlessness to fill the circle with an inner life.

**Tetragram:** this comes out as the traditional form of the quaternary. It represents the universe as an ordered process. The original monadic point at the top now plays the role of an ideal pattern or 'form'. Its complement, point 2, at the base of the circle represents the universe as it has been actualised, or 'created'. The two horizontal points, 1 and 3, are between the state of 'creator' and 'creation' and are shown in reciprocal interplay. This interplay is the harbinger of the full hexadic circulation we find in the enneagram. It is the bare form of what Gurdjieff called 'reciprocal maintenance'. The prime 'law' in the TetraGram is the 'law of two', which is the dividing of 'above' and 'below'. The secondary 'law' is the 'law of three'. This last law translates in the figure into an exchange between two points. This signifies the 'blending' of different states. Creation then appears as 'partition and blending'. The third factor of the law of three remains invisible. As Gurdjieff implied, we are 'third force blind' at the level of  $P = 2$ .

**Enneagram:** here we have the diagram that is most familiar. The law of three is shown fully. With  $Q = 7$ , we have linear and temporal process, as in the days of the week, which reflect the 'days' of creation. The central idea is that of the creation entering into further creation that modifies the starting point, or the 'creator'. The 'end' can be more than the 'beginning'. The reciprocity of the TetraGram develops into a full-blown circulation. This signifies the great universal process that Gurdjieff called 'trogoautoegocrat' or the way of eating and being eaten.

**16-gram:** in this more complex figure, we see the twelve-term system of the zodiac. In tradition, the four elements (as signified in the four terms linked in the primary 'law of four') map into the twelve houses. The realisation of further creation is emphasised by the appearance of two hexadic figures. The hexadic figure coming from below suggests a 'counter-creation'. This counter-creation is associated with individualised intelligence and learning and represented by the figure of Beelzebub himself: banished to the solar system, he is able to learn about the modification of the universal laws in practice as well as theory. The top-down hexadic figure then represents higher intelligence, which intelligence is limited to dealing with the general case and not specifics.

**25-gram:** this complex is based on the primary law of five. In Bennett's cosmology, the five represents the interweaving of the essence-classes and the way in which existence is spiritualised and essence realised. There are three hexadic figures, indicating a yet further capacity for intelligence. These may represent a further stage in our understanding of the three foods necessary for the maintenance of a cosmos. At this stage, every cosmos is a reality in itself and has equal value with any other.

**36-gram:** based on the law of six. The four-fold structure of the Tetragram appears at a greater depth with four hexadic cycles. We are into a super-ecology. We have the universe as capable of giving rise to alternative versions of itself.

**49-gram:** based on the law of seven. The emergent picture becomes ever more detailed and transformative. All that has come before now appears as an abstraction. Ideas of the beginning and end of the universe now seem to be too primitive. Ideas of a creator and a creation are too limiting. What emerges is now the source of what it emerged from.

**64-gram:** based on the law of eight, this may reflect the system of the I Ching. It is the Language of the present moment. It includes the Sufi octad as a symbol of the primary law. The six cycles of six represent all possible actions.

**HyperSystematics**

These speculations are tentative at best. They serve mainly to suggest that there are different orders of N-term systems. The progression in the value of a, the primary informing law: 1, 2, 3, etc. is reflected into a representational space defined by the secondary reflecting law Q (to use the terminology of Sigurd Anderson). In the traditional systematics of John Bennett, the representational space is by default taken to be of the same order as that of the primary informing law. This means that the basic systems are self-reflective and have to be looked at as operating on themselves.

A further point is this. The constituents of the informing law of three in the enneagram are taken to be of three kinds.

- 1. As points, in the sense of 'shock points' or 'portals', etc.
- 2. As lines, in the sense of the logos of 'commands'.
- 3. As octaves, in the sense of the three interweaving processes.

We might presume such complexity to apply to the other N-grams as well. If we consider just the third category, we have to accept that what we mean by a 'process' may have to be stretched in meaning. There are hints of this already in the enneagram. Though Gurdjieff uses the device of three interlocking octaves, in fact the enneagram only contains one complete octave and the others are truncated. The second 'octave' can be said to have six points (3, 4, 5, 7, 8, 9) and the third, four (6, 7, 8, 9). (If we treat the first as seven, then the second is five and the third, three.) The second 'octave' then maps into the inner lines and the third into the triangle. The enneagram then appears as a summation of itself, starting from three independent ingredients (circle, inner lines and triangle) and then integrating them in progressive order. The three 'octaves' are then three different things.

We might extend this thinking to other N-grams. In the tetragram, the informing law is 2. Are there, then, two 'processes'? In fact, we see this in the diagram of the tetragram as the vertical and horizontal forms. Reading the diagram in this way, we can think of a reciprocity between 'higher and lower' and another reciprocity between 'left and right'. The latter might be thought of along traditional lines as the interplay between 'male and female'. Another way is to think of Gurdjieff's repeated concept of 'world creation and world maintenance', the former represented in the vertical order and the latter in the horizontal one.

Let us now take into account the reflecting law of 3. We might, for the sake of argument, ascribe the six 'laws' of the triad in the following way:

Vertical:	Involution (top-down) Evolution (bottom-up) Order (their mutuality)	<i>Creation</i>
Horizontal:	Identity (left-right) Interaction (right-left) Freedom (their mutuality)	<i>Maintenance</i>

Of course, it might be counter-argued that this is to import foreign concepts on an ad hoc basis. We would have to say that each set of three triads ought to be considered as a whole and not distinguished.

Yet another way of considering a two-fold process is provided by John Bennett's scheme of Creation as 'partition and blending' (see chapter 33 in *The Dramatic Universe* Vol. III). Partition would relate to the vertical and blending to the horizontal.

We can see that, whatever the interpretation, we do not have processes as actions structured in time. In the case of the monagram, where we have only one informing element, the reflection is also into a one-space. We have already said that this is a picture of His Endlessness residing on the Sun Absolute.

In general, we would like to propose, the informing law is time-like and the reflecting law is space-like. In the 16-gram, where we have four informing elements, each of these should be taken as 'time-streams'. Charlotte Bach calls them 'ritual streams' and uses them extensively in his writings on the quaternary. The reflecting law is 13-fold which, strangely, approximates recent speculations about hyperspace.

What we suggest, therefore, is that the scheme of N-grams I first proposed in *The Intelligent Enneagram* and which has been further developed by Sigurd Anderson, represents another order of systematics. In doing this, it makes a bridge between the classical form of systematics and the more recent explorations of many-term systems (such as the 30-term system of 'team syntegrity' offered by Stafford Beer). The potential of N-grams resides in the fact that they offer a structural taxonomy for complex systems such that any insight from one such system can feed into and assist insight into other such systems. It is just this mutual informing that is of value in the whole conception of systematics. Systematics is not a theory of the world per se but of the ways in which we can think about the world (and alternative worlds!).

William Pensinger defines consciousness as arising from an operation of time on space. Taking this into account, we can conceive of an hypersystematics of consciousness. This is also to open a new chapter in the writing of the Dramatic Universe!

We propose that hypersystematics views number-systems in various band-widths.

1 - 12: the elementary systems

12 - 144: the N-grams with both informing (time-like) and reflecting (space-like) laws

144 - 1728: organic forms

1728 - 20736: genetic forms

and so on. Our purpose here is to emphasise John Bennett's primary contention that

**God is the infinite-term system**

#### **APPENDIX FOUR – Number/Letter Archetypes in Kabbalah**

These are the number archetypes corresponding to the first nine letters according to Carlo Soares (*Cipher of Genesis*, <http://duversity.org/suares/>). The equivalent systemic attributes (according to John Bennett) are given in bold italics and in many cases closely correspond with those of Soares and Kabbalah.

- 1 ALEPH As existence is a mystery so is the existence of life a mystery. ALEPH tells us no more. There is no more to tell.



***Universality***

- 2 BAYT There is no life apart from living things. The containers of life.



***Complementarity***

- 3 GHIMEL Everything changes. If there is ALEPH and HAYT together there must be some transformation of energy. Inside all living things something is going on. Foods are converted to the energies of life. Eating occurs, and being eaten. All living things show the function of nutrition.



***Dynamism***



- 4 DALLET This letter projects the concept of resistance to disruptive forces. In inorganic structures this is no more than the restoring forces which hold them together against disturbing forces from without. In atomic nuclei it is recognizably the role of the binding energy. In living organisms it projects itself as the characteristic function of response to stimuli. It is the archetypal principle of challenge and response discernible in the movements of rise and fall of individuals, societies and civilizations.



**Activity**

- 5 HAY Life is a projective archetype in its own right, not merely as such but in its completely generalized concept of participation in the universal drama as an intermediary. *All* life, throughout the universe, is engaged in a common task which *only* life can perform: the task of *transmitting impulses* which maintain the balance of a hazardous universal harmony. Life can both give and take, and because it is *sensitive* it can adjust to 'fit in' with environmental pressures and requirements which go beyond the needs of its own self-preservation or self-expression. In living things this is projected as the *ecological* function.



**Significance**

- 6 VAV This is the archetype of fertility or copulative impregnation. As in Latin: six means sex. (VAV is the grammatical copulative). Projected into living organisms it is the function of *reproduction*. It is the power of living recurrence, the ageless force of perpetuation connecting old and new, old and young.



**Coalescence**

- 7 ZAYN This is the archetypal structured movement towards the indeterminate potentialities opened up by VAV. In the living cell it is immediately recognisable as *motion*.



**Transformation**

- 8 HHAYT conveys the concept of a storehouse of potentialities able to be drawn upon when necessary, like a bank balance. A pool of unstructured energy of qualitative characteristics which may be used to give form to structures. The 'collective unconscious' of depth psychology and, in living things, the *gene-pool* of hereditary characteristics, are both projections of the archetypal concept symbolized by HHAYT.



**Completedness**

- 9 TAYT is exemplified by its projection, in living organisms, as the character of *the cell itself*. The function of the cell is essentially the female one of drawing upon the reservoir of unstructured characteristics symbolized by HHAYT and building them up into the necessary structures. The womb is the place of gestation, of bringing to birth. Nest-building aptly typifies TAYT.



**Harmonization**

## APPENDIX FIVE – Peirce’s Firstness, Secondness and Thirdness

"Careful analysis shows that to the three grades of valency of indecomposable concepts correspond three classes of characters or predicates. Firstly come "firstnesses," or positive internal characters of the subject in itself; secondly come "secondnesses," or brute actions of one subject or substance on another, regardless of law or of any third subject; thirdly comes "thirdnesses," or the mental or quasi-mental influence of one subject on another relatively to a third." ('Pragmatism', CP 5.469, 1907)

"... I was long ago (1867) led, after only three or four years' study, to throw all ideas into the three classes of Firstness, of Secondness, and of Thirdness. This sort of notion is as distasteful to me as to anybody; and for years, I endeavoured to pooh-pooh and refute it; but it long ago conquered me completely. Disagreeable as it is to attribute such meaning to numbers, and to a triad above all, it is as true as it is disagreeable. The ideas of Firstness, Secondness, and Thirdness are simple enough. Giving to being the broadest possible sense, to include ideas as well as things, and ideas that we fancy we have just as much as ideas we do have, I should define Firstness, Secondness, and Thirdness thus:

Firstness is the mode of being of that which is such as it is, positively and without reference to anything else.

Secondness is the mode of being of that which is such as it is, with respect to a second but regardless of any third.

Thirdness is the mode of being of that which is such as it is, in bringing a second and third into relation to each other." (A Letter to Lady Welby, CP 8.328, 1904)

<http://www.helsinki.fi/science/commens/terms/firstness.html>

## APPENDIX SIX – transcendental numbers

In mathematics, a transcendental number is any complex number that is not algebraic, that is, not the solution of a non-zero polynomial equation with integer (or, equivalently, rational) coefficients. The most prominent examples of transcendental numbers are  $\pi$  and  $e$ .

Transcendental numbers are never rational. However, not all irrational numbers are transcendental: the square root of 2 is irrational, but is a solution of the polynomial  $x^2 - 2 = 0$ .

The set of all transcendental numbers is uncountable. The proof is simple: Since the polynomials with integer coefficients are countable, and since each such polynomial has a finite number of zeroes, the set of algebraic numbers is countable. But Cantor's diagonal argument establishes that the reals (and therefore also the complex numbers) are uncountable; so the set of all transcendental numbers must also be uncountable. In a very real sense, then, there are many more transcendental numbers than algebraic ones. However, only a few classes of transcendental numbers are known and proving that a given number is transcendental can be extremely difficult.

### $\phi$ – 1.618 . . .

Phi (= 1.618033988749895... ), most often pronounced like "fly," is simply an irrational number like pi (= 3.14159265358979... ), but one with many unusual mathematical properties. Unlike pi, which is a transcendental number, phi is the solution to a quadratic equation.

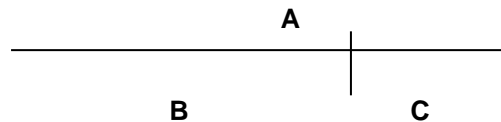
Phi is the basis for the Golden Section, Ratio or Mean

The ratio, or proportion, determined by Phi (1.618 ...) was known to the Greeks as the "dividing a line in the extreme and mean ratio" and to Renaissance artists as the "Divine Proportion" It is also called the Golden Section, Golden Ratio and the Golden Mean.

Phi, like Pi, is a ratio defined by a geometric construction

Just as pi  $\pi$  is the ratio of the circumference of a circle to its diameter, phi (  $\phi$  ) is simply the ratio of the line segments that result when a line is divided in one very special and unique way.

Divide a line so that:



the ratio of the length of the entire line (A) to the length of larger line segment (B)

is the same as the ratio of the length of the larger line segment (B) to the length of the smaller line segment (C).

This happens only at the point where:

A is 1.618 ... times B and B is 1.618 ... times C.

Alternatively, C is 0.618... of B and B is 0.618... of A.

Phi with an upper case "P" is 1.618 0339 887 ..., while phi with a lower case "p" is 0.6180339887, the reciprocal of Phi and also Phi minus 1.

What makes phi even more unusual is that it can be derived in many ways and shows up in relationships throughout the universe.

Phi can be derived through:

- A numerical series discovered by Leonardo Fibonacci
- Mathematics
- Geometry

Phi appears in:

- The proportions of the human body
- The proportions of many other animals
- Plants
- DNA
- The solar system
- Art and architecture
- Music
- Population growth
- The stock market
- The Bible and in theology

***e* – 2.718 . . .**

So much of our mathematical notation is due to Euler that it will come as no surprise to find that the notation *e* for this number is due to him. The claim which has sometimes been made,

however, that Euler used the letter  $e$  because it was the first letter of his name is ridiculous. It is probably not even the case that the  $e$  comes from "exponential", but it may have just be the next vowel after "a" and Euler was already using the notation "a" in his work. Whatever the reason, the notation  $e$  made its first appearance in a letter Euler wrote to Goldbach in 1731. He made various discoveries regarding  $e$  in the following years, but it was not until 1748 when Euler published *Introductio in Analysin infinitorum* that he gave a full treatment of the ideas surrounding  $e$ . He showed that

$$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \dots$$

and that  $e$  is the limit of  $(1 + \frac{1}{n})^n$  as  $n$  tends to infinity. Euler gave an approximation for  $e$  to 18 decimal places,

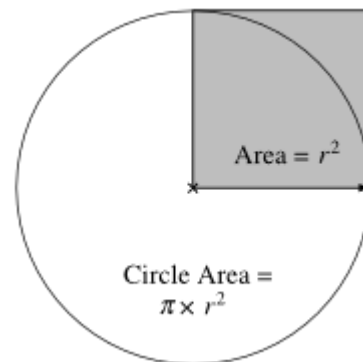
$$e = 2.718281828459045235$$

### $\pi - 3.1416$

Due to the transcendental nature of  $\pi$ , there are no closed form expressions for the number in terms of algebraic numbers and functions. Therefore numerical calculations must use approximations of  $\pi$ . For many purposes, 3.14 or  $\frac{22}{7}$  is close enough, although engineers often use 3.1416 (5 significant figures) or 3.14159 (6 significant figures) for more accuracy. The approximations  $\frac{22}{7}$  and  $\frac{355}{113}$ , with 3 and 7 significant figures respectively, are obtained from the simple continued fraction expansion of  $\pi$ . The approximation  $\frac{355}{113}$  (3.1415929...) is the best one that may be expressed with a three-digit numerator and denominator.

The earliest numerical approximation of  $\pi$  is almost certainly the value 3. In cases where little precision is required, it may be an acceptable substitute. That 3 is an underestimate follows from the fact that it is the ratio of the perimeter of an inscribed regular hexagon to the diameter of the circle.

All further improvements to the above mentioned "historical" approximations were done with the help of computers.



### $\delta - 4.669\dots$

What is Feigenbaum's number?

If I should answer in a short way, the answer would be simple: It is about 4.669211660910299067185320382047...

However, no one should be satisfied by that. In fact, this number is perhaps the most fantastic bit of this fractal. There are many many formulas that produce the same tree, but the number is always the same. It is said that Mitchell Feigenbaum called home to his mother when he discovered this universality and said this was going to make him famous.

The Feigenbaum constants are two mathematical constants named after the mathematician Mitchell Feigenbaum. Both express ratios in a bifurcation diagram.

$$\delta = 4.66920160910299067185320382\dots$$

is the limiting ratio between successive bifurcation intervals, or between the diameters of successive circles on the axis of the Mandelbrot set. Feigenbaum originally related this number to the period-doubling bifurcations in the logistic map, but also showed it to hold for all one-dimensional maps displaying a single hump. As a consequence of this generality, every chaotic system that corresponds to this description will bifurcate at the same rate. Feigenbaum's

constant can be used to predict when chaos will arise in such systems before it ever occurs. It was discovered in 1975.

The second Feigenbaum constant,

$$\alpha = 2.502907875095892822283902873218 \dots,$$

is the ratio between the width of a tine and the width of one of its two subtines (except the tine closest to the fold).

## APPENDIX SEVEN - vowels

Taken as a set, the vowels (in English) are a pentad and Joseph Rael relates them to the four directions and the centre:

- A (*aah*) Purification. Direction of the East: Mental body
- E (*eh*) Relationship. Direction of the West: Emotional body
- I (*eee*) Awareness. Direction of the West: Physical body
- O (*oh*) Innocence. Direction of the North: Spiritual body
- U (*uu*) Carrying. Center of the medicine wheel

## APPENDIX EIGHT – Language

*Beelzebub Tales to His Grandson* pp. 15-16, G. I. Gurdjieff

Man has in general two kinds of mentation: one kind, mentation by thought, in which words, always possessing a relative sense, are employed; and the other kind, which is proper to all animals as well as to man, which I would call "mentation by form." The second kind of mentation, that is, "mentation by form," by which, strictly speaking, the exact sense of all writing must be also perceived, and after conscious confrontation with material already possessed, be assimilated, is formed in people in dependence upon the conditions of geographical locality, climate, time, and, in general, upon the whole environment in which the arising of the given man has proceeded and in which his existence has flowed up to manhood.

*Creation is a Language*, from *VALIS*, Philip K. Dick

In Summary: thoughts of the brain are experienced by us as arrangements and rearrangements - change - in a physical universe; but in fact it is really information and information processing which we substantialize. We do not merely see its thoughts as objects: how they become linked to one another.

But we cannot read the patterns of arrangement; we cannot extract the information from it - i.e., it as information, which is what it is. The linking and relinking of objects by the Brain is actually a language, but not a language like ours (since it is addressing itself and not someone or something outside itself).

We should be able to hear this information, or rather narrative, as a neutral voice inside us. But something has gone wrong. All creation is a language and nothing but a language, which for some inexplicable reason we can't read outside and can't hear inside. So I say, we have become idiots. Something has happened to our intelligence. My reasoning is this: arrangements of parts of the Brain is a language. We are parts of the Brain; therefore we are language. Why, then do we not know this? We do not even know what we are, let alone what our outer reality is of which we are parts. The origin of the word "idiot" is the word "private." Each of us has

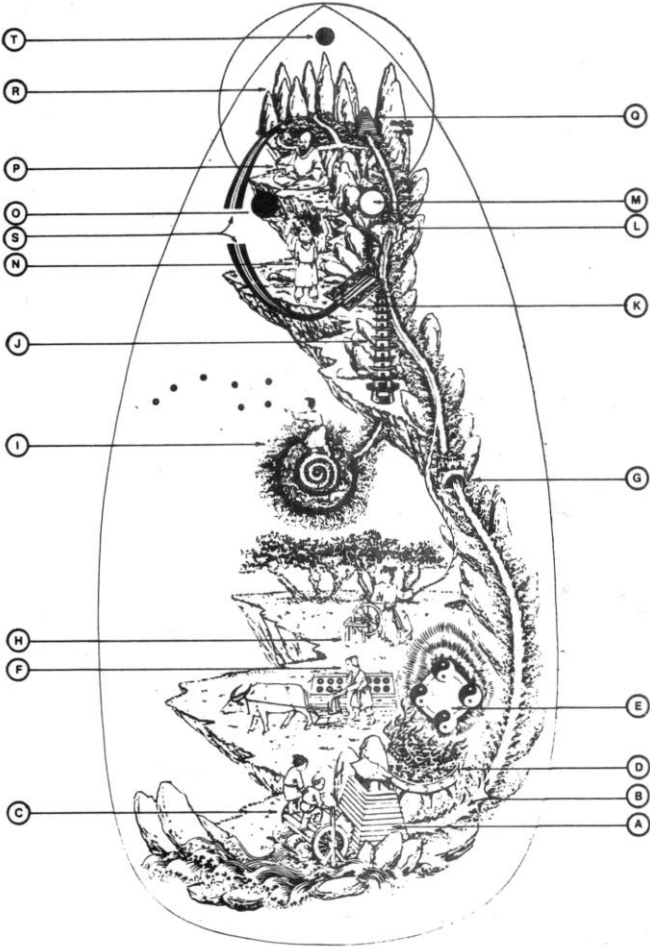
become private, and no longer shares the common thought of the Brain, except at a subliminal level. Thus our real life and purpose are conducted below our threshold of consciousness.

From loss and grief the Mind has become deranged. Therefore we, as parts of the universe, the Brain, are partly deranged.

Out of itself the Brain has constructed a physician to heal it. The subform of the Macro-Brain is not deranged; it moves through the Brain, as a phagocyte moves through the cardiovascular system of an animal, healing the derangement of the Brain in section after section. We know of its arrival here; we know it as Asklepios for the Greeks and as the Essenes for the Jews; as the Therapeutae for the Egyptians; as Jesus for the Christians.

**APPENDIX NINE – Structural Images**

**The Doctrine of the Golden Mercuric Sulphur - The Fire of the Unitive Path**



*The Painting based on the stone tablet in the Monastery of the White Clouds near Peking.*

# PART TWO - RELEVANCE AND MUTUAL RELEVANCES OF SYSTEMATICS

## CONVERSATION

The Gathering began with an open-ended conversation on the practice and future of systematics. The group included the following professions: Safety manager and now consultant (using the Process Enneagram), Systems Designer, Construction Manager, Artist, Jewellery Maker, Business Manager, Psychotherapist, Inventory Checking and Philosopher. What follows is an edited version of what emerged during the conversation and shows links to MMs which were then produced to summarise key points (more were added later).

The starting issue was the question of making systematics more accessible to a wider range of people. This has implications for the problem of educating others to continue the work when the present practitioners have gone.

### In the awareness of the facilitator

In its practical application, systematics involves people in conversations to explore issues. *They* do not have to think about the systems but the *facilitator* can be greatly helped by these ideas in conducting group conversations. He is more able to manage them. His awareness is able to *contain* the thinking of the group and enhance the coherence of its conversations.

### In crisis structure emerges spontaneously

People in such groups can use already worked out versions of systems but they are not likely to be able to develop them for themselves. However, they already have unconscious powers at the archetypal level. In a *crisis*, people really pay attention. People change instantaneously in the way they work. They focus on the problem and stop playing games (see Appendix 1). Once the crisis is over, they revert to 'being jerks' and seem to forget what really happened. They do not step back and ask, 'How were we able to work so effectively?' Patterns seem to come into operation in front of need. There is no learning in the ordinary sense or any kind of process of preparation. Models about learning are mostly illusory. Plato argues that learning is more like memory, of bringing to consciousness what has been forgotten.

### It is archetypal and compelling

In ordinary working life, people believe that things happening because of 'the man', the leader who gets things done; but in crisis situations, leadership pops up everywhere. In conducting groups, a critical thing is put the group in front of a 'compelling question' that they can recognise and feel that is matters to them.

### Participatory visualisation

There was a case of someone bringing systematics into a small group that was observed by a larger one. This did not work. Everyone needs to *participate*. The work is slow and cycles back on itself and there do not appear to be any short cuts. People tell stories – they do not vote! Only then can change be fast. The process needs to be transparent and not manipulative. It is hard to learn how to 'lead' a group in the right way.

In a company in which systematics was introduced the management split into insiders and outsiders and this was destructive. A small group then self-organised to continue the substance of the work, called the 'no name network'.

### Does systematics need another

One of its members went on to assimilate the new ideas of chaos theory and self-organisation and extended these ideas from physical systems to social ones. He found that the coming together of systematics with these new ideas was intensely

creative. Maybe the collision of two different bodies of information is essential. In order to further systematics, it may have to be combined with something that has arisen independently.

**People cannot be told**

A great untapped resource is people. Ordinarily, they put 10% into their work. There is a problem that we do not see what can be in front of us. We only see what we believe or expect. What we do not see we cannot be told. We can look at someone and not understand why they do not see what we see. But when there is a working group - in open conversation, guided by someone who is awake to patterns – it can make a ‘collage’ of all the different pieces held by different people. Organisations have 90% of the information they need, but they do little talking and sharing.

An example was given from the work of Bert Hellinger (see [http://www.hellinger.com/international/english/hellinger\\_lectures\\_articles/2001\\_taipei\\_family\\_constellations.shtml](http://www.hellinger.com/international/english/hellinger_lectures_articles/2001_taipei_family_constellations.shtml)) on ‘natural systems’. An issue is raised by someone and from the conversation he or she picks people to play the various roles involved. The players can then be questioned to reveal further information. They do not need to ‘know’ about it in the ordinary sense and most people find that they can respond ‘as if they knew’. Anne Schutzenberger (see *The Ancestor Syndrome*) in dealing with transgenerational issues asks questions and often says that *someone* in the room will know the answer. This shows that there is a kind of knowledge that people have that they do not know they have until it is brought out.

Different people have different centres of gravity and their energies are channelled into different regions of experience and action.

**Can elaborate fixed ideas**

Systematics can be used to validate a person’s belief system rather than to transcend it. It can also play a role in creating something new that challenges past beliefs. Between these two, it can help to *organise* our thinking.

**Only connect**

Can there be an educational process by which people can be produced capable of creative systematics? Someone remarked that in Japan one can gain a certificate of enlightenment! Is this entirely stupid? Can there be an effective way of at least preparing for systematics? Different people start from different bases and there can be a variety of ways in which they tap into systematics. An example was given from Chinese culture. Through Buddhism, a cosmology was evolved that became ever more complex. But there was also a move towards simplicity and direct experience as in Ch’an and Taoism. Someone can feel just *one* archetype but this implicitly draws on all of them.

The Process Enneagram may be an example for us. This contains the systems 1 to 9. But if someone worked with just the triad or tetrad they can get a feeling of the whole, just any one of the jewels in Indra’s Net (see Appendix 2) reflects the whole.

**The Zen of systematics**

There may be very simple ideas people can respond to. Could there be something like the famous ‘wax-on, wax-off’ training of the young American by a master in the movie *The Karate Kid*? Children can respond to systematic ideas and an example was given of a discussion with two children aged nine around the dyad according to Gurdjieff’s formulation ‘every stick has two ends’. Can there be a Zen systematics that brings it all down to one moment?

**Multi-dimensional synaesthesia**

Systematics offers a prospect of a *universal language* that encompasses pictures, music, management, crafts and so on. It does not matter what the content is. For many people, however, a difference of medium or content presents an impossible challenge. There are those who just cannot deal with pictures *as pictures* but have to translate them into *concepts*. Asked to associate from an image into images, they are incapacitated. Though a picture can evoke a way of seeing the world as an archetypal situation exemplified in countless



ways common to all people it is sometimes quite foreign to some people who study systematics. (This relates to William Pensinger's concept of MUSCULPT, see Appendix 3)

**People do not see**

People are switched on only in certain parts of their brain/mind. Only so much energy is available and most of it goes through only certain parts.

There is nobody to see this in action, and nobody who can just change things and make the energy flow in different regions. Relevant information (from the standpoint of the total view) never lights up because it does not have any 'fuel'. That is why most activity including thinking is just repetition. If divine beings came down and uttered ultimate truths we would not be able to hear them.

Systematics could enable us to go from one language to another, one way of experience to another, one form of expression to another. But it cannot do this without energy. This may relate to previous remarks about the remarkable effect of crises.

There is nothing better than conversation between different kinds of people. But language itself can be seen as a 'parasite' or 'disease' (as William Burroughs suggested) that creates blindness. Having to talk together involves something radical about our relation to words. For instance, every word we utter carries with it the inevitable sense that it *refers to something*. We should be careful in talking about 'systems' and not fall into the trap of believing that they exist. Try the experiment of inventing a word – 'muring' for example – that did not exist before and use it a few times and we will find that we starting to imagine that there is such a 'thing'.

Gurdjieff distinguished between *mentation by word* and *mentation by form*. He called the former 'subjective' because different people will use the same word in different ways and even the same person can use n different ways at different times. The latter form of mentation arises from the landscape in which we spend our formative years (and relates very much to the work of Joseph Rael) which gives rise to the form of mind we have. It corresponds to a more objective language.

**Form thinking**

An example was given of working with a small group of students studying science. At the time of this work, some educationalists were concerned with the fact that students were learning the words of their subjects but not

understanding the way of thinking of science. The discipline brought to the group was to demand that every time any technical word was used – such as 'atom' – the students had to articulate the corresponding mental image they had of its meaning. By articulating mental images, they were able to reflect on and transform how they were using words. The articulation of images was a mode of mentation by form.

A word by itself is meaningless, in that it has no isolated usage. It will mean different things to different people. But, for the most part, this is not consciously appreciated, which leads to much confusion. The use of words is shaped by form. There is an instinctive, inherent, instantaneous application of the word, which acts before our consciousness comes into play. The domain of mentation by word is slow and never catches up with what has made it happen.

**Create new images**

The use of images as a way of accessing form is problematic. People have images and work from images all the time, but they are not aware of them as *images*. Having thoughts as verbal concepts is

relatively rare. Both words and images can be degenerate forms of apprehension. Both require us to become more conscious of them 'as they are', so that we will not be their slaves.

**Shift out from locked room**

To produce change, we need to unravel the fixity of images. This amounts to a huge shift in thinking. When we break the moulds, we need to be careful and this is where systematics

can help because it can be used to make the breakage constructive. People have information that can help them change, but they need an *invitation* and a willingness to be *heard*. And they need to appreciate that just because they cannot think of an answer this does not mean that

other people do not have it. It is often the case that high-level technical investigations are made that prove fruitless while the man on the job can provide the answer if only *he is asked*.

We cannot think of systematics in isolation. It only appears so on paper.

There is a conundrum: we want to be creative but creativity is *beyond consciousness*. There are Sufi stories about pupils being set complex and exhausting exercises and tasks to *distract* them, because otherwise their conscious minds would interfere with a more inward action. What is truly creative is what one does not know. One has to trust.

There is always a *complementarity*. If there is something we know, there will be something we do not know. Stacey has spoken about this in terms of the *shadow* side of organisations.

#### Perceptual insight

Systematics can be dealt with on the lines of an organisation chart – ‘doing it by the numbers’. In another approach, it is like a *gymnastics* to keep the ‘muscles of the mind’ in trim. Then, it is not to solve problems or do anything. It is only concerned with seeing. It develops ‘organs of perception’. Colleges do not develop perceptions but enable people to use handbooks!

In our existence, structures, forms, etc. play a role in the formation of our minds. These are the homes, jobs, political parties, beliefs and so on that can be seen as mechanisms that are remnants of past insights. We can be said to be ‘asleep’ when it is these various mechanisms that shape mind. Systematics starts when that stops.

Maybe there are little sparks of free energy, fragments of divinity and life, from which creative systematics begins. Systematics provides a matrix or ‘womb’ in which new forms can be realised.

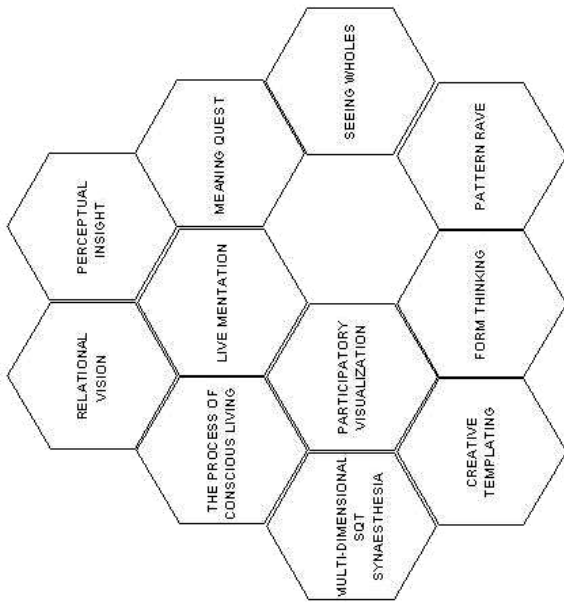
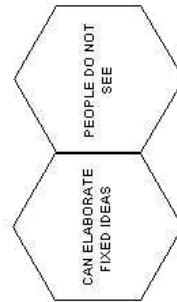
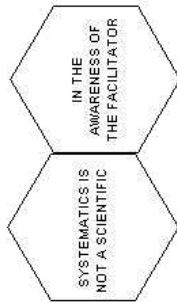
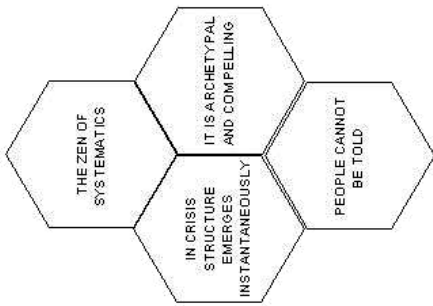
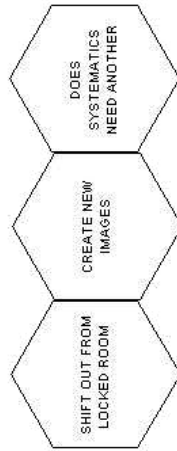
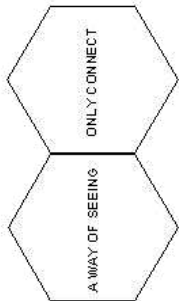
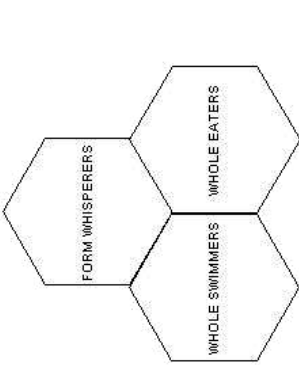
#### A way of seeing

When things are confusing one can *wait* for a form to emerge. Systematics is based on a willingness to see what forms emerge. As they do so, it makes us happy. We need to be careful not to interfere. This condition of waiting in seeing is not passive but it has to be called a *receptive* mode of work (which reminds us of Bennett’s receptive lines of work as described in *The Sevenfold Work*, see Appendix 4)

A metaphor is that of an eel-basket which is set in the current. It just ‘sits there’ but when eels swim into it, they cannot escape.

Finally, we can be sure *that* the insight comes but not *how* it came.

*The MMs were grouped in the following manner.*



## **APPENDIX ONE - Spontaneous organisation**

John Bennett, *Hazard*, p. 65

Let me take an example of how one can see an association forming that has all the qualities of a real association and relationship. We saw this very much in London during World War II, when there was the blitz. A house would be bombed and it would be in flames, people would be coming out, and there would be many things to be done. It was one of the most astonishing and, I think, wonderful experiences of those who went through it to see how quite spontaneously, without anyone taking the lead or giving any orders and so on, people formed an association to deal with this immediate situation.

It need hardly be said that this was a situation of hazard. The extraordinary thing about this is that an association was formed in front of a need and lasted as long as the need was there; then it dissolved and everyone went their own way. Nobody thought of saying, "Here we have been through all this together, let's meet again tomorrow and do it again." The kind of association that arises from meeting hazard is like making a move in a game and once that move is made, it is made, and a new situation arises. You do not think you would somehow improve the game by playing the same move over and over, yet people often think that somehow a society would be improved if it could be perpetuated or a relationship would somehow become more merely by its continuing. So long as the situation that makes the relationship right exists, it can be right; when it does not exist, it cannot be right.

## **APPENDIX TWO – Indra's Net**

from *fusion anomaly – Indra's Net* (<http://fusionanomaly.net/indrasnet.html>)

The Rig-Veda has about 250 hymns to Indra. Indra's Net is a net with a jewel at each intersection, each jewel reflecting all the other jewels of the net. Indra's Net is a symbol of the internet, and can symbolize other interconnected systems, even Many-Worlds of lattice spacetime.

In the Heaven of Indra, there is said to be a network of pearls, so arranged that if you look at one you see all the others reflected in it. In the same way each object in the world is not merely itself but involves every other object and in fact IS everything else. "In every particle of dust, there are present Buddhas without number." The similarity of this image with the hadron bootstrap is indeed striking. The metaphor of Indra's net may justly be called the first bootstrap model, created by the Eastern sages some 2,500 years before the beginning of particle physics."

Following the anatman doctrines of Buddhism, the Virtuals insist that any fixed notion of self, even the Universal Self, is an illusion. At the same time, the ngHolos emphasize that the self and the world are constantly produced, that the cosmos is both network and void. The allusion here to the Hindu myth of Indra's web, which the ngHolo's fused with the image of the universe as pictured in the Avatamsaka Sutra: an infinitely nested and interrelated monadology in which each singularity reflects and embodies a boundless totality.

## APPENDIX THREE - MUSCULPT

William Pensinger

The unique relationship between a given spatial topology and its acoustic wave signature, exhibited in severe storm genesis, is not a matter of *defining* a relationship between sound, color (frequency), and form, as has been done on several occasions in attempts to unify the plastic arts with art music -- such as those made by Scriabin, Kandinsky, Klee, Yannis Xenakis (*Formalized Music*) -- but is a relationship empirically discovered in Nature, a relationship we have called Musculpt (music-sculpture).

Justifications for Musculpt becoming a notational system for mathematics: If we start using multivalued logics, it then becomes possible for an element to be both itself and some other element simultaneously. The property of being itself-not-itself is a necessary prerequisite for the fully integrated functioning of a hierarchically ordered process. This is the case in the study of the physics of collective, cooperative, and critical phenomena, for instance. Now, in order to symbolize an element that is simultaneously itself and other elements, a multidimensional symbol is required. (And we must never forget that the "itself" of a multivalued element is relative to the position of the observer in the hierarchy, or, equivalently, relative to the observer's partitioning of the hierarchy.) Say  $x$  is the root symbol for the element in question. In order for  $x$  to capture the multiformity of the element, other qualities must be attached to  $x$ . A written notational system can attach exponents or subscripts or, in complex cases, can expand discursively across the page -- which mathematicians do not read lineally, but rather "register the form of". But the mathematician, in this case, is working against the notation. In Musculpt as mathematical notation, this does not occur; the mathematician works with the notation. Musculpt is a nonlinear language because meaning in symbol, being stacked synaesthetically, is not length-limited by constraints of visual scanning gestalts. Color and sound can be *superposed* qualities of  $x$ . A green  $x$  that always appears with the sound of a certain pitch is the root symbol  $x$  with two superposed values. In Musculpt, the  $x$  would become a simple form with associated sounds and colors, thus allowing a maximum amount of information to be attached to a simple symbol. This is not a puerile attempt to go back to visualization when higher mathematics has long since left realms of consideration that are visualizable. It is an attempt to evolve a *notational system* more appropriate to higher mathematics. Written symbols are static; contemporary mathematics needs dynamic and transformable symbols. When multivalued elements are being dealt with, the need is to have one symbol with many facets -- each facet being individually alterable.

## APPENDIX FOUR - receptive work

Bennett, *The Sevenfold Work*, p. 25

The Work does not concern only actions which come from ourselves. We are not alone in the Work: there are other people, there is a hidden part of ourselves 'within' and there are higher powers, without which we should be entirely helpless. It is a very great thing to realise that we have to learn how to permit superior forces to enter us: they cannot come into us unless we allow them. To allow them to come in we have to be *receptive*.

It is a difficult thing at first to come to, but we must understand the difference between passivity and receptivity. When we are passive, we are under the sway of lower forces; but when we are receptive we are open to what is higher. In this is the key to a great many practical problems of the Work.

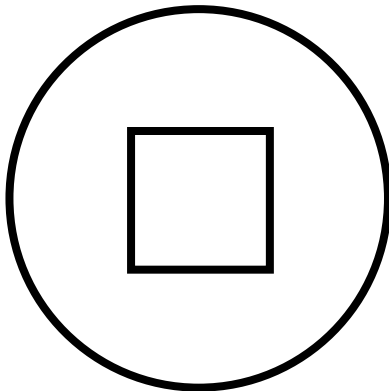


## PART THREE - MAKING SYSTEMATICS A GAME

*I learn through struggling with material I can't understand, pouring over it, going back to it, imagining ways I might be able to understand it, cursing it, creating inner Musculpt models of the relations between the unknowns I can't understand, walking away from it, finding it follows me wherever I might try to hide.*  
William Pensinger

### THE CONTINUOUS WHOLE AND THE DISCRETE PARTS

The complementarity of wave and particle has become a standard metaphor used by many people to understand many things. The wave aspect emphasises continuity and wholeness while the particle aspect emphasises discreteness and partness. These two aspects have been contemplated through the ages. It is symbolised, for example, in Chinese coins that have the shape as shown here.



The circle represents the heavens and the square the earth. The heavens correspond to the continuous whole and the earth to the discrete set of parts. Both are real and the one cannot be reduced to the other. Both are necessary, though some deny this.

Ralph Stacey denies the reality of organizations as 'systems' made up of parts. Instead, he insists that the only reality is that of relationships as in conversations. The organization is what emerges out of conversations (just as Freeman Dyson said that culture consists of conversations). Bohm was captivated by the idea of 'holomovement' and the unbroken wholeness spoken of by Krishnamurti. He rejected the 'systems' approach of

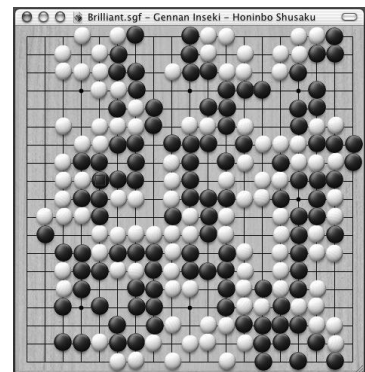
Gurdjieff and Bennett.

We want to have both sides of the coin, but each has to be given its own kind of meaning. For example, it is counterproductive to model a system as a set of terms between which we draw connecting lines. Why? Because this is to turn the field of *mutual relevance* into yet another set of parts. It is far better to attend to the set of elements with something like a 'feeling' for the meaning of the gaps between them. The word 'field' invokes another metaphor, that Bohm himself used in his idea of a field of *active information* that 'informed' discrete reality, e.g. in the guise of the movement of particles or operations of brains.

The image of the Chinese coin associates with the ancient enigma of 'squaring the circle'. This was not just a geometrical problem (how to draw a square with the same area as a given circle) but also a metaphysical one to do with how the spirit could coincide with a body (making our reality). Bennett spoke about this in *Way to be Free*.

The square also reminds us of a *game board* (such as in chess and Go) and so we are led to consider how playing a game with discrete pieces can enable us to square the circle, or realize the wholeness in a tangible form. In playing such a game we will not know what the wholeness is – as if we could look at the wholeness and translate it into pieces and moves – but we can know how to play and thereby allow the wholeness to emerge.

In yet another analogy, the square represents the conscious and the circle the unconscious and it is striking that Jung paid so much attention to *mandalas* as imaginative forms in which archetypes could be reflected. A game is even more interesting because it has a life while it is being played – in movement. It also can help us realise that no





game is possible *without gaps*. When there are no gaps nothing further can be done and the game dies. Bennett drew attention to the significance of gaps in his series of talks on *Hazard*, the word deriving from the Arabic word for dice, which introduces another important element of uncertainty (there was an American cult novel called *The Dice Man* by Luke Reinhardt in which the hero runs his life through throwing a dice with six choices).

We want to consider playing a *game of meaning*. In such a game, the object is to bring wholeness into manifestation, or to marry the continuous with the discrete. For the game to be played, there must be both gaps and uncertainty. In our game, gaps are provided first of all by empty spaces and uncertainty by

the fact that different people will do different things that will not necessarily correspond to what is 'rational' in others' eyes and which will also give unexpected results. The game is alive as it is being played. In this it echoes our idea of the Tao, for which the main symbol is water.

We will argue that a classical system of systematics will be like a snapshot of a part of the game. A meaning game is systematics at another level. A game also has several players and not just one person 'doing the thinking'. Hence, it is embedded in dialogue. Classical systematics is somewhat authoritarian. It has the aura of saying that God has revealed the systems as truths. It is, as religion is, obsessed with oneness. In contrast, a meaning game invites us to co-create our reality. We have to agree about what is going on amongst ourselves, because there is no authority we can turn to (otherwise we stop playing). This corresponds to many insights developed in the realm of Group Analysis, for example, Patrick de Mare's contention that 'mind is between brains not in brains' and Gordon Lawrence's distinction between the politics of salvation (looking for authority) and the politics of revelation (allowing what we can see to emerge from us).

There is also a wealth of precedents, some of them contrary to our usual assumptions about games. For example, in the Mayan ball game the captain of the *winning* team is beheaded! Plato of course, equated philosophy with dialogue and in our own time, Timothy Leary called philosophy a 'team sport'. In our political systems, we *vote for a player* rather than just for a representative.

### THREE CLASSES OF GAME

For convenience, we distinguish three classes or phases of a meaning game.

1. Game of Generation. This is how we produce molecules of meaning (MMs) that can be used as 'pieces' in the subsequent game. It can be something in its own right, but is usually preparatory.
2. Game of Placement. This is playing the game per se, as we place (or move) pieces in a space that gives significance to where the MMs are placed.
3. Game of Interpretation. This is peculiar to a game of meaning, in that how we understand the placements is an integral aspect of it. It can be taken as ensuing throughout the whole game or as concentrated in its last phase.

The three games merge into each other but usually concentrate into three phases (for this reason, they can be modelled onto an *enneagram*, see Appendix 1). An example of a simple 'abstract' meaning game is the *Stone Game* devised by Leslie Schwing and Janet Young (see Appendix 2). In the Generation game, the players go out and gather suitable stones with which they will play. In the Placement Game, they put stones one by one onto a black surface, guided



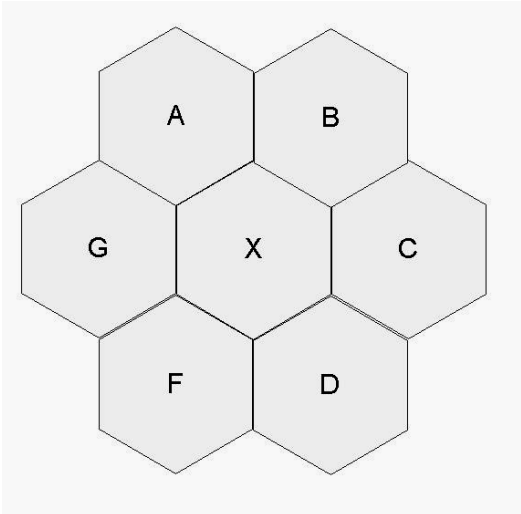
by their feelings of meaningful togetherness. They can also draw in marks between and around the stones. When Placement stops, the stones are removed one by one to reveal only the marks and the Game of Interpretation can take place.

A major exemplification of the meaning game is LVT (logovisual thinking).

1. Gather (game of Generation). MMs are produced by participants in response to a theme or question. They take the form of statements written onto the surface of magnetic hexagons. And they can derive from memory, imagination, written texts, conversation, observation, etc.
2. Organise (game of Placement). The MMs are grouped together into subsets or otherwise arranged in relation to each other, each such arrangement signifying a new order of meaning (often then translated into a new set of written statements as a new class of MM).
3. Integrate (game of Interpretation). The various new MMs are considered together for their mutual relevance. This develops a new arrangement of symbolic and theoretical potential.

In Generation, elements are considered separately. In Placement, they are seen in their mutual relevance. In Interpretation, they are absorbed into a creative structure of meaning. The aspect of mutual relevance is of foremost importance. Here we must remark on the tendency in using words to split things apart (of the nature of words) so that many people look for definitions and whether this word means 'the same' as that word – both of which tend to take words as separate 'things'. In the game of meaning (particularly in Placement), no word is taken in isolation. This approach was the basis of Bennett's *structural communication*. He started from the view that no word (or statement) can be understood without seeing it in its relations with other words (or statements). In fact, we acquire our sense of what words mean just by this means.

The simplest approach we can take is to consider one MM as surrounded by a set of other MMs, each of which informs us of its meaning by their mutual relevance with it. If we were using magnetic hexagons, the primitive case would look as below.



Each of the ancillary MMs could have its own penumbra of mutually meaningful MMs. We should remember that the reality is like a *nexus* and we can only represent a portion of it at a time and in just two-dimensional space. An alternative form is that of a grid, and it is important to realise that such grids have a long history in the form of *magic squares* (see Appendix 3).

The most well known is the 3 x 3 square in which the nine digits can be placed to add up to 15 in every one of the eight lines of three.

8	1	6
3	5	7
4	9	2

Magic squares can be dismissed as mere mathematical recreations, but not only can we argue a positive role for play but also suggest there is some useful principle in adding up to the same number in all directions. One possible correspondence between systematics and solving magical squares is as follows. Take the 'sum' of the terms along the various directions as signifying a *triadic system*; then we can consider the eight sets of three as equally well exemplifying this system, even though the *terms* they contain differ. Here we simply assume that the numbers 1 to 9 refer to members of a set with distinctive properties. The set might be a list of ingredients and the various triplets then acceptable combinations to make a type of meal. Reverting to the abstract numbers, item 4 can belong to three versions of the triad: 4-3-8, 4-5-6, and 4-9-2.

Once we realise that the numbers used in magic squares can signify the content of any kind of set in which its members can be listed in a sequence, then we can utilise such squares for organising meanings, or MMs in our nomenclature. The principle developed here is that of *coherence* between all aspects of the arrangement. There is a triadic coherence or agreement between the eight triplets: not only are all the terms conformable to a total set, but the members of this set can be combined in eight mutually consistent ways to give eight forms of essentially 'the same' triad.

The square form of game board gives us the series 1, 4, 9, 16 and so on which are the number of points of a significant class of N-grams that includes the enneagram (see previous Appendix 2, p.33). If we make a (non-magic) square as here with numbers in simple sequence, then the three vertical threes define three different aspects of the fundamental triad. In Richard Knowles' application of the enneagram, these are three different kinds of leadership: 1-4-7 strategic, 2-5-8 command and control, and 3-6-9 leadership in self-organisation (see *The Leadership Dance*).

7	8	9
4	5	6
1	2	3

**CONFLICT AND CO-OPERATION**

The game space can be regarded as a territory and the players as seeking to occupy it as much as they can. Once the game has developed, any unsanctioned move by a player can be felt as an act of aggression. Such a moment occurred in the playing of our game, when one person altered the display while others were elsewhere.

The playing of games has always been associated with symbolisation of conflict and the games of chess and Go, for example, have often been conducted as if they were combat. This is largely because they are predicated on having a winner and loser and the winner acquires kudos or money. But it is also because players *invest themselves* into the pieces and their moves. At first it may seem strange that we do this. After all, the pieces in play are mere abstract tokens, which is highlighted in the case of the Stone Game, where they are reduced to extremely simple and seemingly neutral form. However, such innocuous elements have the capacity to attract into themselves our passions and self-identity. This was discussed by the Comix artist Scott McCloud in his comic book *Understanding Comix* when he pointed out that the simpler the drawing of a character, the more we were likely to identify with it and fill it with our own self-sense; in contrast with more realistic drawings that we will tend to see as Other.

Our pieces are MMs and because they involve written words are conceptual in nature. They stand between abstract simplicity and realistic portrayal. Nevertheless, they can go through a development for us as we invest them with substance from our own sense of meaning of ourselves. The metaphor we use for this is that they become *charged* with meaning. Initially, a written statement (or just name) of an MM is something 'at a distance' from us: we only have some vague sense of it and it can be treated as just an item we know about but has, as yet, little 'weight' for us. As the game proceeds, the MMs become charged up and their selection and placement is felt ever more strongly.

The game of Generation starts with the different players contributing their MMs. In our case, this was in response to the aim of identifying *MMs that were significant for our understanding of the kind of thing systematics is*. At the start, the players only have some sketchy ideas about this, so their MMs are provisional in character. Nevertheless, they reflect the individual knowledge, experiences and beliefs of the players; so there are contrasts between the MMs generated by different people. The MMs generated by other players stimulate each player to associate to new contributions. We call this game in its own right because there is already a considerable interplay between the players. An MM put up by one player may challenge the points of view of the others. It may refer to something they do not know very much about, or even not at all. It may seem to be off the point and of no relevance. In this game, all contributions are allowed, so a typical response of other players is to 'compensate' for or offset for an MM they find problematic by generating other MMs of a different character. As we shall see when we come to a summary of how the game of meaning ensued, this meant that the players were driven to explore a complex meaning space far beyond what any one player would have generated by themselves. The MMs that appeared ranged over the mystical, artistic, technical, representational, and so on.

Initially, players identify with the MMs they have contributed themselves. But a dialogue is in process that leads beyond this to players embracing contributions by others as well. In a rough way, we can say that each player comes to *feel* a subset of the total set of MMs that contains more than their own but is less than the totality of them. Dialogue allows players to question and explain MMs, so that eventually there is an enlargement of perspective on the part of each player. His or her subsets are charged with meaning.

The game has already engaged in conflict and cooperation. Players have different views but they are prepared to allow some MMs outside of their preferences. An important rule is that – at least initially – *all* contributions are accepted; but we must remember that they are simply stored in a reservoir as it were, in a neutral space, and do not at this stage appear on the game board per se. At the end of the game of Generation, each player will have implicitly structured the total set of MMs into subsets relative to themselves. We say 'implicitly' because it is not explicitly articulated. It is artificial but maybe useful to consider that each player will have partitioned the total set into four categories (used in structural communication):

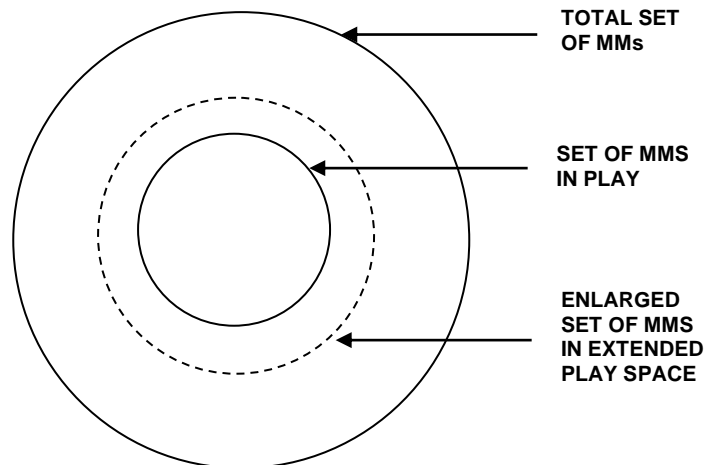
1. Those that are regarded as essential

2. Those that are accepted as relevant
3. Those that are considered as irrelevant
4. Those that are rejected as misleading

It is in the game of Placement that conflict is more energised. There is a restricted space and not all the MMs can be accommodated. In the early phases of this game, however, there are still some places open so that new placements can be made to adjust to and 'correct' for earlier placements. We can see that the implicit conflicts of the previous game are now being made more explicit. When the game space is fully occupied, the only moves open are (a) replacements, and (b) going outside the game space (thereby in some sense changing the structure of the game).

We can see this game as a fight over territory. Each player wants to bring what they see as the essential MMs into play and exclude those they regard as misleading. We can be reminded of the terrible things that ensue in the real world over territorial conflict, which involves a struggle over occupation by different groups (counted as number of bodies) but also a struggle over occupation by different beliefs or meanings. It is also reminiscent of family feuds, which can include struggle for control of resources but is essentially a struggle of *power*.

A meaning game allows us to move in a symbolic space to seek resolution and co-operation. In the diagram here, we show three sets, including the intermediary one in which we play outside the initial framework.



The set of games – Generation, Placement and Interpretation – have their different centres of gravity even though they share to some degree in them all. That of Generation is more neutral or 'monadic' than the others because we have the principle of accepting all contributions into the collective space (the 'reservoir'). That of Placement is more conflictual or 'dyadic' because it is territorial. That of Interpretation is more co-operative because we seek to integrate the emergent perspectives into a meaningful structure that can accommodate them without loss of their individuality.

A meaning game is situated in the middle region of the spectrum defined by *paidia* and *ludus*. *Paidia* is spontaneous play for the sake of itself while *ludus* is more formal and involves winning and losing (see Appendix 4).

Another important feature of a meaning game is that it is to some degree always a *nomie* game; it has rules that enable the rules to be changed. A game begins with a set of fixed and simple rules but, as it develops, these are modified. One obvious example of this we will discuss in the

next section is coming to agree to work outside the initial game grid. In a strict nomic game, the changes of rule are the main focus and explicitly discussed. In a meaning game, they are emergent and it is then up to the players to acknowledge and clarify them.



**Ancient Game Board carved in rock at Petra**

## **THE MEANING GAME**

The game began with a basic 3 x 3 grid. This was only the initial framework and gave way to a more complex and 'organic' form as the game progressed.

The theme of the game was the mutual relevance of systematics to other methods of making meaning (MMMs!). To this end, a set of MMs representing such MMMs was gathered as an initial step. There had already been discussions on the nature of systematics as a cultural element and in various perspectives, as was described in the previous section. The set of MMs was not closed but added to as the game progressed and participants wanted to bring in new insights. Relatively little time was spent on expositions and explanations of the MMs and participants had to rely more on feeling than on any detail.

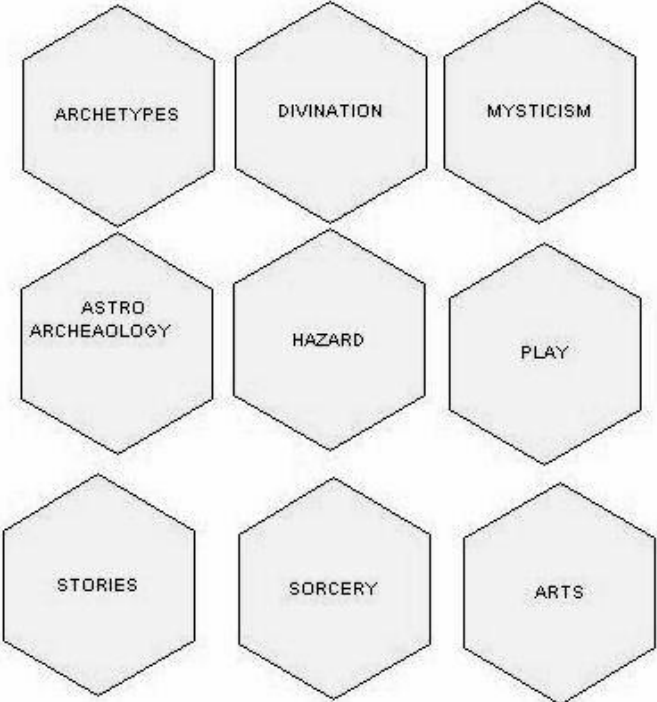
Hundreds of *moves* were made and what is shown in the following summary represents only a fraction of them. The moves were of the following kinds:

1. **Place** an MM at a location of the grid (taking it from the available set)
2. **Move** an MM to another position
3. **Remove** an MM (back into the unselected set)
4. **Make** a new MM (and Place)
5. **Change** the format of allowable positions (de-restrict the grid)
6. **Develop** 'local' realms of meaning
7. **Integrate** local realms into a global pattern

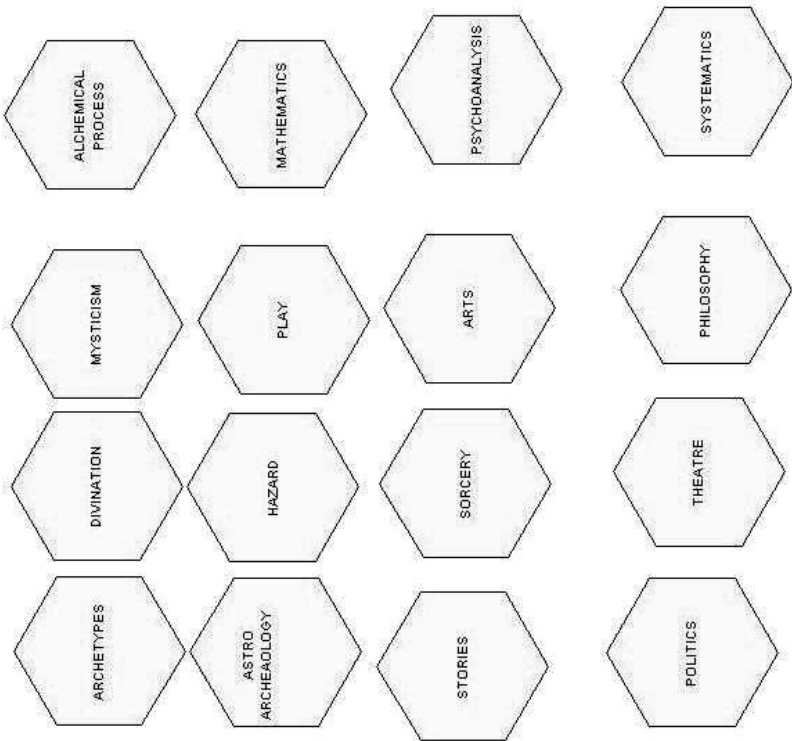
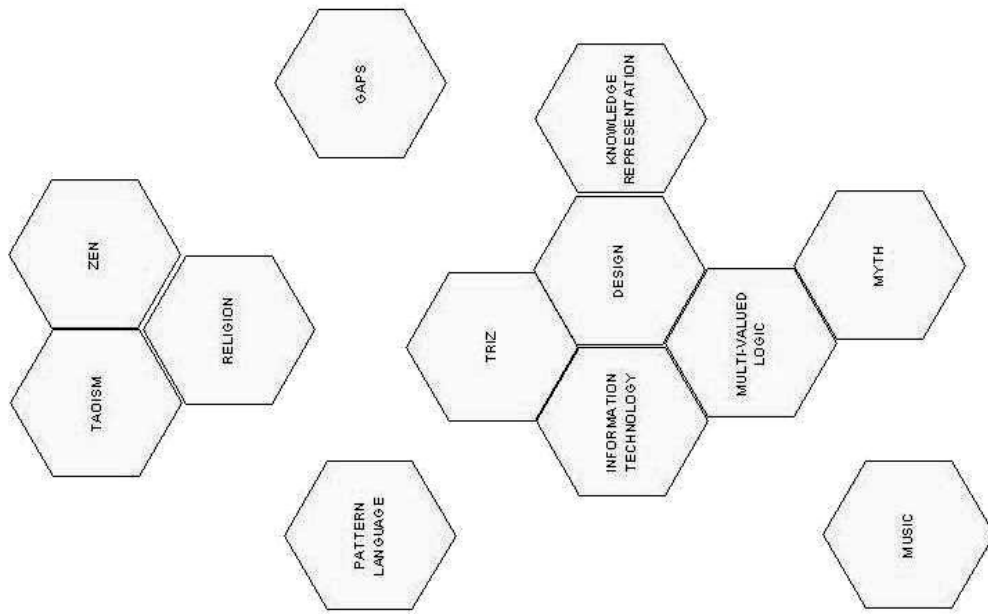
Agreements had to be reached over the moves. These agreements were *provisional and approximate*. At all times, a compromise was being worked out between continuing the flow of the game and going through explicit negotiation procedures.

To begin with, participants took turns in making moves; but towards the end, this restriction also gave way to more free form dialogue.

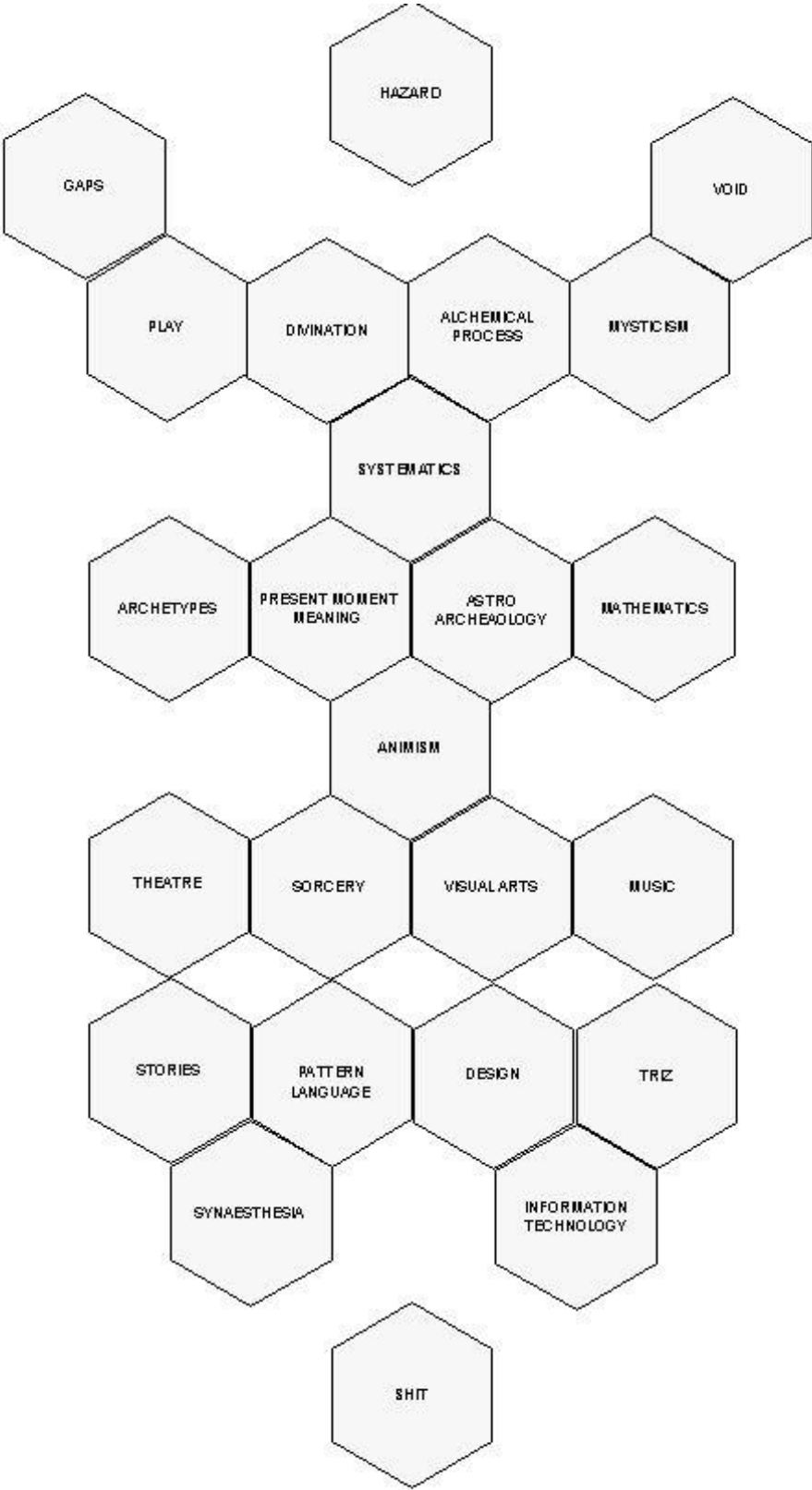
Some sense of the progress of the game can be given in terms of two of the many stages it went through. The first image is of an early stage in the game (shown on its side to enable the words to be better read). The MMs that were then on the 3 x 3 meaning grid are shown here separately for clarity.



At this stage, 'Systematics' was not in the original grid at all. The whole game area is show below. This MM is being seen rather as the 'centre of the co-ordinate system' of the grid and from it came two axes of reference encompassing the grid. The MMs on the right hand side are being held 'in the wings' and make their entrance later on. Also note that by this stage, the meaning grid had been exceeded by MMs placed to the right and below it.

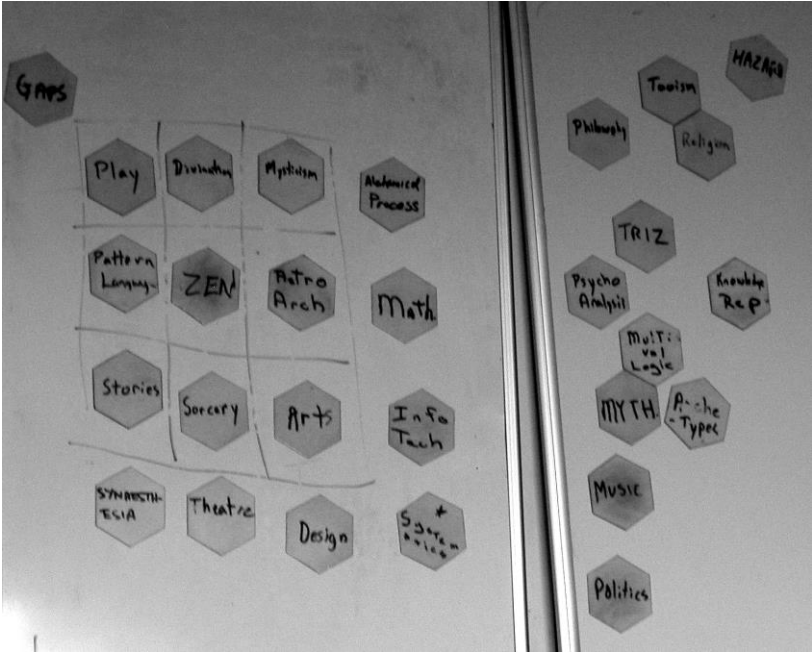


In the final stage of the game, a very different form had emerged.





In this form, the original grid has disappeared entirely and a complex whole shows itself. Nearly, but not all, of the original set of MMs have been brought into the picture. The following photos give an impression of the series of stages connecting the two representations.



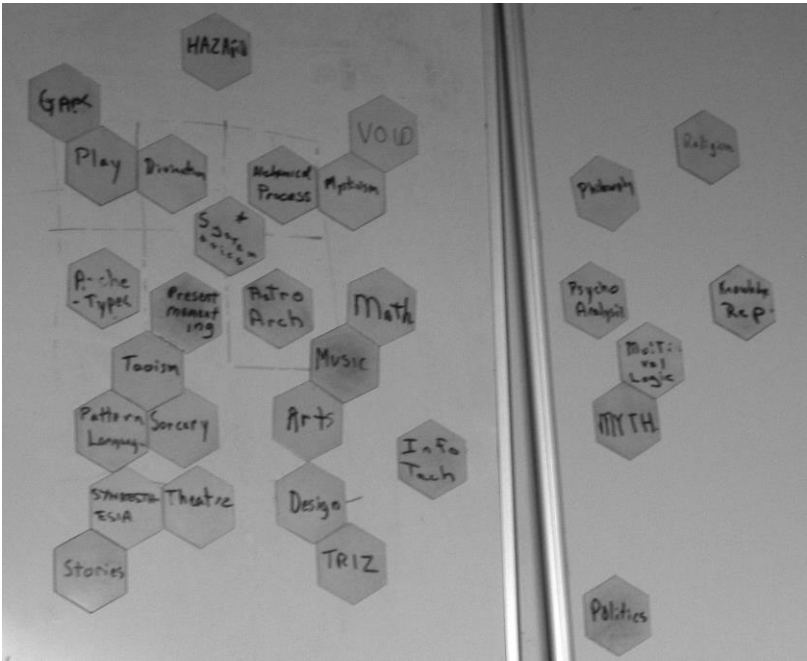
The placing of 'Gaps' marks a significant new departure from the original 3 x 3 grid and gives this MM strong emphasis.



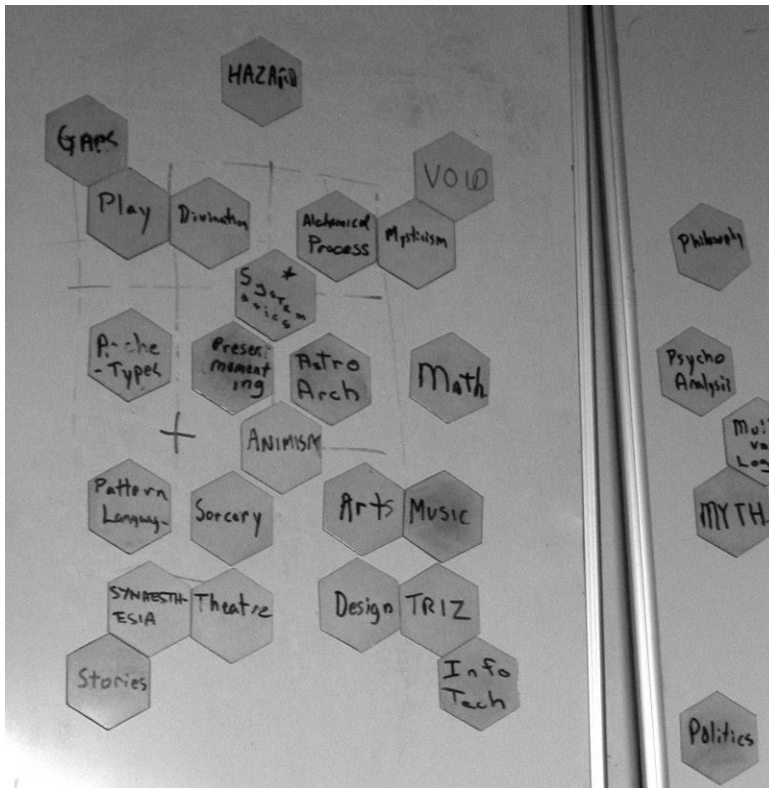
New kinds of grouping appear, so that *local regions* appear with their own emergent organising principles.



'Systematics' has been brought into the main arena and appears as a major centre of gravity for its local regions.




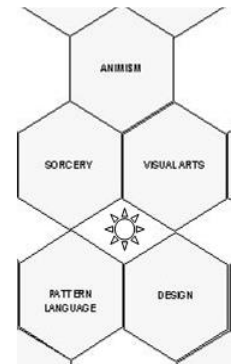
The previous tendency continues even more strongly and an overall shape begins to appear.



The arrangement moves towards greater symmetry while a new and highly significant MM appears in relation to 'Systematics'. This is 'Animism', which was intended to reflect an implication of the previous MM 'Taoism'.

The final additional MM 'Shit' was only partly tongue in cheek. It was intended to acknowledge the ground material out of which what is living can be made.

The symbol  that appears towards the bottom of the final structure was placed there because of a felt need for an MM to complete the vertical column. This was provisionally identified as *language*. Adopting this item, the vertical column then appears as a sequence of five MMs, the composition of which was surprising to the players themselves. In a word, it was truly emergent. 'Hazard', 'Animism' and 'Shit' are *wild* elements while 'Systematics' and 'Language' appear as *domesticated* ones.

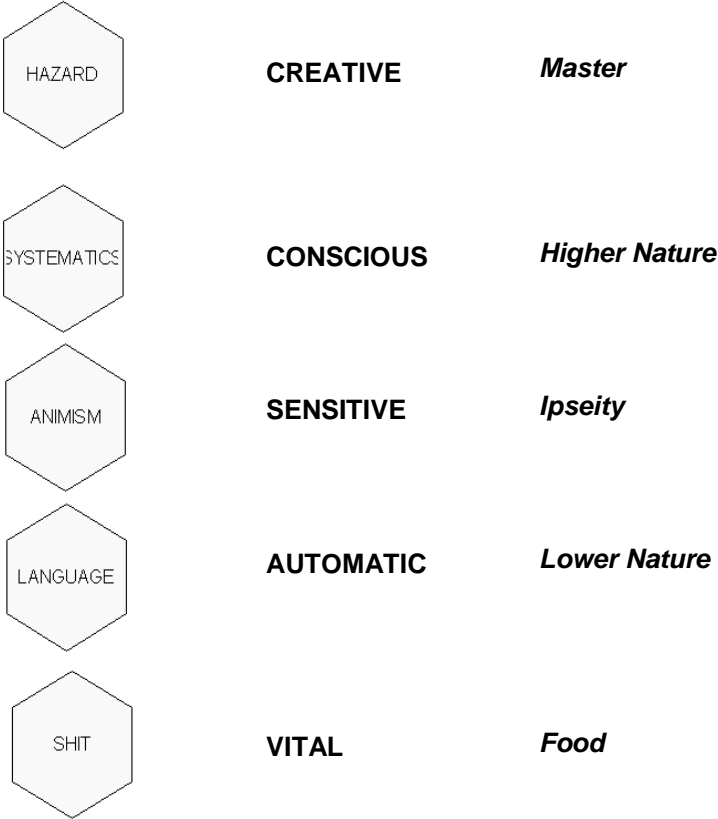


We can adopt the principle of *sequence* (see next section) to correlate this set of MMs with elements of two schemes that Bennett developed. One is of the Essence Classes while the other is of the Energies. In the case of the Essence Classes we have a pentad in which the central ipseity is Animism (not Systematics). Animism came into view as a replacement for an earlier MM – Taoism – and was intended to convey the significance of taking everything as alive and meaningful in its own right. Systems are more abstract but bring into view what is beyond life. We can, therefore, regard Systematics as the 'higher nature' of Animism. But another surprise is that then Language appears as the 'lower nature' of Animism.

The pentadic order relates to the human body in an interesting way. The bottom term is associated with the anus, as the crude word Shit implies, but Language appears in association with the base of the spine, location of the 'moving centre' but also of Gurdjieff's mythical organ

of deception he called *kundabuffer*. Animism is centred in the belly and Systematics in the chest. Here we might remember that in ancient Greece ideas or thoughts were located in the lungs, while the head – here as Hazard – was ‘beyond consciousness’, as sexual, creative and unpredictable. Any such correlation can be only suggestive. Another one might relate to: Head, Throat, Heart, Solar Plexus and Belly.

The diagram below conveys some sense of the correlations according to sequence and includes elements from Bennett’s twelve-fold scheme of Energies.



The detail of the exchanges that went on the playing of the game is not included here, but arriving at the initial set of MMs, engaging with each other over their placement, coming to change the space of play and arriving at interpretations was a rich and complex process and we faced such questions as:

1. What could we take as the ‘final product’ of the game?
2. How could we present the real substance of it to people who were not present?
3. What has happened to us by playing the game?

The ostensible product was the final structure of MMs but the more essential result was a shift in the way we understood systematics. At the same time, it was thought (by some of us but not all) that we could take the structure and present it to a group and initiate a dialogue in which we could recapitulate and even develop the thinking that came about in the game. The situation would be reminiscent of *structural communication*, where there is an already worked out set of MMs (content) and also a meaningful structure (form) but, to further the correspondence, we would have to create another kind of meaning game to enable people to enter into the

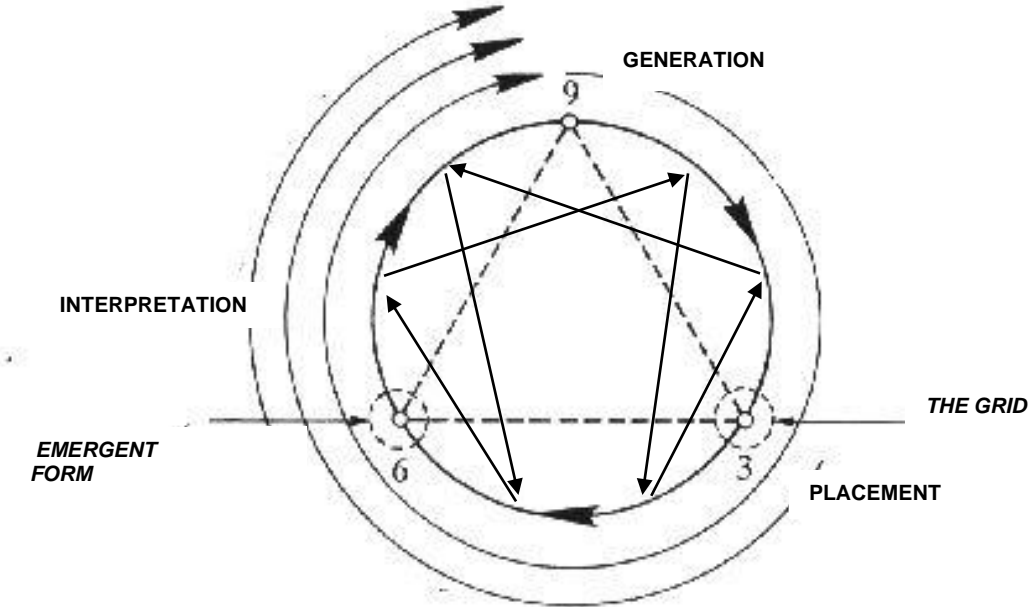
experience. For example, we would have to take sub-features of the final structure and create questions that would elicit responses from participants to be expressed as subsets of the total set of MMs and also find a way of bringing out the structural relations between MMs. This was never obtained in structural communication, which remained in the domain of sets (see next section) and only speculated about sequence, let alone symmetry and so on.\* A major part of the power of the game and its results lay in the enigmas it produced, such as those briefly discussed in this section. The game of Interpretation never ends. It is akin to *contemplation*. As we progress through the meaning game we find that we become increasingly aware of more and more subtle 'shapes' of meaning. The more we articulate in explicit form the more we feel yet deeper levels in the implicate order. For every explicit representation, there is an inner reflection or complement that is implicit and thus only at the threshold of what we can name and describe.

The construction and playing of the game, as well as the reflections beginning to be expressed here about its implications, led to a new view of systematics as a discipline and we attempt to describe and discuss this view in the next section.

\* Amongst these speculations, we thought about three kinds of 'programming': A type concerning sets, B type concerning sequences and C type which may be related to symmetries.

**APPENDIX ONE - Enneagram of Games**

The representation emphasises the build of the three games – generation, placement and interpretation – and shows how there is both a main sequence of them coming into play one after the other and an intertwining of them. Point 0 (that becomes 9) is the question. The inner sequence 1-4-2 belongs to the operation of the basic rules, while the sequence 8-5-7 belongs to the evolution of rules. The gap 4-5 indicates the critical transition between playing in the given form (the grid or magic square) and reshaping the grid into new and more complex forms.



**APPENDIX TWO – The Stone Game**

**Stone Game**

Materials: Stones, sticks, paint, and found materials

“The Stone Game, created in 1994 by Leslie Schwing and Janet Young, has been used in many ways, as an art installation (indoor and outdoor), as a team building exercise for boards and corporations, as an intellectual “sport” in academia, and as therapy tool. The game is an abstract art game of inquiry and dialogue. Posing a question or problem, prior to play, stones and natural objects are collected by the players and ritually arranged in combination with glyph marks. In an outdoor setting, the glyph marks can be drawn in the sand, dirt or arranged with sticks and twigs. The result, always an object of beauty, is also a relic of the query. Dialogue during and after the game increase the understanding of both question and possible answer that arise during the play. Nature “finishes” the game through the work of weather and circumstances.”

**APPENDIX THREE – Magic Squares as a Method of ‘Relevance Computation’**



*Melancholia*  
by Durer,  
includes a  
magic square

16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

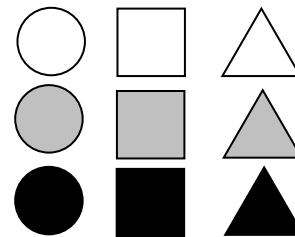
In all directions, the numbers sum to 34.

16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

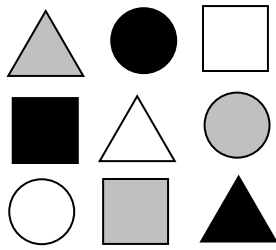
**Inner squares add to 34**

one colour in three shapes.

Magic squares appear in many guises. One of them is in Euler Squares, which can be illustrated diagrammatically as follows. In the case of a 3 x 3 square there is a given set of three shapes which can take three colours (shadings):



One then looks for an arrangement in which every row and column contains all three shapes *and* they are each of a different colour. One such is shown below. There are nine different ones depending on which element is placed in the centre. The diagonals will always consist of one shape in three colours or



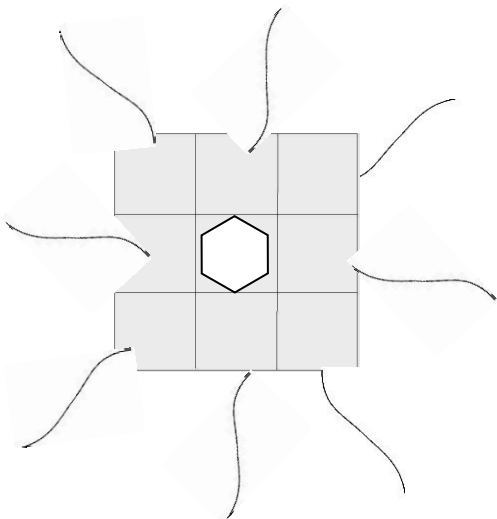
These kinds of square give a different perspective on the triad, for example, because they use two dimensions and not just one.

The idea of magic squares can help organise our thinking about an idea (word, method, feeling, etc.) by 'placing' it in the centre and arranging other ideas around it that have a 'magical logic' to their arrangements.

- Geometry – symbolism**
- Set theory – transfinite numbers**
- Archetypes – Jungian psychology**
- Mythology – narrative form**
- Game theory – multi-player**
- Technology - physical systems**
- Music – principles of harmony**
- Astronomy – reconciling cycles**
- Etc.**

	<b>SYSTEMATICS</b>	

Which of these would you play in the game? Where would you place them?



**A 'meaning chip' with core MM and linked MMs that can be connected to other 'meaning chips' to form a 'meaning processor'.**



## APPENDIX FOUR – *Paidia and Ludus*

Extracts from *The Paidia/Ludus Continuum* by Dakota Brown.  
<http://www.avantgaming.com/papers/paidialudus.pdf>

First and foremost, all activities located on the paidia/ludus spectrum are systems. In *The Rules of Play*, Salen and Zimmerman (2004) define a system as a set of parts that interrelate to form a complex whole. They further state that all systems share four common elements; objects, attributes, internal relationships, and an environment. Objects are the individual parts within a system. Attributes describe the characteristics of those objects, identifying possible combinations of objects. While the attributes of a system establish permutative possibilities, internal relationships establish rules of function and interaction that are external to individual objects. Finally, the system's environment is not only the context of interrelated elements, but is the sum total of all of the system's surroundings.

Huizinga's play concept includes several qualifications that in many instances systems are not able to satisfy. The first being, the activity must be voluntary. Simply put, one cannot be forced to play. Secondly the activity must have an aim that is strictly in itself. When player engages in a paidia or ludus activity for reasons other than the activity itself, compensation for example, the individual becomes something other than a player- such as a worker in our example. Finally, all active agents within the system must accept the system's rules as absolute. For just as the system directs activity by the attributes and internal relationships it endorses via inclusion, it shelters and protects its activity and agents by disallowing other attributes and internal relationships expressly or via exclusion. Adherence to these special qualifications creates an awareness that the activity one is engaging in is outside of and different from "ordinary life," and subsequently generates the feelings of tension and joy referenced by Huizinga.

Caillois alludes to a greater, primordial form of paidia:

...the first manifestations of paidia have no name and could not have any, precisely because they are not part of any order, distinctive symbolism, or clearly differentiated life that would permit a vocabulary to consecrate their autonomy with a specific term (29).

As this pure paidia exists outside of any order or culture, the standards by which we consider ourselves to be educated and civilized would seem to partition us away from it. While discussing this core facet of play, Johann Huizinga noted:

We can safely assert...that human civilization has added no essential feature to the general idea of play. In this statement, I believe that Huizinga is affirming the existence of pure paidia as stable concept isolated from human intervention. It is the foundation that all of our paidic and ludic activities are built upon. The basic building block of these structures is the rule.

Frasca details that Piaget believed that games (paidia and ludus systems) could be divided into three categories; games of exercise, symbolic games, and games with rules. Games of exercise, he said, are games played during the first two years of life that primarily involve basic senses and movements. Symbolic games are typically played between the ages of two and seven and rely on imagination and association. For example, a child running with his or her arms out-stretched parallel to the ground is associated with an airplane in the context of a symbolic game. Finally Piaget observed that around the age of seven, children undergo a socialization process and games with rules emerge. Games with rules are recognized as the games we play into adulthood such as sports and board games .

As stated, Salen and Zimmerman define rules as principles that guide and direct behavior. For our purposes, we can reframe that view: a rule is anything that defines an association or relationship between objects in a system. In the event that objects are not initially

in the same system, the establishment of a rule creates a common context, which may then be considered a system. However if it is indeed true that the presence of rules is a basic quality of the play concept and that the establishment of a single rule can create a paidia system, could not all paidia systems containing a single rule be considered pure paidia?

Visualizing an absolute ludus system is a far simpler feat than visualizing a pure paidia system. In fact, large portions of the world's population live their lives as if they were absolute ludus systems. The framing of life through the lens of religion reveals absolute ludus in its visceral beauty. For example in the general Christian belief system, all of an individual's thoughts and actions during life are quantified towards the determination of whether or not they are ultimately granted admittance to Heaven. While many will vehemently disagree with the experience of being admitted to Heaven with that of winning a game of *Pong*, the pursuit of success and victory within a given system is a common motivation.

## PART FOUR – SYSTEMATICS AS A GAME OF GAMES

They [the two sides of our brain] process information in radically different ways. This difference is most easily explained by a look at two words often thought to be a synonymous: order and structure.

Order, on the one hand, comes from the Latin *ordo, ordini*. It means "in a straight row," "in a regular series." Order implies linear, rule-governed activity. Order is imposed from without. Structure, on the other hand, comes from the Latin *struere*. It means "to heap together." Structure emerges from within. [<http://volcano.und.edu/vwdocs/msh/lc/is/cm.html>]

### PREAMBLE

Bennett called systematics a 'discipline of thinking'. This means that it has rules and principles. It does not tell people what to think but how to think. It has been often taken to consist of a set of 'templates' – the ideas of the systems – that have been collected and made available for people to apply to various situations. In this respect, it would be like TRIZ. As TRIZ correlates inventive principles with types of contradiction, systematics would correlate systems with types of situation. However, there is a deeper aspect, in which systematics can be seen in terms of how systems are arrived at in the first place. We call this a 'game' because there are various components brought together according to rules and different people can interact with each other in making moves.

We can understand the game in terms of various levels of play, or sub-games. Every game consists of sub-games. The first four of these lead us into *meaning games* and the next four take us through into *societies*. The eight sub-games are dealt with here together, though they were presented in two parts at the Gathering.

It is important to bear in mind that although we take pains here to spell out what is meant by the various games, these conceptual descriptions and explanations are about what people *can do instinctively* without any apparent theory. In some ways, there is a strong dyad between what we can *explain* and what we can *do*. The explanations may be more complex than the experience of playing the games.

### SET

Bennett's definition of a system was: *a set of independent but mutually relevant terms*.

We first look at systematics in terms of sets and put to one side the idea of mutual relevance. A set is a 'many thought of as a one'. It can be something completely arbitrary such as 'the leaves blowing in the street this afternoon' but it does entail that we can determine what belongs in the set and *count* how many it contains. This number is called the *cardinal* number. Different sets can be equated in terms of their cardinal number. It then does not matter whether they contain angels or motor cars, colours or digits, etc. because it is in this particular way that they are equivalent. For every member of one set, there will be a member of the other sets. It does not matter which member of one set is matched with that of another as long as there are the same number of them.

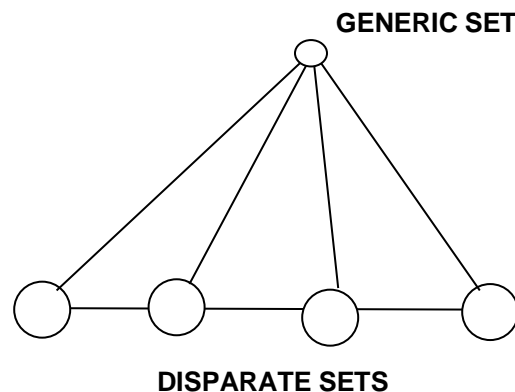
Systematics raises the possibility that different sets of the same cardinal number can have more in common than their cardinality. This can be taken to foolish extremes in certain kinds of obsession with numerology. For us, it is a valuable starting point. And people can play the game of putting two sets of the same cardinal number but divergent content side by side and asking what more might be held in common in them.

Though we put aside the idea of mutual relevance between the terms of a systemic set, it comes into play here in terms of mutual relevance *between sets*. What this relevance means is not to be spelled out beforehand. It is only a *possibility*. For example, we discover in China the

system of 8 trigrams in the divination *I Ching* and also the teaching in Buddhism of the Noble Eightfold Path. Is this just a coincidence? Is there, for example, some meaning of eight that has special value in Chinese culture? If there is, does this have any significance for us? We know that ancient cultures often attributed meanings to numbers and in the case of the Chinese, 8 is associated with fortune. This can be dismissed a superstition, but is there some prior reason for it?

On the one hand, the association of one set with another is entirely arbitrary and signifies nothing. On the other, it has potential meaning. This meaning could lead us back to some earlier work done by creative groups as well as to current cultural accidents. There are some similarities here with Jung and Pauli's concept of *synchronicity*. Two seemingly unrelated things are brought together in a way that implies that they are mutually relevant. Jung took this primarily in the sense of a coincidence between psychic and physical events, but it can be extended to our case of two sets that appear together because they are of the same number.

One of the forms of such a comparison is akin to triangulation, as when two points of reference are used to take bearings on a third. In taking two disparate sets, the base-line is due to their differences of content and the third point might be a 'generic' set, with the character then of a 'system'. In other words, we could develop the idea of a system of N terms by considering together various disparate sets of N members. It is the bare idea of the system because it will not show us how it is composed, which concerns the next game.



When Bennett worked on the tetrad, he was much influenced by Aristotle's Four Causes, as well as the Greek system of four elements. The two systems are reflected in much of his work, but they came together in his proposal of the systemic attribute of the tetrad as 'activity'.

In various traditions, there are archetypal meanings associated with the integers. These are like 'angels' as 'messages' from the realm of higher intelligence. On a lower level there is *magic*, which is based on correspondences, folklore and superstition. For example, in China 3 is associated with 'unanimity' and 8 with good fortune.

## SEQUENCE

Beside cardinal number, there is *ordinal number*. This is when we count as 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and so on. In other words, the members of the set have a sequence. When we come to the game of sequence, we are able to match members of different sets with each other in the specific sense of an order. For example, in dealing with triadic systems, Bennett spoke of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> type of 'impulse' (simply as 1, 2, 3). Attention is on the *character of the terms* of the system and not just the attribute of the system as a whole. We can then look at triads such as the Chinese Heaven-Earth-Man in a comparative order, such that Heaven is matched with 1, Earth with 2 and Man with 3. Or the Christian Trinity with Father-1, Son-2 and Holy Ghost -3.

It is only now in this game that *terms* appear with distinctive characteristics in their own right. In the previous game, their sole property was as a member of the set and, in effect, one term was as good as another. Using analogy, we can think of the game of Set as in black and white while Sequence introduces colour.

In ordering the members of a set as possible terms of a system we have to have some reason for the order we choose and one person's preferred order may not be the same as another's.

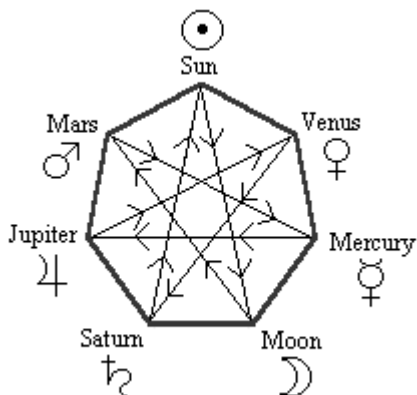
So there has to be some consciousness of the reason for the order we choose in one set so that it is possible to look for the same kind of order in another set. Concern with sequence brings us into games of *reasons*.

One of the simplest but well known contrasts of order is that between clockwise and anti-clockwise directions for elements in a circle. In the system of the *I Ching* there is a clockwise order, which concerns how things unfold and an anti-clockwise order which relates to how this unfoldment might be *predicted*.

Bennett spent considerable time considering the meaning of different orders of the three terms of the generic triad, for which six alternatives are possible (in the case of the dyad, there are only two; in that of the tetrad there are 24). He developed the six different orders as six distinct versions or 'laws' of the triad.

There can be all kinds of reasons for various orders. One common kind is associated with sequence in a strict sense, as of operation in time. Another is associated with a hierarchy such as depicting different levels. The latter appears frequently in Bennett's work. An example is where he took the *transfinite numbers* of Cantor and correlated them with the four *worlds of Sufism* (see *Creation*) with a hint of the *Four Elements*. The transfinite numbers (in fact, he started with everything that exists as a very large number N and then went on aleph-zero, aleph-one and aleph-two) have an intrinsic mathematical order. The worlds are in an order in terms of degrees of freedom. The ancient four elements are ordered in terms of degrees of subtlety. In other contexts, Bennett spoke of *four mental energies* which were strictly in the hierarchical order automatic-sensitive-conscious-creative. But, when it came to correlating this scheme with others there was often a sense of a *transposition* up or down. That is to say, we had the same relation of order in the two cases but they did not match in terms of levels and had to be adjusted to do so. This approach is evident in his many examples of twelve term systems, which were often treated as three sets of fours. Each set of four could be correlated with the others but were significantly different *in the context of the total system in mind*. Thus, there were four *mechanical energies*, four *vital energies* and four *cosmic energies*. We shall speak more of this later when discussing the game of Set<sup>N</sup>.

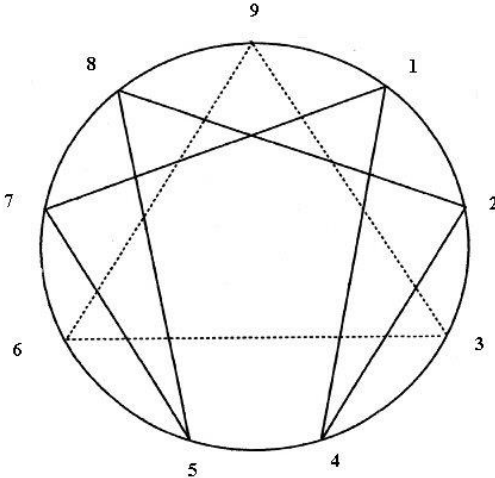
Discussion of the reasons for any order are important not only for being able to compare the terms of different versions of a system (or different sets) but also for entering into an understanding of the type or types of mutual relevance that obtain between the terms. Sequencing cannot though be a complete analysis of mutual relevance because it only deals with terms one after another. It is like a proto-version of mutual relevance.



In producing different orders we call upon our understanding, which embraces both some sense of physical laws and also of 'inner' meaning. There might also be very distinct orders for the same set of terms that reveal some underlying *intention*. A paradigm for this is the sequence of seven days of the week, which days have names that relate them to the seven terms of the solar system. Most commentators consider the orders of the days to be arbitrary, but if one takes the various 'planets' around a circle in terms of their angular velocity (as shown here) and then *draws in the cyclic figure connecting them* the inner sequence is the correct one. Here we see around

the outside a *visible* order and inside the circle an *invisible* one (but we can ask, which really is which). We can infer the inner sequence but may find ourselves unable to understand why it was chosen. Perhaps some 'message' was intended to be conveyed by it, one that would only become apparent to those able to work it out.

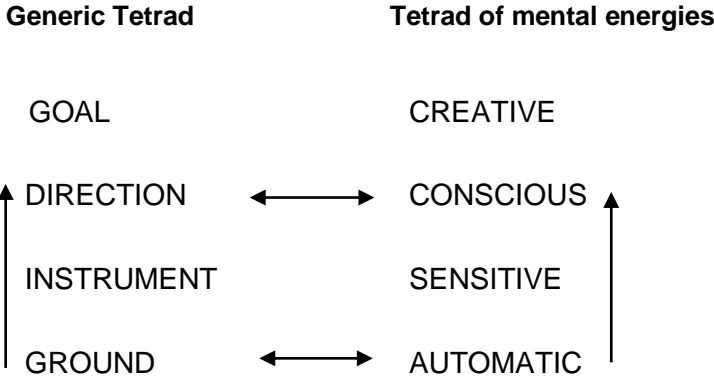
This must of course remind us of the long-standing influence of *encryption* on the use of number. Cryptology translates one sequence of elements into another such that one has to have the code to decipher the message. This widely known principle was elaborated by Gurdjieff in his idea of *legonomism*. He proposed that ancient creative groups encoded their insights into works of art that were entertaining enough to be transmitted over generations (even millennia) to future wise people who could work out how to read them. According to his theory, the ancients *altered the sequence* so that what appeared would not be what was expected. By noticing this, intelligent people could detect that there was some hidden message they could decipher.



If we have two contrasting orders then one of them can appear as the ‘exoteric’ or outer meaning and one as the ‘esoteric’ or more hidden meaning. This is very evident in the case of the enneagram, which has one order of terms around the outer circle but two inner orders inside it.

Matching two sets in order might reveal interesting correlations. A possible example is that between the series of integers and the letters of the alphabet. There we discovered a curious feature that suggests a similarity of vowels to the prime numbers (see p.23). The method of sequencing – and matching up terms between different sets – is an heuristic device.

The game of sequence enables us to think in terms of ‘common ratios’, the latter word having original associations with reason. If we have a sequence 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> in two sets of four then we can look at how well the ratios between the terms match up. Is the step from 1<sup>st</sup> to 3<sup>rd</sup> in the one of the same kind as the equivalent step in the other?



In this comparison, double arrows are cross-translations and single ones are steps. The comparison can help us understand *both* versions better. What has to be noted however is that our understanding of *any* of the terms might be very limited. In that respect, the comparative process can be imagined as encompassing a range of exemplars that includes very familiar as well as more obscure content. This was practised in Old Norse culture as what are known as *Kenning games* (see <http://kennexions.ludism.org/old/kenning.html>):

Kennings are an old Norse poetic device based on analogy. They're similar to Homeric epithets. Where the Greeks might say "the wine-dark sea" in their epic poetry, the Norse

would say "whale road." This of course comes from the analogy "sea is to whale as road is to horse" or something like it. To use the standard shorthand, this becomes

sea : whale :: road : horse

You can also diagram it as

sea    road

----- :: -----

whale    horse

The key to the Kenning Game is realising that such an analogy provides four kennings possible (or at least permissible). In this case, we have

sea = whale road

whale = sea horse

road = horse sea

horse = road whale

Some of these seem a little strange, but we might make sense of them by positing that "road whale" for "horse" is the product of a culture of aquatic intelligent beings that ride whales the way we ride horses. Some kennings do come out strangely, but one thing we are after in art is the novel viewpoint.

The order of terms enables a correlation to be made between different expressions of a system. For example, Martin Lings in his book *Archetype and Symbolism* has a chapter on the triad of the primary colours red, yellow and blue that surveys correlations in Christian, Islamic and Hindu mysticism. Also, magical practices are founded on correspondences, such that a particular colour, flower, scent, image and so on are brought together to concentrate a particular influence. When Bennett spoke of the qualitative significance of number, he said that this was magic. Number corresponds to colour, scent, image, etc in schemes of magic. We may see this as purely reflective, a way of encoding information about a situation, but magicians claim that the practice can *actually change* the situation.

The relevance of systematics to magic and also to divination has hardly been explored, since systematics was largely taken up as a way of modelling situations such as in management and other 'rational' pursuits. But it is deeply rooted in instinctive intelligence and the reality that 'mental' forms and 'physical' processes are not separate phenomena, or that software and hardware are a coupled system.

We cannot leave the game of Sequence without taking a look at the basic symbolism of the series of integers used by Bennett. One of the questions we have concerns the *intervals* between them. We may assume that they proceed just by 'adding 1'; but this arithmetical progression is only one out of several possibilities. There is the *geometric* progression in which intervals are defined not by addition but by ratios. This is what we use in the case of the musical scale. The note sol for example is 'halfway' in the octave from do to do' in terms of frequencies (if do is given the number 1 and do' the number 2 – doubling of frequency – then sol has the value 3/2 and is midway between do and do'). Intervals measured as ratios are different from those measured by addition. Another alternative progression is *logarithmic*. This is by no means just a human invention for aiding calculations; it manifests in the way we hear intensity of sounds and has recently been found in the way that pigeons can distinguish time-intervals. In experiments with pigeons, it was found that the boundary or transition point between 1 and 16 seconds was at 4 seconds and not at the expected 9 seconds. Bennett drew attention to logarithmic time in volume four of *The Dramatic Universe*.

The idea of intervals is present in Kennings. Just as we can equate intervals in music at very different regions of the audible frequencies, so in Kennings we can equate ratios of ideas. The

span of an octave is crucial in defining a given whole that can be divided into several notes in various ways. In his book *The Unanswered Question*, Bernstein shows that various musical scales have evolved associated with different number divisions. The primary nature of the octave is deeply connected with the fact that men's and women's voices tend to be an octave apart. It is something primordial and can also be found in some shamanistic practice where the shaman 'dialogues' with himself in two voices, one high and the other low. In the next degree of scale, the 'halfway' note (sol in our usual scale) emerges and, according to Bernstein, this is the scale commonly used in *chanting*. The next common scale is pentatonic and used in folk music from all over the world. So we progress to ever-more complex divisions, which include our western diatonic scales (the major diatonic scale is the one used by Gurdjieff. Meanwhile, there have also been the six-fold scale of Debussy and the twelve-note scale of Schoenberg (based on the 'chromatic' scale of notes with intervals of a semi-tone).

In her writings on the Greeks in relation to Christianity, Simone Weil has dwelt on the significance of finding the 'mediating' or middle point between two contrary ideas. This was, for her, a powerful metaphor for the nature of Christ as mediating between man and God; but also, in general, as the idea of mediation.

Concern with intervals, common ratios and mediation is a concern for what is 'between' the numbers, or their mutuality. This is far richer in meaning than what can be contained within the numbers (or whatever the primary elements are) separately. In the game of Sequence, therefore, we begin to touch upon the *in-between*. This is increasingly developed through the games.

## **SYMMETRY**

This game, as we shall see, includes such operations as 'splitting' and 'chunking'. It has to do with how we group sub-systems of systems into patterns and brings in a *visual* component. We use the word *symmetry* to emphasise how much depends on an aesthetic sense of order, which distinguishes it from the sense of order that we call sequence. Gurdjieff used the words 'Form and Sequence' to discuss how we can best learn.

A big factor is how we 'chunk' a number of elements into one thing, or one meaning. We are always looking for ways of doing this because there are limits on our mental capacity to hold several elements together at once. This has been identified with the phrase 'seven plus or minus two', which numbers (5-9) represent our maximum capacity. It is interesting that even these belong to the second level of our table of systems. For the most part, we can only grasp 1-4 items at a time. If we have lots of elements then we will only attend to some of them at any one time. This corresponds to the 'figure-ground' theory of Gestalt psychology. In LVT, we group the many MMs into a smaller number of 'clusters' and learn how to attend to cluster meanings to reduce the complexity.

Right at the beginning of the discussion, it is important to draw attention to the necessary vagueness of what it means to 'see one meaning'. We have a sense of this but it is barely conscious. We know that people such as master chess players chunk sets of pieces and moves and places into one meaning but even they may find it difficult to explain what it is they do or how it works. But this is also problematic when we take the simple case of a statement that consists of many words, but is read as one thing.

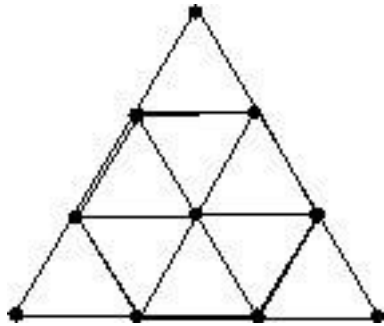
When we have more than four elements, we probably start to look for ways of splitting the whole set into chunks that makes it easier for us to hold all the elements in mind. The easiest way is to think of a square made of four of the elements and the fifth as in its centre. A more aesthetic way is to draw a pentagram which arranges the terms symmetrically. When we come to six elements, we are tempted to put them into two triangles: on one level we have just *two* symmetrical elements; on another we have two sets of three. In the case of the heptad, we can



use two squares though in this case one term is common to both. Again, on one level we have just two elements but on another we have two sets of four and, finally, a special case of one element.

Splitting the system mathematically corresponds to producing *partitions*. For example:  $4 = 3 + 1 = 2 + 2$  and so on. However, a *visual* component assumes importance also, because we can use shapes to help chunk items together. These shapes – such as triangles, squares, circles and so on – support a sense of wholeness. Symmetries help us to ‘compress data’ into simple forms. In making visual patterns with symmetries we can evoke new aspects of the meaning of the system. These are aspects that are difficult to spell out in words! The shapes are symbolic of wholeness and relate to the *continuum* in which systems appear.

When we represent an Octad as two squares, this is certainly an efficient way of holding the 8 elements together in our minds. But it implies that we *have a reason* for this partition and symmetry and presume it can tell us something. Of course, we might be led to make the picture simply because of aesthetic feeling but the *choices* we make in grouping the terms can be significant. It can lead us to ask questions about the two sets of terms: why are they partitioned in this way and are there correspondences between terms belonging to the two sets? (see my essay on the Octad at <http://www.systematics.org/journal/misc/OCTAD.pdf>)



The game of symmetry brings out *sub-systems*. We have referred to different levels. In the Octad as two squares, we have one set which has two members and two sets which have four members. In the enneagram symbol we have two sub-systems, one of which has six and the other three members (actually the former has seven members and we have to take into account the special term – at the top – which is common to both). For the Decad we have used the triadic form as shown here for maximum symmetry. On one level there are four sets of 1, 2, 3 and 4 members respectively ; on another there are two sets of six and three members, but there are also many sub-sets of three members (see the smaller triangles). All these various views of sub-systems can provide us with a way of looking *in-to* the meaning of the system in terms of mutual relevance of terms. Every visual sub-set carries a ‘chunk’ of meaning.

Appeal to symmetry raises the question of *asymmetry*. When a more asymmetrical form is chosen for our representation of a system, this too is significant. Why would we break symmetry? Here we can reflect that symmetry evokes in us a sense of perfect balance, or an ideal state. The breaking of symmetry can then lead us to think of the ‘imperfect’ way in which systems may be realised in real life. The enneagram symbol embodies asymmetry as well as symmetry. There is a reason for this and it has to do with Gurdjieff’s idea of ‘shocks’ having to come in to keep the system going in a right way and not fall apart, which Bennett interpreted as a set of corrections to overcome hazard.

The breaking of symmetry is in general an indication of the way in which the Ideality of the system fails to be realized in actual circumstances but it *also suggests ways in which we might correct for this*.

The breaking of symmetry can also carry a story or narrative. This may be the case in the Tree of Life symbol of ten terms used in Kabbalah, as it was developed in (probably) the 12<sup>th</sup> century. It is both symmetrical and asymmetrical. It is full of sub-systems. Some connections are filled in but not others. These are, incidentally, correlated with the Hebrew letters and the design may have been influenced by the intention to find such correlations. In a word, it is at least as complex as the enneagram and the two have often been compared. In front of this diagram we have to ask: why are the terms arranged like this? Here is at least a story to do with its history

that can be looked into (even though it is difficult to find documented explanations from the period).

Symmetry and its adjunct asymmetry give rise to *symbols* and we could equally well have chosen the word 'Symbol' for this game. Our general argument is that symbols show a pattern for a system that can sometimes suggest ways in which we have to put something into them to make them work. This 'putting in' symbolises putting work into actual situations to improve their Ideality.

One of the greatest symbols of our culture is that of the Crucifixion. This can be taken as an act of suffering needed to heal the divorce of eternity (vertical) and time (horizontal), or the Ideal and the Actual (reminiscent of Bennett's version of the tetrad as: Actual, Practical, Theoretical and Ideal).

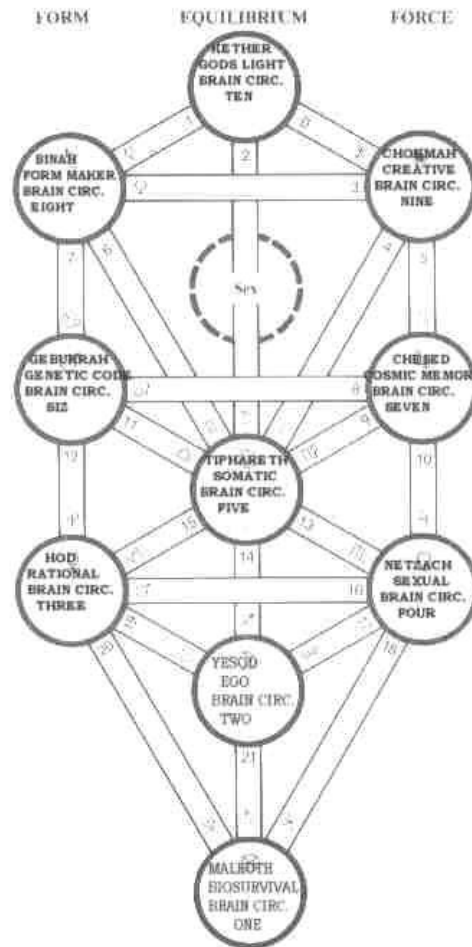
There is an obvious tendency for our perceptions to organise around symmetries but this may reflect natural phenomena:

It was Wolfgang Kohler who, impressed by the gestalt law of simple structure in psychology, surveyed corresponding phenomena in the physical sciences in his book on the "physical gestalten," a *naturphilosophische* investigation published in 1920. In a later paper he noted:

In physics we have a simple rule about the nature of equilibria, a rule which was independently established by three physicists: E. Mach, P. Curie, and W. Voigt. They observed that in a state of equilibrium, processes-or materials-tend to assume the most even and regular distributions of which they are capable under the given conditions. (See Appendix 1)

### SET N

In speaking about the game of symmetry we had to introduce the idea of sub-systems as appearing within the system. In the next game, we include the idea of any system as operating in the context of 'all' the systems. The 'all' will not be infinite. In the case of the Jungians, we concluded that their effective set of sets was four-fold. In the case of Bennett, it at least eight-fold. In the case of Peirce, only three-fold. The effective set of sets defines the repertoire of systems involved in the interpretation of any one of them.



13	14	15	16
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<b>9 ENNEAD</b>	<b>10 DECAD</b>	<b>11 UNDECAD</b>	<b>12 DUODECAD</b>
<b>5 PENTAD</b>	<b>6 HEXAD</b>	<b>7 HEPTAD</b>	<b>8 OCTAD</b>
<b>1 MONAD</b>	<b>2 DYAD</b>	<b>3 TRIAD</b>	<b>4 TETRAD</b>

The arrangement of systems shown above is a form of symmetry that groups the systems vertically and horizontally. In this guise, SET<sup>N</sup> is similar to the previous game. However, it has further implications. It says that work done in any one system will be influenced by what has been done in other systems. This leads, for example, to look for consistent ways of interpreting the systems.

The arrangement leads us to look at the series of systems in different ‘periods’ and we note that 5 – 8 is a new cycle of the thinking that goes into 1-4. Bennett made original contributions to our understanding of pentad to octad. His pentad is a unique interpretation that combined insights from the natural sciences with insights into Gurdjieff’s *Diagram of Everything Living*. The natural sciences gave him a sense of *transflux equilibrium*, while Gurdjieff’s ideas gave him the idea of *essence classes*. Putting these two together was a master stroke. (Incidentally, it was closely paralleled by his relating the energies of natural science to psychological energies and also to the idea of the ‘divine operations’ of the Eastern Church.) The systems 5-8 evoke the sense of *living* systems. They appear to be more individualised and unique. And they seem to require a more specialised creation.

There is a story about how Bennett came to the Octad. When he met Idries Shah, the latter was claiming to represent the source of Gurdjieff’s teaching and, naturally enough, Bennett asked him about the enneagram. Shah dismissed this to one side, claiming that the Octad was of greater importance in Sufi tradition. In typical style, Bennett went away and thought about this and consequently produced his complex interpretation of the eight-term system. His explanations are nowhere to be found in any Sufi document!

As far as the *hexad* is concerned, Bennett added to it greatly by associating it with *events* and with the *present moment*. He also added value to the *heptad* by seeking to integrate its two aspects – akin to a spectrum on the one hand and a sequence of steps on the other – discernible in Gurdjieff’s writings. Both these systems became embodiments of diverse ideas brought together in new ways. It is also important to note that particularly in his treatment of the heptad, he was addressing different ways in which we can interpret any system; since every system can be seen in both ways as we touched upon in talking about the game of sequence.

The vertical resonances suggested in the table above are suggestive. In Bennett’s writings they appear in manifold ways. In one, for example, the principles of the *triad* are developed to give a

*heptad* of seven worlds of will. In another, he spoke of the pentad as yielding the 'name' or essential character of the monad. The duality of fact and value is replaced by the coalescence of the hexad as the present moment. The octad is seen as two tetrads. And so on.

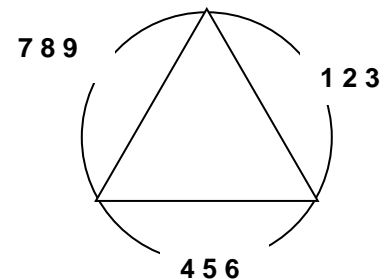
It is interesting to reflect that the period of systems 5-8 can be seen as disturbances of the previous ones, 1-4. A metaphor for the pentad is that of the grit in an oyster from which a pearl can grow. They raise new questions and show the previous systems to have been incomplete. The third period contains the systems in which *intervention* on our part is needed.

We must remember the thesis that different people have different temperaments or capacity and hence that the N in SET<sup>N</sup> is different for different people. This has been discussed by Arnold Mindell, a Process psychologist. Even though the higher term systems for any N may be directly addressed, nevertheless they have an influence. The N set is like a framework. At the lowest level, if it is possible for someone to make a move into a higher term system this is different from not being able to do so. In the latter case, it leads to efforts to 'recycle' lower term systems to accommodate complexities rather than think in different parameters.

The grid form used in the table is significant. It is not an obvious symbol. It is a reversion to the simplicity of sets and counting. We can give two examples which show how this form can influence thinking about systems.

The first concerns the nine-term system. Instead of using the enneagram symbol we can show the set of numbers (which can be taken not just as terms in a sequence but as also representative of the systems the numbers represent) as follows:

7	8	9
4	5	6
1	2	3



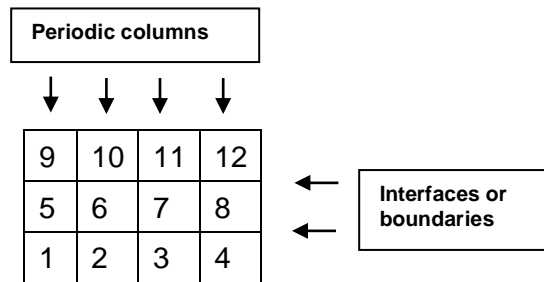
Looking horizontally, we see a division between three sets. These divisions are 'located' in correspondence with the idea of three octaves or processes, which Gurdjieff spoke about in relation to the enneagram.

Looking vertically, there are three sets of three also. In Richard Knowles' book *The Leadership Dance* he describes three types of leadership in terms of these three sets. Strategic leadership' corresponds to equates to 1-4-7, 'control and command' to 2-5-8 and 'leadership in self-organization' to 3-6-9.

Thus, the simple grid contains much of the significant information of the enneagram symbol.

The next example is taken from Bennett's *The Dramatic Universe Vol. I* where he presents twelve levels of existence. He groups these into three sets of four: the mechanical, the living and the cosmic. The simple table of the levels shown here suggests divisions or boundaries between the sets and, in fact, he proposed that there were critical transition regions between them. The first between 1-4 and 5-8 he called 'active surface' and for the second between 4-8 and 9-12 he used the term 'biosphere'. In an analogous way, the region between 9-12 and 1-4 might be called 'creation' (boundary condition of 'our' universe).

These examples illustrate the principles of *periods* and *boundaries*. The periodic principle says that a form can recur at various levels or depths. The boundary principle means that transitions from one period to another have interfaces between them.



Bennett himself had a similar notion to SET<sup>N</sup> in his concept of *construction*: “A **construction** can be understood as a situation where the *mutual relevance of systems* is significant.” (DU Vol III p. 230). According to Bennett, systems are the *most abstract* representations of structure we can have. Structures can be seen in terms of combinations of systems, which then include such things as the *enneagram* (and N-grams in general).

SET<sup>N</sup> jumps from previous games into three levels of meaning:

1. The terms of the systems
2. The systems
3. The structure of the systems

and all three are mutually involved with each other.

The SET<sup>N</sup> format of a matrix of all the systems of a given range of systems is only the general case of structure and can be considered more properly as *framework*. In any specific case, some systems will be ‘stronger’ or ‘more relevant to the purpose’ than others. As we saw, structure enters in when there is a breaking of symmetry. As specificity becomes important – the ‘more than’ general – structure becomes more complex but, at the same time, its *elements* become more significant.

## SIGNIFICANCE

In the previous games, the emphasis was on the terms as determined by the systems, in that the number of the system was primary. In the game of Significance, the relation is inverted and it is the content of the terms that becomes primary. This can also be thought of as a ‘bottom-up’ approach because it starts from raw material and builds into structures.

The game begins with thinking about what other complex wholes are relevant to a given one. It is like considering the family or kin of the given whole. Later on, we will be taking systematics as the complex whole in question and then looking for kindred disciplines or ways. If we were to take a critical experience in our lives as a start, then we would look for other experiences. Whatever the nature of the given complex, we look for other things that are similar to it in kind. We also look for *significant* items that have their own power and depth.

This leads us to the technical term ‘molecule of meaning’ (MM). This term was chosen to describe significant elements that have strong meaning in their own right, without any reference to any system. MMs are not ‘terms’ because we do not begin with any system. MMs lead us to structures, while systems lead us to terms. When we assemble MMs, we are paralleling the making of a monad. The two are complimentary in many ways. In making a monad we ‘flesh out’ what we are thinking about, finding what it contains; while in assembling MMs, we explore what it relates to (the ‘family’ to which it belongs). The idea of a ‘molecule’ of meaning is that it

is a whole world or monad in its own right and could, in principle, be transformed into systems of its own.

When there is a group of people, each will have their own repertoire of MMs. Ones chosen by one person may be unfamiliar to the others. The experience and knowledge of an MM may widely differ amongst the members of the group. It follows that, in the assembly of MMs there can be much discussion, explanation and illustration. For convenience, MMs are usually stated briefly and often consist of just a *name*. Again, one person may see a strong mutual relevance between a given MM and the initial one (which in our game was systematics) while others may not.

In both basic systematics based on terms and structural thinking based on MMs we look for ways of understanding something in terms of what it is related to. In basic systematics (the first three or four games) we look for internal relations while in structural thinking (the next three games) we look for external relations. However, the distinction between internal and external should not be rigid; the one informs the other. They both share in the property of finding understanding through mutuality.

Sense of mutual relevance is the underlying source of method. We do not translate one thing into a composition of other things but look for their *mutual* relevance. The principal game is to bring apparently disparate elements together to enable a new meaning that can lead us into understanding. It is an art.

We can consider the assembly of MMs to make a 'mosaic' or 'fabric' and use other such metaphors, but only if we are also able to change the relative positioning of the MMs to each other. The process is like weaving rather than cutting up material. If we imagine the MMs in the state of mutual relevance, then certain possibilities emerge:

1. The MMs correct for the defects and biases of each other. This is one of the major potentials of the *dialogue process* in general.
2. Their juxtaposition draws attention to mutual relevance, rather as the interactions between particles can be seen as arising out of a 'field'. The meaning of mutual relevance is beyond the meaning of the separate MMs. It is more subtle; perhaps more like a feeling than a concept.
3. Each MM leads into and out of the others. There is a movement and/or 'energy' of this movement. It is this 'energy' that makes possible new ways of thinking.

A good example of this game from the realm of group analysis is the *social dreaming matrix* as developed by Gordon Lawrence. In this process, the MMs are dreams reported by members of the matrix. These dreams are not taken as material peculiar to the persons who had them but as source material for the thinking of the group as a whole. By association and amplification, the mutual relevance of the dreams is brought out and often leads to new thinking about a situation relevant to them all. It is clear that the MMs in this example are often rich and complex. And it is also clear that it is by looking into their mutual relevance that something new can emerge rather than by taking them one by one.

The first of the three possibilities outlined above has a special case of some significance. This is when nearly all of the MMs *cancel each other out* leaving only a few or even just one. The overwhelming tendency is to add and accumulate and to operate by cancellation is rare. Yet its importance is evident in any investigation which is looking for specific answers.

## SERENDIPITY

Serendipity is the 'happy accident' of two or more things coming together that gives a new insight. In this game, we have to provide some means for MMs to be brought into conjunction. This is the 'game board' for which the MMs are 'pieces' to be positioned and moved. The

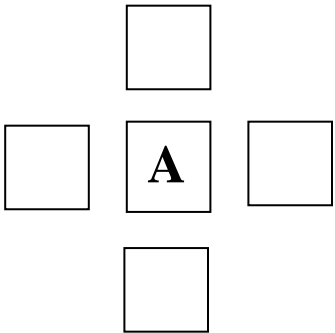
structure of the game board can be arbitrary or involve just a few elementary considerations. The two main features of the game board are:

- 1. The number of positions. If the set of MMs is 100 and the number of places only 10, this is too big a limitation. In broad terms, the number of places should be at least half the number of MMs. There will be a dynamic relation between the subset of MMs that are brought into play and the remaining subset of those that are not.
- 2. The shape of the game board is important. This relates to the number of players. A triangular board suits three players, while a square one suits four players. Rectangular grids are useful for many players.

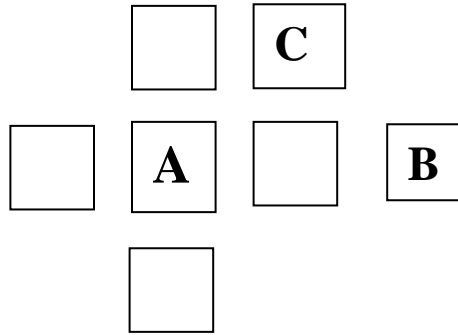
Placing an MM on a grid makes a representation of its mutual relevance with other MMs already in position. Replacing one MM with another signifies that it is regarded as less mutually relevant than its replacement. There are two main considerations. First of all, whether an MM should be in the game or not. Secondly, *where* it should be in relations to the others.

Representing – and evoking – mutual relevance by relative positioning is called *toponomics* (topos – place, nomos – rule). We may want to have some kind of grammar to tell us what to do; but it is neither possible nor desirable to have such. *We do not have to know what the rules are in advance of actual play.* Instead, we discover them as we go; and may never be able to spell them out. This is not mysterious because the playing of the game entails a dialogue that reflects in consciousness the underlying unconscious process of making and applying rules. *It is a self-organising process.* Indeed, playing such games is a good way of experiencing and reflecting on self-organisation in human systems.

There are some explicit rules to define what an allowable move in the game is. These will be discussed when we describe the particular game we played at the Gathering. But it is important to bear in mind that the few simple and explicit rules leave completely open the higher level rules that come into operation when we ascribe meaning to the relative positions of MMs on the game board. Part of this is easy to grasp in general terms. The diagram shows MM A and four other MM positions. We can explore by experiment or implication various types of meaning according to whether an MM is above, below, left or right relative to A.



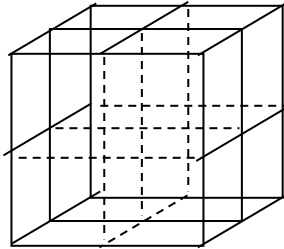
Then we might look further to the possible meaning of the placement of MMs such as B and C in relation to A. These meanings are more ‘triadic’ in that they involve yet other MMs and not just A.



In discussing the game of Sequence, we introduced the significance of between, ratio and interval. The game of Serendipity brings these to the fore. Our placement of MMs in relation to each other reflects (implicitly) our evaluation of relative meaning. We look for what can be placed *between* A and B (see diagram above) so that it is not biased towards either but is 'in the middle' of them. At the same time, this placement alters our perception of the meaning of A and B.

Thus it is that, from relatively primitive feelings for the representation of the mutual relevance of two MMs, we can build into an understanding of the mutual relevance of three or more MMs.

Also, by utilising a two-dimensional representational space, we introduce a multiplicity of directions of mediation, which radically distinguishes what we do here from the game of Sequence, which is played in only a one-dimensional space. In principle, we could at least make use of three-dimensional representational space, perhaps as shown below, where there are 27 'places'. In practice, however, this would be difficult to handle: how would we place MMs; how could we read them, and (as we shall see in the next game) how could we change the structure as the game developed?



By being forced to place MMs in a restricted way (on a game board increasingly occupied by MMs) we can 'accidentally' produce conjunctions that suddenly yield new insights. There is a quasi-sequence:

Primitive mutualities – Complex mutualities – Serendipities

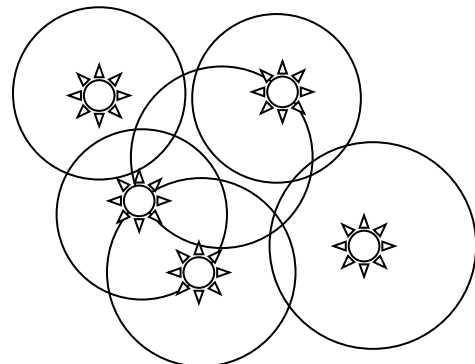
A serendipity will tend to change the sense of the total configuration, because it 'concentrates the energy of the game' in a new way. In other words, insights come into play which act as organising influences on

the structure and dynamics of the game play. In our description of the game we played on understanding systematics we will point out some of the serendipities that emerged.

## SYNERGY

Though we begin with a certain game board such as a grid, this is not binding or fixed. The games we are looking at now are, as we said, of a 'bottom-up' kind. This means that *the content drives the form*. The shape of the game board can change as the game develops (see Appendix 2 for a brief description of types of *action*, as defined by Bennett in *The Dramatic Universe Vol. IV*, which will explain more about the levels of game play of which 'development' is one).

A structure can emerge out of the interplay of various organising complexes arising from serendipity. These complexes are centred in regions of the game space which have begun to self-organise in their own right.





One version of this state of affairs is that the different self-organising regions represent different *systems*. The Synergic game is then to combine the various systems into a structure in which each its place. This can be seen as a recurrence of the game Set<sup>N</sup>. But, instead of having a simple grid to 'contain' the systems, we have the systems *working together* (= synergy) to 'agree' on an integrative structure.

What is now foremost in the players' mind is the emergent *shape of the game*, or structure. We may have started with an arbitrary game board, but this now evolves into a new design that expresses the *meaning of the whole*.

The new design will have an archetypal character of its own, perhaps an organic form such as that of a tree or the human body. It will embody the group's realisation of itself. In a strong sense, it will mirror what the people have brought to the game, though now in a relatively conscious form.

## SOCIETY

If we ordered the various games according to Gurdjieff's idea of the *octave* we would have:

Do' SOCIETY  
 ---  
 Si SYNERGY  
 La SERENDIPITY  
 Sol SIGNIFICANCE  
 Fa SET<sup>N</sup>  
 ---  
 Mi SYMMETRY  
 Re SEQUENCE  
 Do SET

where the marks between Si and Do' and between Mi and Fa signify critical transitions or changes in character. The transition to the eighth game could then be a major one. We said that the previous games were a new beginning in being (a) based on MMs and not terms, and (b) concerning structures rather than systems. The new kind of step restores us to the beginning (Set) but in a radically new way, which nevertheless relates to the previous game in its possibility of producing a 'self-realisation' of the group.

Bennett himself proposed that *societies* would come after structures which, in their turn, came after systems (see Appendix 3). The movement is towards greater *concreteness*. This word cannot be equated with materiality. To put it in a terse and enigmatic way, concreteness has more to do with *will* than with matter. For this reason, we propose that the game of Society concerns individuals. In the first games, we had *terms*, in the next series *MMs*, but now we have *individuals*. A fourth level of *events* is also included which will be explained in the next section.

SYMBIOSIS	EVENTS
SOCIETY	INDIVIDUALS
STRUCTURE	MMS
SYSTEM	TERMS

The togetherness of individuals is a *communion* (see Blake-Blake theory below). It is formed by the agreement of the individuals to be together and precedes any process, interaction or negotiation. An important aspect of this theory (from *theoria* – to see, related to ‘theatre’) is that any group of people coming together *for* dialogue implies such a communion even when it neither becomes conscious nor manifest in the course of the activity of dialogue. In other words, even when people actualise in argument and stupidity they nevertheless ‘imply’ a communion. In a way, the communion is more real than their actual behaviour. Bennett himself often placed great emphasis on the difference between actualization (in observable behaviour) and realisation (to be known only through participation).

Every society (in these terms) is unique because not only is it a case of consisting of a certain *number* but also of its *unique* members. This relates to the idea of the systems as best symbolised in the transfinite numbers. The members of a society are transfinite in quality. They are not terms. They go beyond relations. It may well be that the realisation of true societies is extremely rare and that when they come about they *create archetypes*. Instead of thinking about systematics along the line of general laws, it is possible to understand it more in terms of a reflection of unique forms. Societies are ‘more than creative’ and can be associated with Bennett’s concept of the *unitive energy*, or the theological idea that *the medium of the will is love*. Here we might also remember Bennett’s comments on sex in the book of that name, where he refers to the *beits* or ‘dwellings’ which are degrees of union. It is possible that *music* provides the best medium for understanding this game, as in terms of harmony. The roots of the word ‘harmony’ relate to fitting together and it is closely related to *arithmos* or ‘number’, since numbers both set things in order and fit them together.

Our concept of the game of Society is intended to be approached as a limit or ultimate extrapolation from the maximum extension of both individuality and wholeness. In this way we see that we have come to a stop or limit in our scale of understanding. Any games beyond Society will therefore be implicated in it and we cannot distinguish them. What follows is then merely an abstract exercise, which may or may not lead to substantive insights in the future.

## SYMBIOSES

In moving to Significance we made a something of a fresh start, introducing MMs and structures in place of terms and systems. We implied a Kenning game (see under game of sequence above) in that

systems : terms = structures : MMs

We might think of yet another new beginning now, especially since Bennett tended to speak, though in vague terms, of a transition beyond societies to symbiosis and history. The Kenning game is extended to read:

systems : terms = structures : MMs = histories : events

The word *symbioses* is used here to give a name to the next four hypothetical games, but we expect them to realise ‘structural history’, culminating in a *fully intentional history*.

SYNCHRONICITY

SACRIFICE

SACREDNESS

SUPERNAL

The theme of structural history lends itself to describing this realm in terms of *events* instead of MMs or terms, and *history* instead of structures or systems. *Symbiosis* is then a word for the mode of operation that renders events into history, our usage differing somewhat from

Bennett's (see Appendix 4) and emphasising the time-like character of this domain of realisation.

We leave the series of games in this vaguely suggestive way because we do not know how to play the higher games, if they exist at all. There are many powerful associations to explore, such as to the Abode of the Gods or the Hidden Directorate. These are mentioned because Bennett alluded to *histories* as coming after societies. The higher games would constitute what we might call 'higher intelligence'. An important suggestion lurking in systematics is that *the higher systems we are not able to operate with are still real but in the domain of higher intelligence*. We experience and understand in a bandwidth of meaning. It is somewhat removed from the realm of life and also from what Bennett called *Demiurgic Intelligence*.

In the table below, we label the second level of games as 'dialogues' because these are games requiring several players which bring into play the potentials of mutual relevance. The progression to the hypothetical third level dissolves the distinction between elements and mutual relevance. The first level designation 'models' relates to Bennett's attempts to distinguish various kinds of collectivity (see Appendix 3 and 4).

An implication of putting 'events' beyond 'individuals' is that symbiosis (in the very special sense we are using that term) concerns the making of a total human soul: history is the way we contribute to and participate in That.

<i>Origins</i>	<i>Separations</i>	<i>Patterns</i>	<i>Integrations</i>	
<b>SYNCHRONICITY</b>	<b>SACRIFICE</b>	<b>SACREDNESS</b>	<b>SUPERNAL</b>	<i>Symbioses</i>
<b>SIGNIFICANCE</b>	<b>SERENDIPITY</b>	<b>SYNERGY</b>	<b>SOCIETY</b>	<i>Dialogues</i>
<b>SET</b>	<b>SEQUENCE</b>	<b>SYMMETRY</b>	<b>SET<sup>N</sup></b>	<i>Models</i>

To illustrate the third level of systematics, we adduce the main propositions from our "Blake-Blake Theory of Communion"

**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.

(see [http://www.duversity.org/articles/theory\\_of\\_communion.doc](http://www.duversity.org/articles/theory_of_communion.doc) for the article as published in the *DuVersity Newsletter*).

## OVERVIEW

This overview is written in a peculiar way, extending the large measure of reference in quotations and appendices used so far to an even more tightly linked presentation of ideas about systematics with cited expositions of meanings related to systematics. We begin with considering the 'bases' or essential ideas encoded into systematics and then follow this with a section on its 'familial' associations. For someone serious about the subject, the material should be linked with the Compendium presented on the web site [www.systematics.org](http://www.systematics.org) which gives links to a large range of associated methods and thinkers.

This approach provides an amplification of the meaning game played at the Gathering and reported in Part two. It does this by linking what is 'within' systematics to other methodologies 'outside' it.

### Number as limitation

Systematics was based on number in the form of the integers. On the quantitative side, number provides *limitation*. In ancient Greek thought, Limit or *peiron* produced cosmos out of chaos, the Unlimited or *apeiron*. Bennett himself interpreted the 'without form and void' of *Genesis* as an unlimited plenum of orders – imagine pattern upon pattern applied without limit one on top of each other – and the Act of God – the *Fiat* – as a *reduction* of such plenitude of order to enable existence of any kind, from which universe, life, mind and so on could become possible. Thinking this way round is now unusual. Instead, we tend to think in terms of building things up by accretion. To think in terms of reducing, limiting, inhibiting, etc. to produce what can be known (and a knower) needs an inversion of perspective; and what we usually take to be 'nothing' has to be seen as 'more than everything'. The duality of Limit and Unlimit is a classical dyad.

Aristotle explains how the Pythagoreans (by which he meant the circle around Philolaus) developed Anaximander's ideas about the *apeiron* and the *peiron*, the unlimited and limited, by writing that:

"... for they [the Pythagoreans] plainly say that when the one had been constructed, whether out of planes or of surface or of seed or of elements which they cannot express, immediately the nearest part of the unlimited began to be drawn in and limited by the limit."

Continuing with:

"The Pythagoreans, too, held that void exists, and that it enters the heaven from the unlimited breath – it, so to speak, breathes in void. The void distinguishes the natures of things, since it is the thing that separates and distinguishes the successive terms in a series. This happens in the first case of numbers; for the void distinguishes their nature."

When the *apeiron* is inhaled by the *peiron* it causes separation, which also apparently means that it "separates and distinguishes the successive terms in a series." Instead of an undifferentiated whole we have a living whole of inter-connected parts separated by "void" between them. This inhalation of the *apeiron* is also what makes the world mathematical, not just possible to describe using math, but truly mathematical since it shows numbers and reality to be upheld by the same principle: both the continuum of numbers (that is yet a series of successive terms, separated by void) and the field of reality, the cosmos - both are a play of emptiness and form, *apeiron* and *peiron*. What really sets this apart from Anaximander's original ideas is that this play of *apeiron* and *peiron* must take place according to *harmonia* (harmony), about which Stobaeus commentated:

"About nature and harmony this is the position. The being of the objects, being eternal, and nature itself admit of divine, not human, knowledge – except that it was not possible for any of the things that exist and are known by us to have come into being, without there existing the being of those things from which the universe was composed, the limited and the unlimited. And since these principles existed being neither alike nor of the same kind, it would have been impossible for them to be ordered into a universe if harmony had not supervened – in whatever manner this came into being. Things that were alike and of the same kind had no need of harmony, but those that were unlike and



## Qualitative mutuality

Bennett's core definition of system is:

*A system is a set of independent and mutually relevant terms*

I translate this into the following:

*A system is a system of systems*

to render the idea entirely in terms of system and avoid the use of additional concepts. However, in Bennett's definition we find the ancient idea of the single principle depicted as a trinity; in this case, the idea of system represented as Set, Mutual relevance, and Terms.

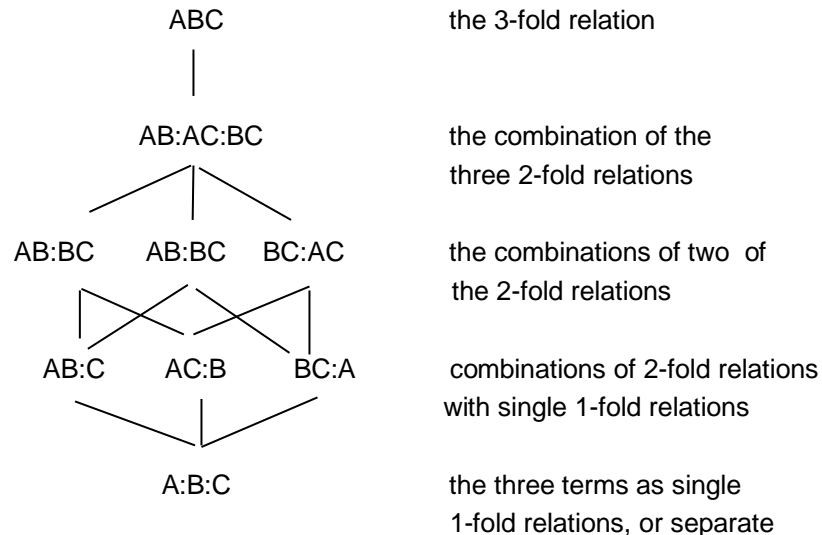
The character of independence points to an individuation and qualitative distinction of terms that actually transcends any classical set. It says that not only can we *count* the number of terms but can also discriminate amongst them qualitatively.

The qualitative aspect is then enlarged by the requirement of mutual relevance. Though not spelled out in the definition, it leads us to look at every possible conjunction of terms as having its own meaning. This has been articulated by the use of Reconstructability Analysis (see below) where we can calculate the various possibilities in a formal sense - but then have to 'give' them meaning. In doing so, we might find ourselves doing peculiar things such as thinking about the 'fractions' of a quality: if a system has a certain attribute, then can this decompose into sub-attributes, associated with different mutualities and terms?

A relation of N terms can be decomposed in down to a set of N separate terms through a series of stages involving relations of less than N terms. This means that multi-term systems of order N can be distinguished into many different forms by a precise method. A simple approximation is to consider what are called 'partitions', that is various ways of producing a given number. In the case of the triad there are 3:

$3 = 3 = 2 + 1 = 1 + 1 + 1$  but the number of decompositions is many more.

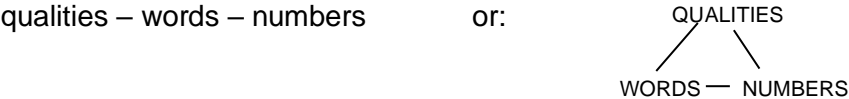
In the case of the tetrad there are 114 possibilities but those for the triad are much less: there are 9 different possible forms. These are shown below, with an explanation.



*The Triad* by Anthony Blake, Appendix Four

The terse answer is – No. It seems impossible to calculate with qualities. Though we should remember that in general we deal with qualities in words and quantities in numbers and it may

be possible that there is a 'hidden logic' in language reflecting deep structures of qualitative relationship, as Benjamin Lee Whorf supposed. In which case, we bear in mind the linkage:



Words of course appear in sentences or related together and rarely in isolation. As Whorf points out, there is no such thing as a fixed meaning for a word. Words signify *language* as numbers signify *mathematics*. When we say something, we are not just adding up words to make a statement but evoking patterns of meaning. In some allied fashion, when we entertain an idea it is already implying relations in which it might appear as a term in many systems.

Without a serial or hierarchical order in the universe it would have to be said that these psychological experiments and linguistic experiments contradict each other. In the psychological experiments human subjects seem to associate the experiences of bright, cold, sharp, hard, high, light (in weight), quick, high-pitched, narrow, and so on in a long series, with each other; and conversely the experiences of dark, warm, yielding, soft, blunt, low, heavy, slow, low-pitched, wide, etc., in another long series. This occurs whether the WORDS for such associated experiences resemble or not, but the ordinary person is likely to NOTICE a relation to words only when it is a relation of likeness to such a series in the vowels or consonants of the words, and when it is a relation of contrast or conflict it is passed unnoticed. The noticing of the relation of likeness is an element in sensitiveness to literary style or to what is often rather inaccurately called the "music" of words. The noticing of the relation of conflict is much more difficult, much more a freeing oneself from illusion, and though quite "unpoetical" it is really a movement toward Higher Manas, toward a higher symmetry than that of physical sound.

What is significant for our thesis is that language, through lexation, has made the speaker more acutely conscious of certain dim psychic sensations; it has actually produced awareness on lower planes than its own: a power of the nature of magic. There is a yogic mastery in the power of language to remain independent of lower-psyche facts, to override them, now point them up, now toss them out of the picture, to mold the nuances of words to its own rule, whether the psychic ring of the sounds fits or not. If the sounds fit, the psychic quality of the sounds is increased, and this can be noticed by the layman. If the sounds do not fit, the psychic quality changes to accord with the linguistic meaning, no matter how incongruous with the sounds, and this is not noticed by the layman.

*Language, Thought, and Reality* by Benjamin Lee Whorf , p. 267

**Basis in Nature**

Reference to words and language will rightly conjure up the relevance of culture, social conditioning, world views and the like to the way we read experience and make use of any kind of system. But there is yet another kind of factor, which stems from observation of the natural order. This was strongly emphasised by Gurdjieff in his mythological stories about discovering 'cosmic laws' as written in *Beelzebub's Tales*; including such things as the formation of crystals and the distillations of opium. Also, as some contemporary physicists agree, the basic phenomenon of structure 'instructing' us is the physical body. Whether as natural processes, landscape or the human body the realm of physical nature is the foundation of our understanding.

Of course, whether we 'read' the psyche internally as is supposed in introspection or meditation or the world externally through our senses and observation must draw ion the same powers.







One need only think of the meaning of the *four seasons* to see how intrinsic to our nature this is. Nature provides the yearly changes we observe, which we divide (for the most part) into four and give them special names, which seasons then discriminated and named become archetypal in our understanding of universal qualities. The seasons come into calendars, which stem from calculations reflecting the celestial sphere. Perhaps the major influence on developing the 'number of quality' has come since ancient times from astronomy, now studied as *sacred number*. Such 'number' is of course number ascribed qualitative significance.

THE FOUNDATION OF ANY CALENDAR is the perceived movement and changing relationship of our world relative to its surrounding cosmos. Over several millennia, humankind has imposed upon this seemingly cyclical march a meaning: a story has been envisioned in the dance of heaven, a drama of redemption has been read in the bright/dark spinning of earth, moon, sun and stars. In actuality, of course, this story derives not from the vastness of heaven, but from the center of our own being. The liturgical cycles mankind has marked in time with festivals and calendar seasons, can usefully be examined as reflections of our own interior landscape: they originate within us, and are projected outward from their true source in the human soul.

Aided by the terminology of Jungian depth psychology, the modern Gnostic might regard the quaternary (or "fourfold") structure of the cross as a symbol of wholeness and completion. This ancient manner of ordering the world -- represented also by the four seasons, the four traditional elements, the four points of a compass -- is but a reflection of an archetypal balance within human consciousness, suggested C. G. Jung. This four-fold image of the cross seems to have also found a natural reflection in the Christian liturgical calendar. To the individual striving for an increase of consciousness and personal integration, the ritual life of the Ecclesia offers an ancient mandala of wholeness. In the calendar of the Ecclesia there resides a legacy of wisdom, and a tool of transformation.

Consider the ecclesiastical calendar as a landscape over which we journey year by year. The festivals celebrated in the calendar are features that mark our way, and guide our return. Now, map this landscape with a compass. Let a horizontal beam stretch out across the horizon, separating above from below: summer from winter. Then imagine a vertical beam ascending from earth to heaven, cleaving right from left, and separating spring from fall.

In the temporal realm above the horizontal division of this mandala, there resides (metaphorically) the summer solstice and its season of intense light. Below the horizon-line, opposed to the light, abides the season of the winter solstice with its cold and dark -- images of death and unconsciousness. Thrusting across this horizontal division of light and dark, a vertical axis marks a second pair of opposites: the live-giving dawn of spring is juxtaposed with the dusk of autumn and the preparation for death. (It must of course be remembered, that this church calendar took first form in a temperate, northern climate marked by flux of these seasonal variations.) Thus, the yearly ecclesiastical calendar is like the cycle of a human life, or the turning of a day: a journey betwixt light and dark, dusk and dawn. It is a cycle of consciousness reaping realization from the unconscious, rising to the light, and then passing again back to the dark source.

[http://www.gnosis.org/ecclesia/cal\\_mandala.htm](http://www.gnosis.org/ecclesia/cal_mandala.htm)

### The Aesthetics of Systematics

The qualitative and the quantitative merge in the realm of aesthetics. Indeed, we might well regard systematics as an *art*, rather than a science. At the very least, the use of a very limited number of elements enables us to contemplate what may be complex with equanimity. There is a 'visual' dimension of systematics simply to do with laying out a structure of elements in a satisfying and accessible way. We referred to this in talking about the 'game of symmetry' (see p. 84 above). It is too facile to regard this as merely a subjective feature of human

consciousness. Scientists continue to talk about the heuristic principles of beauty and elegance even though no one knows how to define these terms in such a way that it can lead to truth in any certain way. Wandering in this realm expecting to find truth is hazardous: what appeals to us as a satisfying picture may leave out what really matters. Aesthetics is not static and what first appears to us as discordant may be resolved in the future by appreciating a deeper order of harmony. Belief that there are 'laws' of aesthetics is reactionary, just as are beliefs in 'laws' of morality.

The aesthetics of mathematics are often compared with music and poetry. Hungarian mathematician Paul Erdős expressed his views on the indescribable beauty of mathematics when he said "Why are numbers beautiful? It's like asking why is Beethoven's Ninth Symphony beautiful." Math appeals to the "senses" of logic, order, novelty, elegance, and discovery. Some concepts in math with specific aesthetic application include sacred ratios in Geometry, the intuitiveness of axioms, the complexity and intrigue of fractals, the solidness and regularity of polyhedra, and the serendipity of relating theorems across disciplines.

Cognitive science has also considered aesthetics, with the advent of neuroaesthetics, pioneered by Semir Zeki, which seeks to explain the prominence of great art as an embodiment of biological principles of the brain, namely that great works of art capture the essence of things just as vision and the brain capture the essentials of the world from the ever-changing stream of sensory input.

[http://en.wikipedia.org/wiki/Aesthetics#Visual\\_arts](http://en.wikipedia.org/wiki/Aesthetics#Visual_arts)

Some mathematicians are of the opinion that the doing of mathematics is closer to discovery than invention. These mathematicians believe that the detailed and precise results of mathematics may be reasonably taken to be true without any dependence on the universe in which we live. For example, they would argue that the theory of the natural numbers is fundamentally valid, in a way that does not require any specific context. Some mathematicians have extrapolated this viewpoint that mathematical beauty is truth further, in some cases becoming mysticism.

Pythagoras (and his entire philosophical school of the Pythagoreans) believed in the literal reality of numbers. The discovery of the existence of irrational numbers was a shock to them - they considered the existence of numbers not expressible as the ratio of two natural numbers to be a flaw in nature. From the modern perspective Pythagoras' mystical treatment of numbers was that of a numerologist rather than a mathematician. In Plato's philosophy there were two worlds, the physical one in which we live and another abstract world which contained unchanging truth, including mathematics. He believed that the physical world was a mere reflection of the more perfect abstract world.

Galileo Galilei is reported to have said "*Mathematics is the language with which God wrote the universe*", a statement which (apart from the implicit deism) is consistent with the mathematical basis of all modern physics.

Hungarian mathematician Paul Erdős, although an atheist, spoke of an imaginary book, in which God has written down all the most beautiful mathematical proofs. When Erdős wanted to express particular appreciation of a proof, he would exclaim "This one's from the Book!". This viewpoint expresses the idea that mathematics, as the intrinsically true foundation on which the laws of our universe are built, is a natural candidate for what has been personified as God by different religious mystics.

In some cases, natural philosophers and other scientists who have made extensive use of mathematics have made leaps of inference between beauty and physical truth in ways that turned out not to be confirmed. For example, at one stage in his life, Johannes Kepler believed that the proportions of the orbits of the then-known planets in the Solar System had been arranged by God to correspond to a concentric arrangement of the five Platonic solids, each orbit lying on the circumsphere of one polyhedron and the insphere of another. As there are exactly five Platonic solids, Kepler's theory could only accommodate six planetary orbits, and was disproved by the subsequent discovery of Uranus. James Watson made a similar error when he originally postulated that each of the four bases of DNA connected to a base of the same type in the opposite strand (thymine linking to thymine, etc.) based on the belief that "it is so beautiful it must be true."

[http://en.wikipedia.org/wiki/Mathematical\\_beauty](http://en.wikipedia.org/wiki/Mathematical_beauty)

## Enigma of Purpose

The mention of morality brings us to consider purpose. In a sense, purpose is always destructive because it asserts that the given system is *for* something and if that something arises, the system no longer has value. Purpose tends to overcome aesthetics as if reflected in social life where business forces dominate over valuing things 'for their own sake'. Such an attitude underlies Checkland's 'soft systems' approach.

- (1) focus on the fact that all management problem situations contain people trying to act purposefully; model purposeful activity;
- (2) accept that one observer's 'terrorism' is another's freedom fighter; make models according to a pure, declared worldview;
- (3) establish a learning process by using a number of such models to structure debate about change, by using the (pure) models to question the (messy) situation; the debate seeks the accommodations between conflicting view points which enable 'action to improve' to be taken;
- (4) turn activity models into models related to information support for purposeful action.

SSM thus "aims to bring about improvement in areas of social concern by activating in the people involved in the situation a learning cycle which is ideally never-ending" (von Bulow).

And:

Hard systems thinkers choose to see the world as systemic (hence: SE, RANDSA, Classical OR etc); soft systems thinkers choose to see the world as problematic, but believe that the process of inquiry into the world can be organized as a learning system. . .

*Soft Systems Methodology – a 30 year retrospective*, Peter Checkland

This gives no value to appreciating 'what is' (though it speaks of an 'appreciating system' of learning). Whatever the situation, it will have its measure of harmony on its own terms and to aim to bring about change – to improve things – means to destroy or over-ride that harmony. It lends itself to regarding the natural world around us as an object of exploitation, seeking to transform natural energies into human ones.

Yet, a kind of purpose was suggested in Bennett's systematics and even starkly defined as *progress*. This was the inherency of any system to evolve or transform into a higher one. And it was an essential part of the world view Bennett inherited from Gurdjieff and others (such as Peirce, Bergson, and Whitehead). The meaning of *world view* is paramount: this is the underlying story or myth or paradigm governing how things are valued and prioritized, including of course what is taken as 'real', 'good' and 'satisfying', etc. Hence world views are 'religious' in character and can effect aggressive and conflicting claims. In fact, it is mostly difficult for people to 'declare their world view' and make themselves transparent in this regard.

The influence of purpose is exhibited when a given systemic image of a situation is taken to be 'true' and certainly when a systemic image is used to express a desired future that can be brought about by action. However, the close relation of purpose with action means that any systemic image in the end is liable to be reduced to either a single act or a collection of acts, in both cases collapsing the systemic integrity of the image.

Theodicy claimed that history had a progressive direction leading to an eschatological end, given by a superior power. However, this transcendent teleological sense can be thought as immanent to human history itself. Marx, as Auguste Comte, may be said to have an immanent teleological conception of history; although Althusser has argued that discontinuity is an essential element of Marx's dialectical materialism, which includes historical materialism. Thinkers such as Nietzsche, Foucault, Althusser or Deleuze deny any teleological sense to history, claiming that it is best characterized by discontinuities, ruptures, and various time-scales, which the Annales School had demonstrated.

Schools of thought influenced by Hegel and Marx see history as progressive, too — but they saw, and see progress as the outcome of a dialectic in which factors working in opposite directions are over time reconciled. Hegel argued that history is a constant process of dialectic clash, where one idea or event will form the thesis, an opposing idea or event will be its antithesis, and the clash of the two will result in a synthesis. In synthesis, neither the thesis nor the antithesis is destroyed, but the prevailing moment

will reflect a conjunction of the two; the contradiction is sublated. History was best seen as directed by a Zeitgeist, and traces of the Zeitgeist could be seen by looking backward. Hegel believed that history was moving man toward "civilization.", and some also claim he thought that the Prussian state incarnated the "End of History". In his *Lessons on the History of Philosophy*, he explains that each epochal philosophy is in a way the whole of philosophy; it is not a subdivision of the Whole but this Whole itself apprehended in a specific modality.

Marx adapted Hegel's dialectic to develop the materialist dialectic. He saw the struggle of thesis, antithesis, and resultant synthesis as always taking place in economic and material terms. The central contention of historical materialism is that history exhibits progress, not of a linear sort but cumulative nonetheless, and that the motive engine of this progress is the struggle over ownership and control of the means of production. Ideas and political organizations were the result of material production and conditions of material provision and consumption. For Marx, the continual battle between opposing forces within modes of production led inevitably to revolutionary changes in economics and eventually communism, which would be the eventual recreation of an early, literally pre-historic state. Hegel and Marx are both teleological in their histories: they both believe that history is progressive and directed toward a particular end. The history of the means of production, then, is the substructure of history, and everything else, including ideological arguments about that history, constitutes a superstructure.

[http://en.wikipedia.org/wiki/Philosophy\\_of\\_history](http://en.wikipedia.org/wiki/Philosophy_of_history)

## Arts and Sciences Relevant to Systematics

These examples appeared in our meaning game (see Part Three) and are representative but not exhaustive.

### Alchemical process

Alchemy traces its roots back to the Egyptian civilisation where it emerged as a practising art and science and an expression of the Egyptian religion. Thus it was that the Egyptian Thoth, the god of mathematics and science, became the inspirational source for the Hellenistic figure of Hermes Trismegistus, who in turn became the model for the medieval Mercurius. The Greeks learned their Alchemy in the fourth century BC, whilst in Egypt. Several Greek philosophers, scientists, and mystics were initiated into the ancient Egyptian mysteries at this time. The Alchemists of the Middle Ages learnt their art from the Arabs in Spain and Southern Italy, who in turn had adopted it from the Greeks. Thus it was that by the twelfth and thirteenth centuries alchemy had already appeared in Western Europe via Sicily and Spain. Typical places of study were at the Universities of Palermo, Toledo, Barcelona, and Segovia. . .

Alchemy is best known for its belief that lead can be transmuted into gold. However, the transmutation of non-precious metals into gold is simply a metaphor for the soul being freed from a "dead, leaden state of mind," to that of realising its own light nature and that is derived from pure spirit. The alchemists believed that the basis of the material world was a Prima Materia, or prime chaotic matter, which might be actuated into existence if impressed by "form." The "forms" arose in the shape of the elements, earth, water, fire, and air. The Alchemists deduced that the limitless varieties of life were created out of the blending of the elements in particular proportions. Aristotle distinguished the four elements from one another by the four qualities of fluidity, dryness, heat and cold. Each element possesses two of these primary qualities. Thus the four possible combinations are:

hot + dry --> fire;

hot + fluid (or moist) --> air;

cold + fluid --> water;

cold + dry --> earth.

One of the two qualities predominates in each element. In earth, dryness; in water, cold; in air, fluidity; in fire, heat. Transmutation is thus possible. Any element may be transformed into another through the quality that they have in common.

. . . the sulphur-mercury theory. This theory presented the two opposed or contrary elements, fire and water, in a new way. Fire became "sulphur" and water "mercury," the former being composed of the primary qualities of hot and dry, the latter of the primary qualities of cold and moist. In general, sulphur stood for the property of combustibility, or the spirit of fire, and mercury for that of the fusibility or the mineral spirit of metals. When sulphur and mercury united in different proportions and in different degrees of purity, the various metals and minerals took shape, according to the sulphur-mercury theory. If sulphur and mercury were perfectly pure, and if they combined in the most complete equilibrium, the product would be the most perfect of metals, namely gold. Defects in purity and, particularly, in proportion, resulted in the formation of silver, lead, tin, iron, or copper. But, since these inferior metals were essentially composed of the same constituents as gold, the accident of combination might be rectified by suitable treatment and by means of elixirs.

Now we do not have to adopt the medieval alchemists' view of the physical world, but instead by interpreting it metaphorically, we can extract two very important a priori postulates which formed the basis of alchemical reasoning:

1. The unity of nature as expressed by the idea of the prima materia from which all bodies were formed and into which they might again be dissolved and
2. The existence of a potent transmuting agent capable of promoting the change of one kind of material into another. This imagined agent became known as the "philosopher's stone," the most famous of all alchemical ideas.

## **Animism**

Indeed, there has never been a time in history when the forms of order employed by a human corpus were not analogically derived from principles of world view construct. Implicit in the present assessment of the VCI is the contention that so-called primitive animism has more in common with quantum-relativistic framework laws than does sophisticated Cartesian-Newtonian physics. "Participation mystique" is the term Lévy-Bruhl coined to characterize animistic identity transparency. To use this term is to say that the spiritistic interlock between subject and object in the animistic mind establishes a transparency-of-state between the members of a population corpus, and between that corpus and its physical surround. This absence of absolute separation, of absolute distinction between the classes of identities signified by the categories "self" and "object", is what animism is; this is the defining characteristic, whether mediated by spirit beliefs or not. Such absence is also the origin of self-organized collective behaviors; spontaneous social order, that is. A transparency-of-state is likewise the defining characteristic of quantum systems exhibiting critical behaviors: at the critical Curie temperature, for instance, the correlation length between members of the elementary particle corpus goes to infinity; no matter how far removed in space the members are, their behaviors remain coherently correlated. Transit to the critical state is a quantal shift to spontaneous order, an order mediated by nonlocality and non-simple-identity, which is to say, an animistic relative-state.

*William Pensinger*

<http://www.geocities.com/moonhoabinh/honopapers/hedgehog.html>

## **Astro-archaeology**

ArchaeoAstronomy is the study of the way skywatchers of history understood and interpreted celestial objects or phenomena. ArchaeoAstronomy looks at historical systems for regulating clocks and calendars and for memorializing celestial events.

.....

We had the idea. It was simple and clear. But we realized that we would run into formidable difficulties, both from the point of view of modern, current scholarship and from the no less unfamiliar approach needed for method. I called it playfully, for short, "the cat on the keyboard," for reasons that will appear presently. For how can one catch time on the wing? And yet the flow of time, the time of music, was of the essence, inescapable, baffling to the systematic mind. I searched at length for an inductive way of presentation. It was like piling Pelion upon Ossa. And yet this was the least of our difficulties. For we also had to face a wall, a veritable Berlin Wall, made of indifference, ignorance, and hostility. Humboldt, that wise master, said it long ago: First, people will deny a thing; then they will belittle it; then they will

decide that it had been known long ago. Could we embark upon an enormous task of detailed scholarship on the basis of this more than dubious prospect? But our own task was set: to rescue those intellects of the past, distant and recent, from oblivion. "Thus saith the Lord God: 'Come from the four winds, O breath, and breathe upon these slain, that they may live.' " Such poor scattered bones, ossa *vehementer sicca*, we had to revive.

This book reflects the gradually deepening conviction that, first of all, respect is due these fathers of ours. The early chapters will make, I think, for easy reading. Gradually, as we move above timberline, the reader will find himself beset by difficulties which are not of our making. They are the inherent difficulties of a science which was fundamentally reserved, beyond our conception. Most frustrating, we could not use our good old simple catenary logic, in which principles come first and deduction follows. This was not the way of the archaic thinkers. They thought rather in terms of what we might call a fugue, in which all notes cannot be constrained into a single melodic scale, in which one is plunged directly into the midst of things and must follow the temporal order created by their thoughts. It is, after all, in the nature of music that the notes cannot all be played at once. The order and sequence, the very meaning, of the composition will reveal themselves--with patience--in due time. The reader, I suggest, will have to place himself in the ancient "Order of Time."

Preface to *Hamlet's Mill: an essay on myth and the frame of time* by Hertha von Dechend and Giorgio de Santillana

And yet the original life of thought, born of the same seeds as the Vedas, worked its way in darkness, sent its roots and tendrils through the deep, until the living plant emerged in the light under different skies. Half a world away it became possible to rediscover a similar voyage of the mind which contained not a single linguistic clue that a philologist could endorse. From the very faintest of hints, the ladder of thought leading back to proto-Pythagorean imagery was revealed to the preternaturally perceptive minds of Kircher and Dupuis. The inevitable process became discernible, going from astronomical phenomena to what might be beyond them. Finally perhaps, as Proclus suggested, the sequence leads from words to numbers, and then even beyond the idea of number to a world where number itself has ceased to exist and there are only thought **forms** thinking themselves. With this progression, the ascensional power of the archaic mind, supported by numbers, has reestablished the link between two utterly separate worlds.

The nature of this unknown world of abstract form can also be suggested by way of musical symbols, as was attempted earlier. Bach's Art of the Fugue was never completed. Its existing symmetries serve only as a hint of what it might have been, and the work is not even as Bach left it. The engraved plates were lost and partly destroyed. Then, collected once more, they were placed in approximate order. Even so, looking at the creation as it now is, one is compelled to believe that there was a time when the plan as a whole lived in Bach's mind.

In the same way, the strange hologram of archaic cosmology must have existed as a conceived plan, achieved at least in certain minds, even as late as the Sumerian period when writing was still a jealously guarded monopoly of the scribal class. Such a mind may have belonged to a keeper of records, but not of the living word, still less of the living thought.

*Hamlet's Mill: an essay on myth and the frame of time*, p. 346

## Divination

Julian Jaynes categorized divination according to the following types:

*Omens and omen texts*. "The most primitive, clumsy, but enduring method...is the simple recording of sequences of unusual or important events." (1976:236) Chinese history offers scrupulously documented occurrences of strange births, the tracking of natural phenomena, and other data. Chinese governmental planning relied on this method of forecasting for long-range strategy. It is not unreasonable to assume that modern scientific inquiry began with this kind of divination; Joseph Needham's work considered this very idea.

*Sortilege* (cleromancy). This consists of the casting of lots whether with sticks, stones, bones, beans, or some other item. Modern playing cards and board games developed from this type of divination.

*Augury.* Divination that ranks a set of given possibilities. It can be qualitative (such as shapes, proximities, etc.) Dowsing (a form of rhabdomancy) developed from this type of divination. The Romans in classical times used Etruscan methods of augury such as hepatoscopy (actually a form of extispicy). Haruspices examined the livers of sacrificed animals.

*Spontaneous.* An unconstrained form of divination, free from any particular medium, and actually a generalization of all types of divination. The answer comes from whatever object the diviner happens to see or hear. Some Christians and members of other religions use a form of bibliomancy: they ask a question, riffle the pages of their holy book, and take as their answer the first passage their eyes light upon. Other forms of spontaneous divination include reading auras and New Age methods of Feng Shui such as "intuitive" and Fuzion.

By far one of the most popular methods of divination is astrology, typically categorized as Vedic astrology (Jyotish), Western astrology, and Chinese astrology, though besides these main three branches many other cultures also have or have had their own forms of Astrology in the past.

<http://en.wikipedia.org/wiki/Divination>

Due in part to its colorful associations with gypsies, the secrecy in which 19th century occultists enshrouded it, or perhaps to its more well-known surviving offshoot--modern playing cards--synonymous with entertainment, gambling, and games of chance, not surprisingly, Tarot divination (to the uninitiated) is often met with misapprehension and myth. Its random method of selection certainly adds little confidence or trust to its status as a reliable method. In actual practice however, consulting Tarot is less "fortune-telling" than truth-seeking, less a focus on the future than the "dynamic present," and less concerned with "the mysterious unknown" than the "vaguely sensed" (whether consciously or unconsciously). As its name suggests, "divination" is a technique that seeks to uncover hidden knowledge or prophetic insight from a divined source. Tarot author Mary Greer notes:

In divining we seek to discern the Will of the Divine (Spirit, the Gods, etc.) through a symbolic form of communication. The purpose is to bring one into harmony with 'the hidden forces of Nature,' or 'the scheme of the Universe,' and thus come to "Know Thyself" (as commanded by the Oracle at Delphi).<sup>1</sup>

Tarot's mysterious structure of major and minor arcanum is said to embody the perennial wisdom of human development, initiation, and spiritual knowledge. The modern therapist who studies these fascinating encoded illustrations would likely add to the list 'psychological insight.' Though more an adjunctive tool than a system of psychotherapy, so far as psychological savoir faire is concerned, Tarot is amazingly eclectic, penetrating, and versatile. Tarot scholar Cynthia Giles draws a parallel:

The tarot situation and the therapy situation have something in common: Each offers a space and a time for the querent or the patient to study his or her own myths.<sup>2</sup>

Beyond conventional projective instruments like Rorschach inkblots or the Thematic Apperception Test (TAT), which utilize ambiguous images (empty of objective meaning in themselves) to elicit revealing projections from a subject's personal unconscious, the Tarot while a projective in its own right comes additionally stocked with imagery rich in objective, historical, and symbolic meaning. Depth psychologists may feel a natural affinity in this regard as indeed many have pointed to the obvious correspondence between the 22 Trumps of Tarot's Major Arcana and the essential Jungian archetypes of the collective unconscious. But unlike projective techniques which are designed to reveal only to a neutral observer (the assessment clinician) the unique psychological substrata of the subject, Tarot divination (much as the analytic relationship itself) requires a shared, transference, and co-creative effort between subject and reader. Its subsequent results are therapeutic as well as diagnostic. In practice, Tarot divination not only mirrors subjective reality but also points to meaningful possibilities and opportunities for the subject.

<http://www.artrosengarten.com/synchronicity.htm>

## **Group Psychology**

*Note: we had included psychoanalysis within the set of possible familial methodologies of systematics, but in retrospect it seems more sensible to look at group psychology, particularly since the group at the Gathering exemplified group psychological phenomena, which played a significant part in the process.*

I have always been struck by the wisdom of words, and I want to consider our basic word 'group' in this respect. According to the *Shorter Oxford English Dictionary* there are two roots for the word 'group'; one is Germanic and the other Latin. The more ancient Germanic origin of the word 'group' is derived from the word for 'crop'; that is, the gizzard of a bird. For within the crop of an animal is to be found an agglomeration of substances that have been swallowed and which have lost their discrete nature and are now clumped together to form a fibrous mass. Thus in individual elements partly digested, glued together to form a bolus, we can see the image of a primitive group. This is a group where elements stick together, now partly changed by being mixed together in this agglomeration which has an external boundary, being shaped now into a sort of ball but which lacks any internal structure. The force that holds this mass together can be termed 'cohesion'. The dictionary defines cohesion as 'unity of material things held together by a physical substance such as cement, mortar, glue or by a physical force such as attraction or affinity.' This well describes the sticky mass of the organic bolus but also can be used as a metaphor to describe some aspects of group life. A group which sticks together displays a force that will resist being pulled apart, will resist invasion. In group psychology there has been a great deal of attention paid to this concept of cohesion, and it has been put forward as a cardinal principle for group psychotherapy. Groups which do not hold together, which do not exert a force of attraction or affinity for its members do not develop the capacity for psychological work, for experiencing and dealing with the psychic work that is involved in facing painful issues. It has also been recognised that the forces of cohesion can act as resistances to differentiation and development, and it is possible to see Bion's basic assumptions, for instance, as instances of powerful group cohesive forces.

The other origin for the word 'group' comes from the Latin, and is connected with a concept of 'grouping' as an active process. No longer the *passive* agglomeration of only partly differentiated substances, grouping refers to objects which are actively grouped together in order to display an organisational principle. The dictionary defines coherence as

unity, firstly of immaterial, of intangible things, such as the points of an argument, the details of a picture, the incidents, characters and setting of a story; or secondly of material and of objective things that are bound into a unity by a spiritual, intellectual or aesthetic relationship, as through their clear sequence or their harmony with one another; it therefore commonly connotes an integrity which makes the whole and the relationship of its parts clear and manifest.

So here we have the dictionary describing 'an integrity which makes the whole and the relationship of its parts clear and manifest.' It is this concept of *coherency* which I wish to put forward as perhaps the prime factor in the evolution of 'the group-as-a-whole' (Pines 1986).

Malcolm Pines from Chapter 4 *The Psyche and the Social World* ed. Dennis Brown and Louis Zinkin

### **Mathematics (re. Language)**

This is obviously a vast universe in its own right, sibling to verbal language, and the two between them define the framework for any systematics. In a crude but significant way, we could make the proposition that:

*Systematics is 'between' mathematics and language*

### **Music**

Music and mathematics always had a close relationship. Since Pythagoras it is known that tonal harmony is closely related to the numerical relation of the frequencies. In the last years a new field of science and mathematics boomed. Chaos, fractals and self-similarity are topics which caught public interest not at least because of the beautiful pictures which can be generated with them. Hardly anybody does not know the colorful psychedelic pictures of the Mandelbrot-set and even people never heard of complex numbers before bought mathematical books on this topics now. Experiments which tried to extend the beauty of the fractal-art-pictures to the acoustical sense sometimes gave interesting results but usually the sound is quite strange. I think this difficulty arises from the fact that chaos theory usually works with real numbers. But our traditional music is based on discrete frequencies and simple combinations of frequencies, and the mathematical discipline which is employed with the simple numbers is **number-theory**. Perhaps the most fundamental entities in mathematics are the natural numbers: 1,2,3,4,5... They are something universal: It is a hard thing to imagine a mind which would count in a different way. But the style we write them down can vary: The decimal system based on the



digits 0-9 is by no way the only or natural method to present numbers. It has just been arbitrarily chosen some time ago in history. The simplest notation is the binary notation which only uses the digits 0 and 1. Computers always calculate in binary notation because it can be easily mapped to electrical devices: The presence of current means 1 and no current means 0.

<http://reglos.de/musinum/>

### **Syntactic Theories of Music**

Contrast two answers to the question, Why do we like certain tunes?

*Because they have certain structural features.*

*Because they resemble other tunes we like.*

The first answer has to do with the laws and rules that make tunes pleasant. In language, we know some laws for sentences; that is, we know the forms sentences must have to be syntactically acceptable, if not the things they must have to make them sensible or even pleasant to the ear. As to melody, it seems that we only know some features that can help—but we know of no absolutely essential features. I do not expect much more to come of a search for a compact set of rules for musical phrases. (The point is not so much about what we mean by 'rule', as about how large is the body of knowledge involved.)

The second answer has to do with significance outside the tune itself, in the same way that asking "Which sentences are meaningful?" takes us outside shared linguistic practice and forces us to look upon each person's private tangled webs of thought. Those private webs feed upon themselves, as in all spheres involving preference: we tend to like things that remind us of the other things we like. For example, some of us like music that resembles the songs, carols, rhymes, and hymns we liked in childhood. All this begs this question: If we like new tunes that are similar to those we already like, where does our liking for music start? I will come back to this later.

The term 'resemble' begs a question too: What are the rules of musical resemblance? I am sure that this depends a lot on how melodies are "represented" in each individual mind. In each single mind, some different "mind parts" do this different ways: the same tune seems (at different times) to change its rhythm, mode, or harmony. Beyond that, individuals differ even more. Some listeners squirm to symmetries and shapes that others scarcely hear at all and some fine fugue subjects seem banal to those who sense only a single line. My guess is that our contrapuntal sensors harmonize each fading memory with others that might yet be played; perhaps Bach's mind could do this several ways at once. Even one such process might suffice to help an improviser plan what to try to play next. (To try is sufficient since improvisers, like stage magicians, know enough vamps or 'ways out' to keep the music going when bold experiments fail.

How is it possible to improvise or comprehend a complex contrapuntal piece? Simple statistical explanations cannot begin to describe such processes. Much better are the generative and transformational (e.g., neo-Schenkerian) theories of syntactic analysis, but only for the simplest analytic uses. At best, the very aim of syntax-oriented music theories is misdirected because they aspire to describe the sentences that minds produce without attempting to describe how the sentences are produced. Meaning is much more than sentence structure. We cannot expect to be able to describe the anatomy of the mind unless we understand its embryology. And so (as with most any other very complicated matter), science must start with surface systems of description. But this surface taxonomy, however elegant and comprehensive in itself, must yield in the end to a deeper, causal explanation. To understand how memory and process merge in "listening," we will have to learn to use much more "procedural" descriptions, such as programs that describe how processes proceed.

<http://web.media.mit.edu/~minsky/papers/MusicMindMeaning.html>

## Myth

### Some terms used by H. Gurr:

- 1) The time of "Ancient Civilizations" = A time of the Ancient Civilizations of the Nile, Tigris, Euphrates, and Indus River Valleys plus the classical Greek & Roman Civilizations.
- 2) The time of "Dawn People" = A time much, much earlier than mentioned above, during which all peoples were pre-historical hunter-gatherers.
- 3) "distinctive characteristics of original participation" = The recognizable perceptual patterns of Dawn People, as explained by H. Gurr below. To my knowledge, Mr. Barfield does not attempt a similar "compact" description.

### Some terms used by Owen Barfield:

- 1) "Original participation" = The world view and patterns of perception of Dawn People as explained in the Original Participation discussion below. These perceptions, so vastly different and beyond our wildest imagination, constitute in Barfield's opinion, a different mode of consciousness, a fact conceded by the Encyclopedia Americana (1998): "Original participation" guided the perceptions and ideas of Dawn People and continued, despite considerable change in cultural practices, until the middle ages." Barfield shows how the primitive people studied by Anthropologists over the last 100 years have characteristics similar to what he detects in Dawn People.
- 2) "Figures" = The "others" with whom Dawn People shared their world and their life. For example: Mithras, Persephone, Dionysus, Orpheus, Apollo, Psyche, Eros, Pan, Osiris, Mars, Saturn, Jupiter, and the Sun. Mr. Barfield claims there are hundreds more. He purposefully avoids the words, "Gods or Spirits", when speaking about original participation. The "others" may also be called "Active Spirit Creatures" with a mind and will, which we moderns might call Natural Forces, Natural Processes, Internal Human Body Processes, or Psychology.
- 3) "Evolution of Consciousness" = The gradual change of peoples' world view over the millennia. What we are consciously aware of, is vastly different from that of Dawn People. Of course, people of the future will "see differently" than we do now. Human perceptual processes active in the past, still continue in new forms that have recognizable relation to the previous.

<http://www.usca.edu/math/~mathdept/hsg/OwenBarfieldIntepretMythV67.html>

## Pattern language

A **pattern language** is a structured method of describing good design practices within a particular domain. It is characterized by

- Noticing and naming the common problems in a field of interest,
- Describing the key characteristics of effective solutions for meeting some stated goal,
- Helping the designer move from problem to problem in a logical way, and
- Allowing for many different paths through the design process.

Pattern languages are used to formalize decision-making values whose effectiveness becomes obvious with experience but that are difficult to document and pass on to novices. They are also effective tools in structuring knowledge and understanding of fundamentally complex systems without forcing oversimplification -- including organizing people or groups involved in complex undertakings, revealing how their functions inter-relate as part of the larger whole. . .

According to Alexander, a single pattern should be described in three parts:

- "context" - under what conditions will this solution address this problem?
- "system of forces" - in many ways it is natural to think of this as the "problem" or "goal"
- "solution" - a configuration that brings the forces into balance or solves the problems presented

Context -> System of forces -> Configuration

Therefore, a single entry in a pattern language should have a simple name, a concise description of the problem, a clear solution, and enough information to help the reader understand when this solution is

the most appropriate one. It should also note which patterns must be considered beforehand, and which patterns it is natural to consider next.

[http://en.wikipedia.org/wiki/Pattern\\_language](http://en.wikipedia.org/wiki/Pattern_language)

## Sorcery (Magic)

### Theories of magic

A survey of writings by believers in magic shows that adherents believe that it may work by one or more of these basic principles:

**Natural forces that cannot be detected by science** at present, and in fact may not be detectable at all. These magical forces are said to exist in addition to and alongside the four fundamental forces of nature: gravity, electromagnetism, the strong nuclear force and the weak nuclear force.

**Intervention of spirits** similar to these hypothetical natural forces, but with their own consciousness and intelligence. Believers in spirits will often see a whole cosmos of beings of many different kinds, sometimes organized into a hierarchy.

A **mystical power**, such as mana or numen, that exists in all things. Sometimes this power is contained in a magical object, such as a stone or a charm, which the magician can manipulate.

A mysterious **interconnection in the cosmos** that connects and binds all things, above and beyond the natural forces.

**Manipulation of symbols.** Adherents of magical thinking believe that symbols can be used for more than representation: they can magically take on a physical quality of the phenomenon or object that they represent. By manipulating symbols (as well as sigils), one is said to be able to manipulate the reality that this symbol represents.

The principles of **sympathetic magic** of Sir James George Frazer, explicated in his *The Golden Bough* (third edition, 1911-1915). These principles include the "law of similarity" and the "law of contact" or "contagion." These are systematized versions of the manipulation of symbols. Frazer defined them this way:

*If we analyse the principles of thought on which magic is based, they will probably be found to resolve themselves into two: first, that like produces like, or that an effect resembles its cause; and, second, that things which have once been in contact with each other continue to act on each other at a distance after the physical contact has been severed. The former principle may be called the Law of Similarity, the latter the Law of Contact or Contagion. From the first of these principles, namely the Law of Similarity, the magician infers that he can produce any effect he desires merely by imitating it: from the second he infers that whatever he does to a material object will affect equally the person with whom the object was once in contact, whether it formed part of his body or not. [1]*

**Concentration or meditation.** A certain amount of restricting the mind to some imagined object (or will), according to Aleister Crowley, produces mystical attainment or "an occurrence in the brain characterized essentially by the uniting of subject and object." (Book Four, Part 1: Mysticism) Magic, as defined previously, seeks to aid concentration by constantly recalling the attention to the chosen object (or Will), thereby producing said attainment. For example, if one wishes to concentrate on a God, one might memorize a system of correspondences (perhaps chosen arbitrarily, as this would not affect its usefulness for mystical purposes) and then make every object that one sees "correspond" to said God.

Aleister Crowley wrote that ". . . the exaltation of the mind by means of magickal practices leads (as one may say, in spite of itself) to the same results as occur in straightforward Yoga." Crowley's magick thus becomes a form of mental, mystical, or spiritual discipline, designed to train the mind to achieve greater concentration. Crowley also made claims for the paranormal effects of magick, suggesting a connection with the first principle in this list. However, he defined any attempt to use this power for a purpose other than aiding mental or mystical attainment as "black magick".

**The magical power of the subconscious mind.** To believers who think they need to convince their subconscious mind to make the changes they want, all spirits and energies are projections and symbols that make sense to the subconscious. A variant of this belief is that the subconscious is capable of contacting spirits, who in turn can work magic.

"*The Oneness in All*"; based on the fundamental concepts of monism and Non-duality, this philosophy holds that Magic is little more than the application of one's own inherent unity with the Universe. The central idea is that on realizing that the Self is limitless, one may live as such, seeking to preserve the Balance of Nature and live as a servant/extension thereof. Many more theories exist. Practitioners will often mix these concepts, and sometimes even invent some themselves. In the contemporary current of chaos magic in particular, it is not unusual to believe any concept of magic works.

## Feeling-Images of Systematics

These were some of the descriptive names – or 'feeling-images' – that came out of our discussions. They are obviously not technical descriptions of systematics but attempt to capture its spirit. There was a search for feeling and sensory names, in which we wanted to bypass the usual separation of conception from perception and address how important it was for systematics to become 'part of ourselves'.

ANATOMY OF A SYSTEMATICIAN  
LIVING SYSTEMS  
MEANING QUEST  
ACTIVE MENTATION  
LIVE MENTATION  
PARTICIPATIVE VISUALIZATION  
CREATIVE TEMPLATING  
PATTERN RAVE  
RELATIONAL VISION  
MULTIDIMENSIONAL SYNAESTHESIA  
PROCESS OF CONSCIOUS LIVING  
LANGUAGE THERAPY  
FORM WHISPERERS  
DANCING WITH INTELLIGENCE  
SEEING WHOLES WITH/THROUGH FORMS  
WAY OF PROCESSING WHAT IS AROUND US  
AMPLIFYING NATURAL INSIGHT  
SOCIETY FOR THE STUDY OF FORMS OF MEANING  
TAOISM

### *Anatomy of a systematician*

Making systematics bodily, organic and personal

### *Living systems*

Which are embodied, self-organising, rhythmic and meaningful and known only by *participation*, the following expressing and amplifying the idea:

### *Meaning quest*

*Active mentation, Live mentation*

*Participative visualization*

*Creative templating*

*Pattern rave*

The last two emphasised freedom, feeling and artistry in systematics rather than adherence to set forms and interpretations.

There was a notion of an intensification of sensory cognition, as if it could be taken to another level involving the direct seeing of structure:

*Relational vision*

*Multidimensional synaesthesia*

Wanting to link systematics more with life as experienced, we had:

*Process of conscious living*

*Conversations of conscious living*

There were particular interpretations of systematics, such as seeing it as:

*Language therapy*

Which involved a whole discussion on the tyranny of words and how we are possessed by language and need help in finding our way out of the morass of what Gurdjieff called 'mentation by word' – through the 'mentation by form' afforded by systematics and LVT.

There were evocative phrases for systematics such as:

*Form whisperers*

*Dancing with intelligence*

*Seeing wholes with (through) forms*

An important feature of the discussion here was that systematics related to seeing rather than to action; therefore there was always a jump over a gap in going from systems to 'what to do'. Evidently, or not so evidently, this jump points towards considerations not so far addressed within the purview of systematics. These would include the role of *visualization*; hence, would link onwards into such things as Bennett's *decision exercise*.

It is important here to emphasise that in our *feeling* for systematics we tended to consider intuitive responses rather than calculated ones. As we have seen, systematics can be highly complex, and this leads us to a contradiction because systematics was essentially invented to reduce complexity, not add to it. What 'works' does not come out of going through every part of the complexity of structure bit by bit but from some other source. At the same time, if this complexity is neglected, then the 'simple and intuitive' response is liable to be short-sighted.

#### OPENNESS AND COMPLEXITY

Nothing undermines openness more surely than certainty. Once we feel as if we have "the answer," all motivation to question our thinking disappears. But the discipline of systems thinking shows that there simply is "no right answer" when dealing with complexity. For this reason, openness and systems thinking are closely linked.

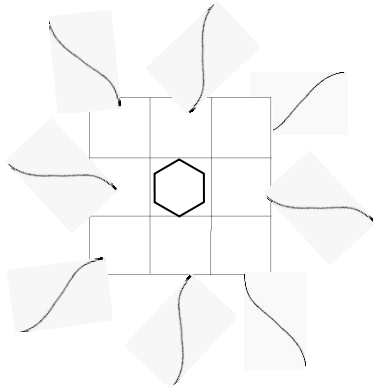
A simple exercise we have used in our leadership workshops for many years gets at the central point. We cover a large wall with blank paper, and then ask the group to work together to map out all the feedback relationships in a particular problem with which they are wrestling. "For instance," we might say, "let's create a systems diagram to figure out how to balance our work and family responsibilities." We usually start by identifying key variables and writing them on different parts of the large paper: time pressures; expectations of oneself; responsibilities; personal interests; career goals; distance between work and home; and so on. Then we begin suggesting feedback links: expectations influence career goals; distance between work and home influences time available for family; personal income influences independence, as well as budget. Within a half hour, we've covered the wall with circles and arrows. Everyone in the room feels overwhelmed, and yet we know that we've just begun to show the hundreds of interrelationships that exist in the real system. People gradually come to realize that no one could possibly come to figure out all these interactions.

This realization has a remarkable impact on people. Some try to rationalize it away: "Well, this is so obvious it's meaningless," they say. "What's the point?" Others insist that, given enough time, they could eventually figure it out. Some diehards keep trying to add links and loops. But those who can face the "un-figure-out-able-ness" of it all will often sit back in their chairs, laugh, and realize some spring has sprung. Peter Senge *The Fifth Discipline* p. 281

The extraordinary and as yet unproven thing is that systematics would claim to enable us to understand such complexity through relatively simple 'systems'. These systems are not the same as those of Systems Theory, System Dynamics or Soft Systems Methodology – because they depend on the *qualities of number*. Certainly, such a claim counts as mystical or 'magical

thinking’.

*Way of processing what is around us*



This was a way of trying to express the idea that systematics could be seen as a ‘processing device’ of a complementary nature to a computer, and serving to ‘make meaning’ – in various ways such as amplifying what we do naturally, capturing flashes of insight, coalescing ‘fragments’ into thoughtful, sensed and felt wholes, etc. We had the image of systematics as a *meaning chip*. In this image, the lines coming out (or in) represent ‘currents’ or energy flows which can only be provided by *life*.

The ‘grid’ in the image represents what we called Set<sup>N</sup> and not just one template. It does not serve as a Procrustean bed into which experience must be forced to fit.

In classical mythology, Procrustes not only waylaid those who came upon him, but he stretched or amputated their limbs to make them fit his bed. Used figuratively for inflexible and zealously applied standards.

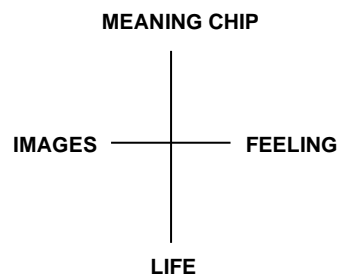
Hence there is a suspension or separation on two counts: first, as between different patterns or systems (the members of the series of N-term systems) and second, between any such pattern and the complexity and asymmetry of experience. And two important points must be made.

1. What connects the meaning chip of systematics to the flux and turbulence of real life is *feeling*, but this is ‘educated feeling’ not the rudimentary reactions of liking and disliking. Such a view follows the belief that feelings have a cognitive power in an *heuristic* sense by leading and guiding thought towards discovery.

2. A great virtue of the systematics processor is that it holds a variety of patterns that are made as distinct as possible while exhibiting intelligible relations between them. This is due to the numerical character of the systems.

*Amplifying natural insight*

This description then becomes the crucial one. The reason for this is that the patterns of the systematics ‘processor’ must be supposed to be already present in us and capable of development. After all, at present we are quite unable to build a systematics processor, electronically or otherwise and so the only recourse is to ourselves in the belief that natural evolution has distilled such patterns into our brains long since.



We introduce ‘images’ as a factor because the systems act not only directly in perception but also through representations that can range from mere lists of words through geometrical shapes into forms and art. In terms of the diagram of the ‘meaning chip’ we can think of such images as occupying the eight surrounding squares. These squares, surrounding the central

symbol (taken from LVT) can of course assume various meanings, including the presence of alternative systems. To take one significant interpretation: the central square is the *monad* and the surrounding squares are the systems dyad to ennead, each taking the content of the monad into its own form.

If we take the way the systems are distinguished – by integral number – as only an indication or exemplification of a more general approach, then it is possible to replace the concept of systematics as *discipline* with one of it as a *society*:

*Society for the study of forms of meaning*

The concept of 'forms of meaning' leaves open how such forms may be registered and compared. As we said, in the case of number-term systems, the forms are clear and distinct. Could we adopt *colour* as a type of form of meaning? Certainly, as some people do. This and other examples lead us to consider the concept of 'form of meaning' as akin to *type* of meaning – maybe visual, musical, geometrical, numerical, etc.

In Part One, we talked about shape, form and image in relation to systematic meaning. *Form* is in fact an elusive idea, immediately understood but tricky to define (see quote p.9 above). In our usage, it carries with it the sense of mediating between words and meaning:

### **Words - Form – Meaning**

in a way that can include the very structure of matter. Ron Eirlen suggested this name:

### **Systematics – way of developing meaning through the processing of form**

#### **Form**

Form is a key concept in biology. The function of everything from the activity of an enzyme to a cell or organ is related to its physical form. Growth from the fertilized cell to the adult is a process of differentiation and transformation of form; hence biologists from Aristotle to Waddington, Sheldrake and Goodwin have postulated notions of "morphic fields".

The universal nature of form and its transformation was, in the 1960s, the subject of a new branch of mathematics, Rene Thom's Catastrophe Theory. Form has associated with it the idea of a Gestalt, of global patterns, perception and non-locality; such notions connect with the functioning of consciousness and with the Immune system.

Form has its role to play in physics. In classical physics it is the *form* of the Hamiltonian that remains invariant under canonical transformations. In this way, Newtonian mechanics can be transformed from the mechanical interaction of individual particles into global form-preserving processes. Likewise, General relativity is about the invariance of form under all possible coordinate transformations. In this sense, motion under gravity has to do with the preservation of form. One could perhaps generalize the concept of inertia to that of the "law of persistence of form".

Most dramatically form appears in the guise of the wave function. It is the global form of the wave function (symmetric or antisymmetric) that is responsible for the existence of Fermi-Dirac or Bose-Einstein statistics. The fact that such forms are non-factorizable (into spatially independent components) is the deep reason for quantum non-locality (Bell's mysterious correlation between distant particles). The form of the wave function is ultimately responsible for collective modes in physics - plasma, superfluid, superconductor and hypothetical Frochlich systems. The form of the wave function orchestrates each of an astronomical number of particles into a highly coordinated dance.

Bohm's quantum potential is unique in that the magnitude of its effects, on the motion of electrons, does not arise from its strength or intensity but from the "form" of the potential - that is, its particular complex shape. It is for this reason that the effects of the quantum potential do not fall off with distance and that well separated quantum objects can remain strongly correlated.

It is highly suggestive that form may also be responsible for global quantum proper within the brain that give rise to consciousness. Form, a global property as opposed to a local one, may have something to do with the evolution of space-time structure out of some more primitive quantum pre-space. Penrose, for example, proposes that the quantum mechanical "collapse of the wave function" is a global phenomenon connected with the geometrical properties of space-time. He also speculates that global quantum process have a role to play in the liaison between consciousness and brain structure.

These are speculative, but compelling, speculations that revolve around the same cluster of ideas and connect different areas of interest, such as consciousness, life and fundamental physics. They raise the question: How does the global nature of form relate to Active Information? Is Information a new principle of the physical world that applies in a wide variety of fields of interest? The answer to this question must begin with a period of "sorting out" and clarification of basic ideas and their multiple interconnections.

### **Meaning**

If Form begins with biology (and leads into quantum theory) Meaning surely starts in psychology. It was Carl Jung who stressed the role of meaning in the Synchronicity - that region where form and pattern spill over the boundaries between mind and matter. For Jung the key was the deep internal significance associated with an experience of synchronistic patterns, a significance that did not end at the boundaries of personal consciousness. Meaning was both subjective and objective. As Wolfgang Pauli emphasized, just as psychology had uncovered the objective in psyche (the collective or objective unconscious) so physics must find the subjective in matter. Jung termed this speculum between matter and mind as the "psychoid", its integrating factor is **meaning**.

In the context of Dialogue groups Bohm spoke of a "field of meaning" shared by all participants. He also stressed that the way to bring about effective social change is through an overall change of meaning. Meaning, which could be thought of as a field of form, Bohm associated this with the Immune system. The Immune system is what keeps the body whole, it processes coordinated and is another manifestation of meaning. if meaning is degraded the body becomes sick. Bohm stressed that his maxim "a change of meaning is a change of being" was to be taken literally. That assailant seen on a dark night turns out to be the shadow of a tree trunk. Immediately a flurry of electrochemical changes takes place in mind and body. Laboratory research suggests that shifts in "meaning" bring about subtle restructuring of nerve pathways and the sensitivities of connections. Meaning, which is normally taken to be subjective turns out to have an objective, physical consequence.

Meaning can act on matter and, presumably, matter on meaning. (The significance of what we see or think is affected by the electrochemical environment of our bodies.) Does the idea extend from consciousness into the physical world? I believe it does. Information is, in some way, encoded in the wave function, or some sort of a field of form, or some set of prequantum algebraic relationships. Yet *what* information is encoded? One solution is that all information, about the entire universe is encoded, or enfolded, within the global form. (Or as Bohm may have said, within the Implicate Order.) Yet only that which has meaning, or significance, for the electron is "active". Consciousness becomes a certain dynamical aspects of this underlying field or order. Mind is fundamentally distributed throughout the material world.

Information by itself is nothing more than an abstract set of binary digits (Shannon and Weaver's Information Theory) but if it is to act, if it is to affect the motion of the electron, coordinate the dance of a plasma, and the global movement of electrical activity within the brain, then it must have a particular significance within a given context. Meaning comes down to the way the information acts within different contexts.

Again deep speculative connections exist between Information, Form and Meaning, between quantum theory, brain function and consciousness.

*Active Information, Meaning and Form* by F. David Peat

<http://www.f davidpeat.com/bibliography/essays/fzmean.htm>

### *Taoism*

In an extreme step, we can equate systematics with what might appear its very opposite, thus: Systematics = Taoism



There is an interesting feature of making this equivalence, since Taoism is in fact not a single doctrine or method but a confusing kaleidoscope of people and practices, although most people think of Taoism in terms of *Lao Tzu's Tao Te Ching* (written 600 BC). Here is Wikipedia's entry on the meaning of the word:

**Tao or Dao** (道, Pinyin: Dào, pronounced "taũ" or "daũ") refers to a Chinese character that was of pivotal meaning in ancient Chinese philosophy and religion. Its most generic meaning, it refers to the "head path," and is generally translated into English as "The Way".

The semantics of 道 vary widely depending on the context, and may variously refer to a concept of religion, morality, duty, knowledge, rationality, ultimate truth, path, or taste. The CEDICT allows several different definition words for 道, as it varies in translation:

*direction, way, method, road, path, principle, truth, reason, skill, method, Tao (of Taoism), a measure word, to say, to speak, and to talk.*

In this light, Tao appears as very similar to *logos*. Both imply a principle leading to articulation, right conduct, understanding and so on but not itself subject to any of the forms it might generate.

"When all things began, the Word already was. The Word dwelt with God, and what God was, the Word was. The Word, then, was with God at the beginning, and through him all things came to be; no single thing was created without him. All that came to be was alive with his life, and that life was the light of men. The light shines on in the dark, and the darkness has never mastered it." [Prologue to the Gospel of John: 1-5]

It is the "Word" that we most often hear in terms of describing the Logos. But there is much more.

Referring to the Logos merely in terms of the concept of "Word" is considered inadequate by serious scholars. The best way to get a grip on the Logos is by exploring how it was used in Greek philosophy, in the Old Testament (where it is the Sophia), and in Early Christianity.

Taking account of the Egyptian hermetic writings, "probably the earliest antecedent to the idea of the Logos came from...Heraclitus." His conceptual universe was one that constantly changed, a universe in constant motion propelled by all-pervading Reason, which Heraclitus likened to divine fire or energy.

Following Heraclitus, the philosopher Anaxagoras considered a "Divine Mind", which was immanent in the created order... [John A. Sanford, MYSTICAL CHRISTIANITY: A PSYCHOLOGICAL COMMENTARY ON THE GOSPEL OF JOHN, Crossroad, 1995, p. 19]

Sanford mentions Plato's idea of a "spiritual reality that gave to the created world its form and being." This was the imaginal realm of Platonic Forms, an archetypal realm of changeless and universal patterns of which "the material world is but an imperfect representation." For Sanford, the Logos "partakes of the of the nature of this archetypal reality." [Ibid, p. 19]

Aristotle believed that matter and form always existed together. Hence, for him, human beings had not only a material body, but also a soul in which there dwells a divine spark that the soul shares with God. "This spark of divinity in human nature is an element of the divine Logos--the shaping spiritual power and essence of God--is eternal and impersonal." [Ibid, p. 20]

Sanford stresses that the concept of the Logos was most fully expressed by the Stoic philosophers. Stoicism believed the Universe to consist of two kinds of matter: a gross or coarse matter; and an extremely fine matter, which is virtually indistinguishable from the idea of spirit. The material, created order is thus pervaded with the spiritual substance, but it is also pervaded with a vital element--like the energetic fire of Heraclitus--that shaped, harmonized, and interpenetrated all things.

For the Stoics, this was nothing less than an intelligent, self-conscious world-soul, an indwelling Logos. Considering the Logos as God, and as the source of all life and all wisdom--then our 'human reason partakes of its nature, because this Logos dwells within us. For this reason we can follow the God within and refer to ourselves as the offspring of God." [Ibid, p.20]

Fideler packages these ancient concepts of the Logos as follows: "Logos designates the power of 'reason'; the pattern or order of things; the principle of relationship; and an articulation of something."

In general, the Logos has the following meanings: 1.) Order or pattern. 2.) Ratio or proportion. 3.) A discourse, articulation or account, even a 'sermon.' 4.) Reason, both in the sense of rationality and in

the sense of an articulation of the cause of something. 5.) Principle or cause (logoi = principles, ratios, reasons). 6.) A principle of mediation and harmony between extremes." [David Fideler, JESUS CHRIST SUN OF GOD: ANCIENT COSMOLOGY AND EARLY CHRISTIAN SYMBOLISM, Quest Books, 1993, p. 38]

Further discussing the meaning of the Logos, Sanford also stresses the "equally important influence of the Wisdom literature in the Old Testament. In the Old Testament we find an idea of God's creative spirit immanent within the creation and residing even in the human soul that is as old--or perhaps older--as that of the Greeks." [MYSTICAL CHRISTIANITY, p. 21]

In parts of the Old Testament it is the \*Sophia\* that embodies and symbolizes the feminine aspect of God. The Sophia shared in the generative power which created the world. The Sophia "dwelt immanent within the world, and which also dwelt within the human heart..." The Sophia was considered the fount of all human knowledge, whether physical, psychological or spiritual--"knowledge, which she can likewise impart because she is mistress of the soul." [Ibid, p. 22]

The philosophers of the early Church saw Christ as the embodiment of the Sophia as well as the Incarnation of the Logos.

For these early Christian thinkers...it was clear that to say "Christ was the Word was to assign to Christ a profoundly mystical and far-reaching reality. It meant that the utterly transcendent God...created the world through that self-expression termed the Logos, and that this Logos, or Creative Word of God, is immanent within all of the creation." [Ibid, p. 23]

These early Christian philosophers also believed in Christ's pre-existence. Christ as the Logos or Wisdom of God had to exist from the beginning before incarnation could take place.

Sanford sums it up beautifully: "The world-creating Logos could be seen in the movements of the heavenly bodies, in the majesty of the skies, in the great ocean with its abundance of life, but also could be seen in the tiniest unit of life...But the most important place where the Word of God was to be found for the early Christians was within the soul herself, where it lived as an \*imago dei,\* like a spring of water from which flowed the knowledge of God." [Ibid, p. 23]

[http://www.bizcharts.com/stoa\\_del\\_sol/logos/logos\\_1.html](http://www.bizcharts.com/stoa_del_sol/logos/logos_1.html)

## Returning to the Tao:

There is a flow in the universe, and it is called dao. Dao flows slowly, however; it is never stagnant and is incredibly powerful and keeps things in the universe balanced and in order. It manifests itself through change of seasons, cycle of life, shifts of power, time, and so forth. Dao has a strong and deep connection with cosmology and the natural world, as the most well-known Daoist philosophers Laozi and Zhuangzi agreed. Dao is the law of Nature. When you follow dao, you become one with it. And it is best to also understand chi, because chi and dao go hand in hand. Chi is a Chinese term that is translated as breath, vapour, and energy. Because chi is the energy that circulates the universe, it can be said that dao is ultimately a flow of chi. Being one with dao brings best outcomes, because that way things fall into place that they are meant to be.

The concept of Tao is based upon the understanding that the only constant in the universe is change, (ie. *I Ching*, the "Book of Changes") and that we must understand and be in harmony with this change. The change is a constant flow from non-being into being, potential into actual, yin into yang, female into male. The symbol of the Tao, called the Taijitu, is the yin yang confluent flowing into itself in a circle.

The Tao is the main theme discussed in the *Tao Te Ching*, an ancient Chinese scripture attributed to Lao Tsu. This book does not specifically define what the Tao is; it affirms that in the first sentence, "The Tao that can be told of is not an Unvarying Tao" (tr. Waley, modified). Instead, it points to some characteristics of what could be understood as being the Tao. Below are some excerpts from the book.

Tao as the origin of things: "Tao begets One; One begets two; Two begets three; Three begets the myriad creatures." (TTC 42, tr. Lau, modified)

Tao as an inexhaustible nothingness: "The Way is like an empty vessel / That yet may be drawn from / Without ever needing to be filled." (TTC 4, tr. Waley)

Tao is omnipotent and infallible: "What Tao plants cannot be plucked, what Tao clasps, cannot slip." (TTC 54, tr. Waley)

In the *Yi Jing*, a sentence closely relates Tao to Yin-Yang or Taiji, asserting that "one (phase of) Yin, one (phase of) Yang, is what is called the Tao". Being thus placed at the conjunction of Yin and Yang alternance, Tao can be understood as the continuity principle that underlies the constant evolution of the world.

Most debates between proponents of one of the Hundred Schools of Thought could be summarized in the simple question: who is closer to the Tao, or, in other words, whose "Tao" is the most powerful? As used in modern spoken and written Chinese, Tao has a wide scope of usage and meaning.

Our ultimate meaning for systematics is that it is a manifestation of an underlying spirit of understanding, creativity and appreciation that flows *equally* through us and all life and nature. It is not our invention. When Bennett used integral numbers to articulate his vision of systematics, he was appealing to the simplest and most self-evident aspects of form we could have. This very simplicity opens the way to the subtle richness of experience and our expression of it in countless media. For every simple numerical form there is a corresponding possibility of experience that can never be measured or contained but recognised in diverse moments. In itself, systematics provides no models of the world but simply ways of contemplating it. It is *substantially empty*. This is wholeness as unbroken continuity, as quality and not quantity. Systems enable us to see, not to dictate *what* we see.

We diverge from this standard view of what a system is, e.g.:

**System** (from the Latin (*systema*), and this from the Greek σύστημα (*sustēma*)) is an assemblage of elements comprising a whole with each element related to other elements. Any element which has no relationship with any other element of the system, cannot be a part of that system. A **subsystem** is then a set of elements which is a proper subset of the whole *system*.

Every division of an object/entity into systems is arbitrary; therefore it is a subjective abstract concept. The scientific research field which is engaged in the transdisciplinary study of universal systemic properties of the World is the General System Theory or Systems science, it investigates the abstract properties of the matter and mind, their organization, searching concepts and principles which are independent of the specific domain, independent of their substance, type, or spatial or temporal scales of existence.

<http://en.wikipedia.org/wiki/System>

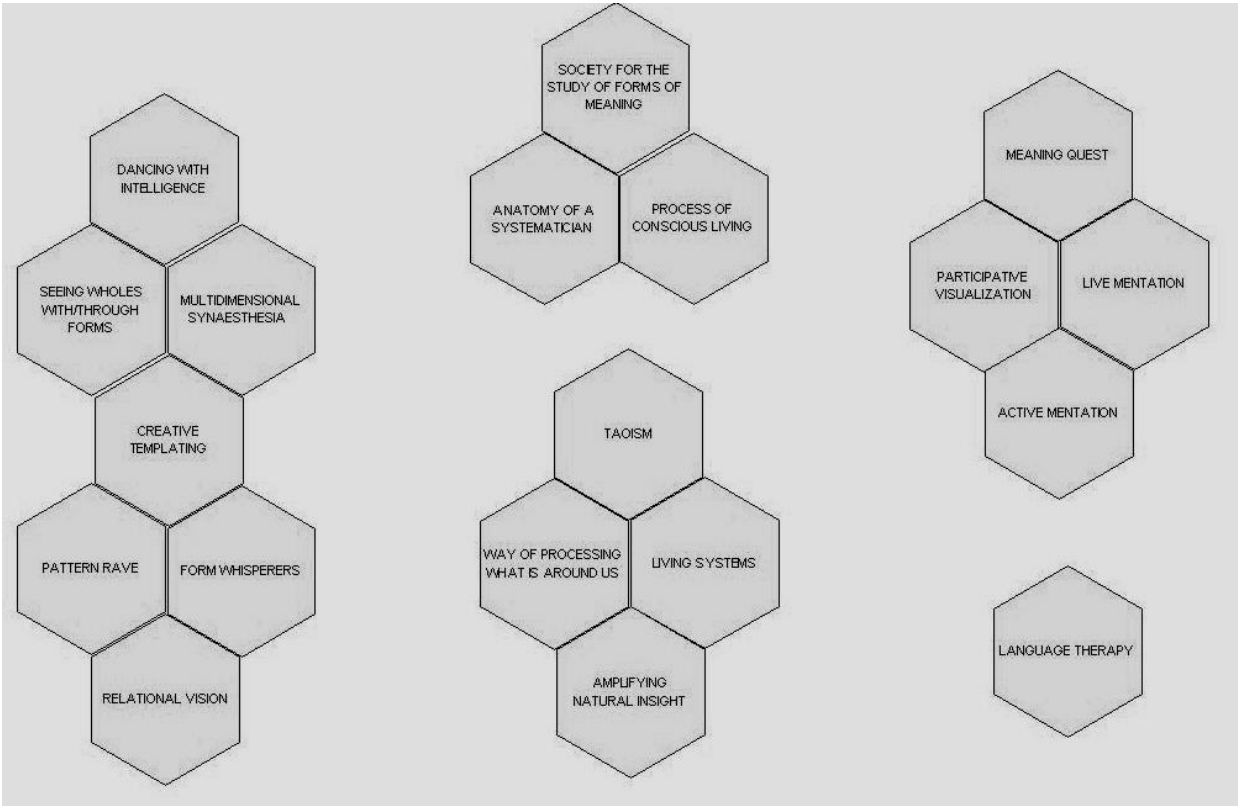
The standard idea of systems as arbitrary and subjective is linked with prevalent ideas about the randomness of creativity; because in both of these there is a denial of meaning on the basis of not having a *known mechanism*. In our discussions, this was acknowledged in terms of *hazard*. Hazard was Bennett's key concept but he could never explain it to anyone's satisfaction since it was precisely what was not mechanism but more truly spirit – which we are bound to see as arbitrary or random (hence the relevance of divination, for example).

The Liberal Arts need reformulating for our time, but will include as they always must the marriage of Language and Number. These two are symbols of what fifty years ago were called (by C. P. Snow) the 'two cultures' and represent another version of the split often now considered between the 'two sides of the brain'. Language makes sense in the context of human evolution - utilising social networks - but mathematics does not. It remains a puzzle why such complex possibilities of computation and analysis evolved in our brains millennia before they could ever manifest. In looking for some actual mode of synthesis we have developed early innovations by Bennett in communication and language – such as structural communication – into logovisual technology, partly as a heuristics to search for a language that will enable us to think in a way that is both ancient and modern, a language of understanding.

### 3.

## The Centres of Gravity

Pulling together the roughly expressed feeling-images we arrive at configurations such as the one shown here. They express hope more than practical insight.



On the left, there are elements to do with improvisation, flexibility and play. This diverges from classical systematics in two ways. The defined forms of systematics are taken as points of departure rather than fixed interpretations. And the forms themselves are seen as more varied and sensory. This supports the view of systematics as a kind of gymnastics and may be epitomized by the ideals of the Glass Bead Game.

The central bottom cluster taps into our natural powers of seeing and carry with it the sense that the world of our experience *is intrinsically articulate and meaningful*. However, it is important to note the qualification of ‘amplification’, which relates to the uppermost cluster.

The two MMs of ‘society’ and ‘anatomy’ form a complementary pair: the living systematics is embodied and shared. It is this makes for conscious living.

The right hand side shows MMs that emphasize the need to be conscious in our thinking. To be ‘conscious’ in this sense means to involve thinking, feeling and sensation.

The remaining MM is of critical importance, since it is largely our confusions in language that often leads us astray and unable to recognize and become part of structures of meaning that surround us and permeate us.

## **APPENDIX ONE – Natural Symmetry**

R. Arnheim at <http://acnet.pratt.edu/~arch543p/readings/Arnheim.html#1.1>

Two examples may convey an idea of this sort of physical behavior. The physicist Sir Joseph J. Thomson once illustrated the equilibrium of corpuscles in a plane by the behavior of magnetized needles pushed through cork discs that float on water. The needles, having their poles all pointing the same way, repel each other like the atomic corpuscles. A large magnet is placed above the surface of the water, its lower pole being of the opposite sign to that of the upper poles of the floating magnets. Under these conditions, the needles, which repel each other but are attracted by the larger magnet, will arrange themselves on the surface of the water around the center of attraction in the simplest possible form: three needles in a triangle, four at the corners of a square, five at the corners of a pentagon. Thus orderly shape results from the balancing of the antagonistic forces. The same kind of effect can be observed in another demonstration intended to simulate the behavior of propellant gases and liquids under conditions of zero-gravity. A lucite model of the Centaur fuel tank is filled with clear oil and colored water. Both are of equal density and do not mix, "and the natural surface of the water forms an interface of constant equal tension between them, which is almost like a membrane." Various agitation or rotation, the segregating surface assumes all sorts of accidental shapes. But when outside interference ceases, the forces inherent in the two liquids organize themselves to constitute an overall state of equilibrium or minimum tension, which results in perfectly regular spherical shape—the simplest shape available under the circumstances.

Such demonstrations show that orderly form will come about as the visible result of physical forces establishing, under field conditions, the most balanced configurations attainable. This is true for inorganic as well as organic systems, for the symmetries of crystals as well as those of flowers or animal bodies. What shall we make of this similarity of organic and inorganic striving? Is it by mere coincidence that order, developing everywhere in organic evolution as a condition of survival and realized by man in his mental and physical activities, is also striven for by inanimate nature, which knows no purpose? The preceding examples have shown that the forces constituting a physical field have no alternative. They cannot cease to rearrange themselves until they block each other's movement by attaining a state of balance. The state of balance is the only one in which the system remains at rest, and balance makes for order because it represents the simplest possible configuration of the system's components. A proper version of order, however, is also a prerequisite of good functioning and is aspired to for this reason also by organic nature and by man.

## **APPENDIX TWO – Levels of Action within the Present Moment**

From *The Dramatic Universe Vol. IV* by J. G. Bennett

### **THE OPERATIONS OF HISTORY**

The spectrum of transformations within the present moment.

**ACTION:** Simple actions are reversible—the measurement of time — cycles which play a part in history.

**INTERACTION:** To which thermodynamics applies —ageing and wearing out —sharing and communication are possible—the environmental element of history—interaction is the core of existential time.

**FORMATION:** Orderly action and the formation of enduring structures — its relevance to the history of the earth and man —the material of history.

GROWTH: Directed activity—growth as selective operation—the competitive aspect.

DEVELOPMENT: Open-ended operations —development is more than growth by the hyparchic regulation between inner and outer potentialities.

TRANSFORMATION: Cooperation between different orders of entity which reverses the tendency of temporal actualization—the difference between transformation and stimulation—the action common to past, present and future.

CREATION: The free action in the hyparchic future that requires transformation in order to penetrate into visible history.

## APPENDIX THREE – Structure

J. G. Bennett, *The Dramatic Universe Vol. III*, p. 7

### STRUCTURES AND SYSTEMS

It is no accident that recognition of the importance of structure has come, not by way of speculative philosophy or logical reasoning, but by the pressure of practical needs. We apprehend structures far more by the power of understanding than by knowledge. Knowledge is confined to Fact.

The Domain of Fact does not include transformation, which belongs to the Domain of Harmony. In this sense, knowing and understanding are powers that belong to quite different regions of experience and this suggests the surprising, but correct, conclusion that structures are not objects of knowledge, and that their true place is in the Domain of Harmony. We do not know structures, but we know because of structures. . .

[In Vol. I, pp. 62-4. Knowledge was defined as the ordering of function. Ordering is an operation performed *upon* the data whereas understanding is a transformation *within* the data.]

Structures link Fact and Value, and they are consequently always interesting. 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. 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. It follows that understanding understanding is of great practical importance; but there has been little research into the nature of understanding and into the possibility of developing it, until the growth of complex organizations has in recent years forced it upon the attention of practical men. It continues to be neglected by philosophers.

The need for more understanding is not confined to organization theory and systems engineering. It lies at the root of our central problem of elucidating the nature and destiny of man. We have not neglected the task in the earlier volumes of the present work. The first indications of a **technique of understanding** came with the notion of multi-term systems introduced in Vol. I and developed further in Vol. II. The theory of eternal patterns is a projection in analytical terms of a way of looking at complex structures that cannot be reduced to functional terms.

A common characteristic of these varied techniques is the recognition that structure is a primary element of experience and not something that is added by the mind. In this respect, it can be said that the techniques of understanding call for a drastic revision of the usual modes of thought that treat being and understanding as independent or at least as separable from one another.

In the study of structures, we cannot separate what we understand from what we are, nor can we separate what a thing is from the way it is known. Since no human mind has a synthetic and creative power great enough to reproduce as a mental image the total organized complexity of the world presented to us from moment to moment we need a means of simplifying the task. This is provided by **Systematics**. Systematics is the study of structures as simplified totalities. Analytics breaks structures down into their simplest elements and looks for the connections between these elements. Systematics takes the connections as primary and the elements as secondary. This is a very difficult mental exercise for people trained in analytical thinking . . .

We can describe systems as the **forms of structure**, but no one system taken alone can exemplify the organized complexity of real structures. We usually need to take more than one system into account in order to gain the insights needed for understanding any existing structure that we find. According to the aspect of structure that happens to be relevant to a given purpose, a system of one order may be more useful than another. It has been found for purposes of practical utility, the systems fall naturally in three groups of four. The first four from the monad to the tetrad help us to see **how** structures work. The systems from pentad to octad show **why** they work and how they enter into the pattern of Reality. The third group from the ennead to the duodecad is mainly concerned with the **harmony** of structures: that is, the conditions that enable them to fulfil their destined purpose. . .

Structures that are in process of transformation lead into societies and communities which are more concrete than structures and usually too complex to be described in terms of systems alone. . .

## **APPENDIX FOUR – societies, symbioses and structural cooperation**

J. G. Bennett *The Dramatic Universe Vol. III* p. 230

### **SYSTEMS AND SOCIETIES**

Whenever we stop to examine our immediate experience and ask the question: what is before me here and now? we discover an **organized complexity**. This makes it as certain as anything can be that complex organizations are universal. Closely connected with this characteristic of all possible experience—perhaps identical with it—is the omnipresence of **structure**.

Up to the present stage of our enquiry, we have adopted the hypothesis that structures, as primary elements of experience, can be represented as Systems and that 'Systematics' is a perfectly general instrument for interpretation of all possible situations. This is, to some extent, a reversal of views still widely held that the primary elements are 'matter' and 'mind' and that the structure of the world is due to the 'Laws of Nature'. In Volume I, we reached the conclusion that the only laws of nature consist in the determining conditions of space, time, eternity and hyperaxis and that these alone do not account for the organized complexity of our experience. In spite of the success of systematics in showing the universal character of structures, its application is limited by the requirement that complex situations should be reduced to sets of **terms** each identified by a **character**. The definition of a system as a set of independent but mutually relevant terms, might be expected to lead to an artificial scheme of little use in dealing with the complexity of actual problems. The discovery that, on the contrary, systems are found in every kind of situation, justifies the belief that structures everywhere conform to a relatively simple

series of **models**. A **construction** can be understood as a situation where the *mutual relevance of systems* is significant. Nevertheless, the limitations of systems make themselves apparent when we have to deal with structures of a kind which precludes the assignment of fixed characters and unchanging content to the terms. We have sometimes to take into account the diversities and relevances *within* as well as *between* the terms of a structure. In such cases we go beyond constructions to **societies**. A society has, in general, an indefinite number of members, but these usually fall into distinguishable groups that have term characteristics. Thus, a society can usually be regarded as a set of systems the terms of which are not units but groups of units. This means that a society has a three-fold set of relevances:

1. The mutual relevances of the groups which form the terms.
2. The relevance of the members within each group for one another.
3. The relevance of the systems of the society to one another. This is what gives the construction of the Society.

When, in addition, it is necessary to take into account the relevances of a society within a family of societies in process of interaction and development we shall speak of a **symbiosis**. We adopt this term from the biological notion of different forms of life mutually dependent within a well-defined environment. In our usage, symbiosis is a society that cannot be understood except by reference to the mutual relevance of its member groups and also by reference to the world process in which it occurs. The symbiosis is in process of transformation. It has extension and distribution in space and duration and process in time. It also has an eternal pattern and an ability to maintain its identity, not merely by isolating itself from its environment, but by its own characteristic force. This force is exerted upon the environment and it also acts within the symbiosis itself.

We can conveniently distinguish five kinds of collectivity. [Expanded in Vol IV to include events and history, see below *Historical Structure*]

1. The **Class** in which there are no mutual relevances of the members. The unifying principle is the class-concept. No relevance.
2. The **System** in which there is a single set of relevances as between the terms. One-fold relevance.
3. The **Construction** in which there is a mutual relevance of systems. Two-fold relevance.
4. The **Society** in which there are groups both internally and externally relevant as well as the construction. Three-fold relevance.
- 5 The **Symbiosis** in which there is an outward relevance of the organization to be taken into account. Four-fold relevance.

We shall, in the present chapter, study societies in which the groups are composed of men and women. Since a society has three kinds of relevance, three separate sets of data are required for its description. The first set prescribes the *form* of the society and is composed in terms of the mutual relevances of its various groups. Thus, in a society of nomadic hunters, we may have a tetrad composed of elders, children, hunters and women; each set having relevances to one another that determine the activity of the society. The same society may have a cult based upon rituals and tabus that give it a sense of unity and significance. This will be seen as a pentad with Chieftain or Patriarch, priest or shaman, the warriors and hunters, the uninitiated tribal members and, finally, the Spirit Power or Ancestral Figure in which the society believes itself to be rooted. Again, there will be triads of the families of the society and dyads of male and female principles.

All these systems stand in mutual relevance that collectively form the construction of the Society.



Again, within each of the various groupings there are personal differentiations and interactions which produce the inner life and its potential for transformation. If these are not taken into account, the dynamism of the society is lost. The individual men and women have a contribution to make to this dynamism that the interplay of the groups cannot provide.

Man as a social being is characterized by sexual reproduction. The human dyad of man and woman is also a society, in which the members play distinct roles, but cannot be treated as simple entities. The inner organized complexity of man and woman is a wholly relevant factor in understanding marriage as a social phenomenon. Marriage has a diverse inner life and a form that derives from the cosmic significance of the two principles, male and female, yang and yin, positive and negative that are the source of all the forces by which the world is moved.\*

The social significance of marriage is not confined to the dyadic force-field generated by the conjunction of man and woman. Marriage is also a dynamism in which all kinds of relationship are possible. The triad of father-mother-child is only one of many triadic structures which arise by way of man and woman. The family and the home are tetrads in which activity of marriage takes shape. The spiritual content of marriage is fully exemplified only in the pentad. The sacramental significance of the union of man and wife consists in its reproducing the marriage of Heaven and Earth which is represented by the two triangles of the hexad.

The various systems that are relevant for marriage are also relevant for one another. There is thus a superordinate structure which carries the full significance of the society of man and woman. There is also a marriage symbiosis in which the family takes its place as the primary constructional element in the total human society. In this aspect, marriage acquires the character of an institution linked to cosmic processes of generation and transmission.

Mankind is a society in its own right and it is also a symbiosis that is relevant for the Biosphere and also for the society of essence classes up to and including the Cosmic Individuality. These superior relevances cannot be studied and understood in the same way as we would study the inner structure of the various societies of the human race. We shall therefore divide our investigation into two main stages, one of which will aim at establishing the structure of an ideal human society and the other, the place of the human community within the Biosphere.

#### **THE IDEA OF A TOTAL SOCIETY OF MANKIND**

Mankind presents itself to our immediate experience as an immensely complex structure, which appears to be organized only in groups and not as a totality. Until the present century, the very notion of an all-embracing society of mankind scarcely entered into consideration. Large groups having a common cultural heritage were the nearest approximation to comprehensive societies and none of these comprised more than a tenth to a quarter of the world's population. These large cultural groups, or civilizations, are not permanent structures. They undergo constant change of both extent and content and do not preserve their identity beyond a few centuries. Smaller and more permanent groups occupying restricted geographical regions—nations and tribes—are often more stable, but so far from contributing to an integral social organization, they have tended towards isolation and even mutual hostility.

The search for a complete structure is no more rewarding if we seek for it in the functional activities of different specialist groups of the kind we noted in a hunting tribe. It is only within the last hundred years that functional activities of mankind have been organized on a world-wide scale and these mainly of a technical character such as the International Postal Union. There has certainly been a social evolution from a large number of isolated groups towards a single society of mankind. This evolution is still in progress and indeed it must be admitted that it is at a very early stage. We cannot, therefore, hope to construct a scheme of human society from the data of observation and are obliged to work from our anthropological material and from systematic principles. In this way, we shall try to build up an ideal form of society and

afterwards compare this with the situation as we see it in the second half of the twentieth century of the Christian Era. We shall evidently find an immense discrepancy between the ideal and the actual; but this will serve to indicate the direction that future evolution will have to take.

We start from the hypothesis that the task of an ideal social order would be to promote and direct the course of human evolution towards its highest perfection. . .

## HISTORICAL STRUCTURE

*The Dramatic Universe Vol IV p. 72*

Events are not history, but the elements of the historical process. In order to pass from knowledge of particular events to an understanding of history, we must develop **a theory of historical structure**. Events concentrate significance and interest upon particulars. History expands significance into universals. The step from event to history requires a new set of relevances connected with the purpose or **Plan** within which and towards which the process is directed.

## STRUCTURAL COOPERATION

*The Dramatic Universe Vol IV p. 386*

. . . the influx of a new and immensely powerful influence can be recognized as having reached its maximum intensity in the year A.D. 1848. In the midst of a tense and uncertain political and economic climate a new Master Idea began to find expression in ways that the contemporary world almost totally failed to recognize. Only those whose attention is directed to the *total human* situation are likely to discern the Message of the Age. For others, the Master Idea takes many different forms and may be expressed in ways so different as to appear contradictory. We use the term **Synergy** to express the notion of structural cooperation and we shall refer to the Synergic Epoch as that which began in the middle of the nineteenth century and will probably continue to dominate history for the next two or three thousand years.

The term **structural cooperation** should not require much explanation. It represents a stage of integration in which the parts of a whole surrender some of their independent existence, in order to participate in a higher gradation of being. The ideal marriage in which husband and wife are merged in a common soul exemplifies structural cooperation. The healthy organism is another example where we can see that more than functional unity is involved. The mind of humanity conditioned by a hundred generations of Megalanthropic individualism, and still dominated by the taint of Egoism in the soul-stuff, was far from prepared for the change. The premature explosion of the French Revolution, with the slogan Liberty, Fraternity, Equality, demonstrated the inability of people, however well-intentioned, to live by the principle of Structural Cooperation. Nevertheless, once the moment arrived, the new Master Idea began to influence the minds of men in new and unexpected ways.

As we look back over the short period of one hundred and twenty years since the change of Epoch, we can recognize several forms in which the Idea has already found expression. These include the doctrine of Universal Evolution and the Unity of Life, the theory of Relativity and the rejection of Absolutism, the belief in Cooperation and the need for large-scale organization and the gradual and so far scarcely perceptible transition from emphasis upon man's individual greatness to emphasis upon the greatness of man's collective destiny.

The Synergic Epoch is a stage in the evolution of Mankind marked by a new kind of cooperation between levels, requiring and made possible by, new forms of communication and organization of human societies. The responsibility for human destiny should in future be rather a matter of cooperation between the Orders of society than of the intervention by the Hidden Directorate. For this to be achieved great changes are required.

The Megalanthropic Master Idea had lent itself to absolutist doctrines in politics, philosophy, religion and even natural science. The new Master Idea tends to encourage the synthetic search for structure rather than for analysis of situations in terms of things and laws. The belief in Natural Law gives place to confidence in the structural unity of the Universe, Life and Matter. This, in its turn, leads to relativistic doctrines and practices in all domains of human thought and action. The Megalanthropic quest of the Absolute led to contradictions and absurdities in thought and to monarchy, dictatorship and revolution in society. It was a passing phase in the development of the human mind and it is now giving place to a new phase made possible by the enhanced powers of communication and concerted action that are among our legacies from the Megalanthropic Epoch.

p. 392

We should here note the change in understanding of the **Present Moment** that is implicit in the doctrine of structural cooperation. The belief in the essential separateness of human selves or 'monads', united only in God, dominated the Megalanthropic Mentality. With loss of religious faith, the separateness became complete. The Epoch was thus peculiarly sensitive to the impermanence of existence in time and space. It is not hard to see that the fear of dissolution and the consequent emphasis upon the destructive rather than the creative character of time were shared by thinkers, poets and artists of the Megalanthropic Epoch. The promise of religion, to show man the way to immortality or the liberation from time and change, continued to exert a hold on men until the Master Idea itself had spent its force. In the New Epoch, it is evident that religion must offer a different hope more in keeping with the Synergic Ideal.\*

\* It is noteworthy that this hope has always been included in the Christian profession of faith in the dogma of the Communion of Saints. This dogma was largely incomprehensible to theologians and laymen alike so long as the human soul was regarded as a self-contained entity capable only of *external* communications.

## **APPENDIX FIVE – Exercises used in Gathering VI**

What is really proper to us as individuals and the real present moment is just what is devalued and obscured since we are so much involved in seeking consensus in outward forms with others. The *collective* overcomes the *individual* to the point at which the individual attaches himself to the collective more than to himself. Effective systematics must tap into the actual unique forms coming from within the individual as well as collective syntheses. Most people are not used to bringing into explicit form the 'thinking gestures' arising from within and are therefore dependent on mass images. These exercises are intended to give opportunities for individuals to *find their way in* to their own thought-initiatives, learn to recognize and value them, employ them as a language and integrate them into shareable procedures.

Thinking *about* the exercises will tend to inhibit the *doing* of them. The instruction **just start** is the best that can be. It is the basic 'thinking gesture'.

Some of the exercise may not suit you, but leave you blank. Just do what you can. Sometimes an apparent 'failure' to do an exercise can lead to new insights.

Remember that each exercise results in some visual display involving text that you are likely to be interpreting for someone else. This exposition will help you bring out meanings that simply 'thinking about' may not yield.

### ***ONE - The Conversion of Strings into Structures***

### ***TWO - Alphabetical Progressions***

### ***THREE- The Separation of Form from Content***

### ***FOUR - Drawing Thoughts - MMs of Form***

### ***FIVE - The Generation of Molecules of Meaning from Impressions***

### ***SIX- The Use of Meaning Grids***

### ***SEVEN- Your Own Invention***

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### **ONE - The Conversion of Strings into Structures**

A 'string' is any list or sequence of data, such as is given in 'bullet points'. Given such a string, there is the following procedure.

- Count the number of elements, N
- Select a form of the N-term system with N positions
- Ascribe the elements to the positions
- Identify overlaps and missing items
- Complete by merging overlaps and filling empty positions
- Generate the meta-meanings
- Reveal the new insight

## **This exercise raises awareness of what 'system' and number-term' mean**

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### **TWO - Alphabetical Progressions**

The alphabet gives a form of progression that can be used in place of number-systems.

- Take a topic that interests you and you have knowledge and experience of and go through the alphabet as initial letters for words that name significant aspects of the topic.
- Be sensitive to the progression so that each step from one item to the next brings added value.
- When you have gone as far as you can in the given time, look over the series of ideas (word names) and see if you can identify any non-linear connections.

**This exercise helps understanding of 'progression' and can also be done using the colours or any other spectral range**

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### **THREE - The Separation of Form from Content**

Take any piece of work (in writing) and separate out the 'form' of it. This can take the following ways:

- Simply identify the 'core' statements; count them and arrange in a circle in their given sequence
- Sketch/diagram the flows and pathways
- Identify and express any informing metaphors
- Read and let the text 'seep' into you and then use available visual materials to express how it feels: that is, to go from inside to outside
- Draw/write the process of your thinking as you are engaging with what the text means
- Reduce the whole to one single atom .

In each of these, reflect back onto the material with the form you have generated to see what emerges. It is a re-iteration.

Take a form generated by another person and associate to it to generate a text. Check out this text with the original.

**This exercise stands at the initial position of *structural communication*.**

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### **Commentary**

You have so much material that I would beg you to consider offering your particular 'package of understanding'.

The thing is this. Systematics is an **extreme case** of separating a **form** from a diversity of **content**.

In ordinary life, we don't do this separation. I suggest (as I think JGB did) that this then makes it hard to understand each other: when we come to **read** what someone else says we will be using - consciously or, as is more usual, unconsciously - **our own form**. Therefore, intrinsic in the process will be a clash of two forms.

It is quite rare still for anyone to look into their thinking and writing and uncover what the operating forms are. This is not only rare to do, but is only a beginning, because in order to give

expression to these forms one has to call on imagery, patterns, numbers, whatever (more or less the stuff of symbols) and also realize that the forms one 'has' are always in some way peculiar to you. Only if you have a feeling of there being underlying forms in your thinking and writing will this make any sense to you.

One might imagine great thinkers delving into themselves to discover forms and then bring them out for others to see as quasi-objects. Bennett did this with his systems. In bringing them out into talks and books, he had to clothe them in some way (use some 'art'). This 'clothing' I sometimes refer to as 'drawing' them. So I both speak my thoughts and then can also draw them. I have to hope that you can imagine and feel what I might mean - which you will, of course, do in your own way.

I would say that everyone has a wisdom about something that would enable them to bring out forms.

If one does this sort of thing, which is just to write something or take something one has expressed (or even read) and then 'draw' (another kind of writing or expression) the forms one resolves into view, then such forms become another kind of writing or thinking. You can be vastly boosted in your quest for understanding. Awareness and expression of forms leads into greater depth. At the same time, you will be **exposed** to others - your very thoughts will be more naked! The action is developmental and will not suit those who are fixated and want to reject contrary views and believe themselves right.

Anyway, one can just do this for a region of knowledge in a very external way or get into it in a more integral and personal way. You can do it by 'systems' or colours or whatever. The actual **discovery** by oneself of underlying forms - no matter how crude they might first appear - is liberating and a beginning of being able to dialogue with others. Why so? Because dialogue only works in fact if the participants can have some awareness of their forms of thought, which are the bases for their sense of meaning; because at the very least a participant must realize that there are such forms at work and that **they will not be the same for others.**

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#### **FOUR - Drawing Thoughts - MMs of Form**

A form is any gestural act that leaves a mark. The mark is then a symbol of the 'mental movement' or 'thinking gesture' and we can learn to use this in a language.

- Make a mark
- Associate it with an image
- Characterize its feeling
- Give it an operational name
- Assemble a set of forms
- Put attention on some theme or monad and draw what comes to you
- Reflect on what you have expressed in more verbal terms.

**This exercise enhances the sense of visual language**

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#### **FIVE - Generation of Molecules of Meaning from Impressions**

This exercise is to sensitize you to meaning in impressions and enable better understanding of *molecules of meaning*. It can be done in three main ways. The second of these in part derives from the *logosafaris* invented by Ted Matchett.

##### **Sitting**

- Relax and take in the view, noting and feeling the 'frame' of your perspective, its extent and wholeness.
- Identify 'molecules of impressions' (e.g. 'the sound of the wind', etc.)
- Note these as titles, feelings, colours, and any other reverberations of meaning
- Count the *number* of them and use a corresponding system representation (e.g. if there are five items then use a pentacle of JGB's format) to display them together
- Create an interpretation of the whole structure as 'telling' you something significant or interesting

##### **Walking**

- Take a walk
- As you walk, be as aware as you can of the 'moments' or 'nodes' that mark the experience (these will develop through memory later)
- On your return, call these moments to mind and note them down as for the 'sitting' exercise
- Structure the moments into a visual display
- Comment on its meaning

##### **Life Story**

- Contemplate 'your life', allowing episodes, features and moments to occur to you
- Capture such moments into a 'molecule of meaning' (as before)

- Let each such moment evoke the next one as it will
- Avoid representing them in chronological or similar sequence, but arrange them in a structural way
- See, given the time available, what questions or insights the generated material produces.

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**This exercise can improve sense of concreteness of MMs**

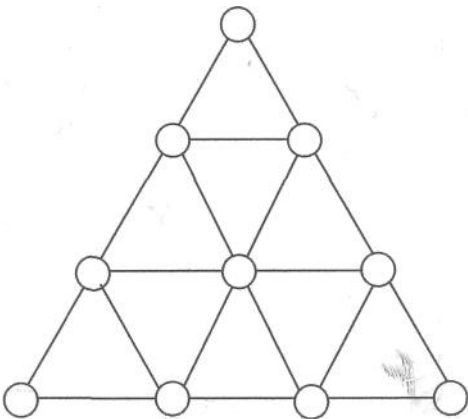
**SIX- The Use of Meaning Grids**

Meaning grids are any regular arrays of points in which relative position can be made meaningful. Unbounded arrays are called *fabrics*. Particular games are played with bounded arrays in which the *shape* of the grid and the *number* of points are significant. A game is played by taking or first generating a set of MMs to be used as 'pieces' and players taking turns in placing them on the given grid. There are these basic moves:

- Select and place an MM
- Move a placed MM to another position
- Remove a placed MM

The first stage of the game is completed when the grid has been filled in agreement amongst the players.

The second stage concerns interpreting the various complexes of more than one MM - lines, areas and so on - for 'deeper' meaning. The overall direction of this stage should be towards greater concreteness.



The third stage opens to making changes in the total configuration or 'game space' which is equivalent to a metaphysics.

Shown here is the decadic meaning game also known as a *glass bead game* from the novel of that name by Herman Hesse. A virtue of this format is that it has three axes and perspectives as well as 'levels' and other features.

See also the paper on 'Systems as Mosaics'.

Meaning (glass bead) games are a way of understanding 'esoteric' and metaphysical systems without involving authorities and belief

**This exercise can change your attitude to thinking and belief**



## APPENDIX SIX– N-logue Meaning Games

### GAME OF ASSOCIATION

This game is monadic in character. There is an open grid with unspecified number of positions. The game can be played with one player, so can be called a ‘thinking’ game.

A move is to generate or select an MM and place it somewhere. Subsequent moves involve placing other MMs in other positions or moving those already placed. Some MMs will remain pretty fixed in place while others may move more (or be de-selected).

The content defines itself as the game proceeds.

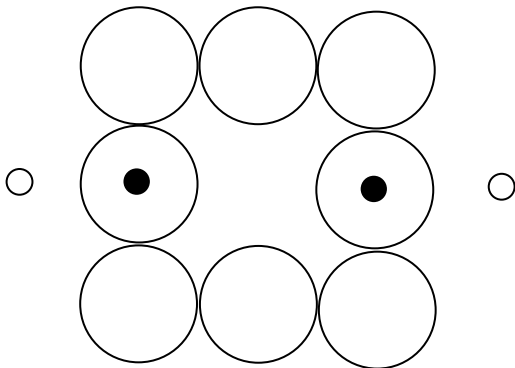
This game underlies some techniques such as mind-mapping but without the imposition of restricted moves and positions. It structures what is called ‘brainstorming’ because it enables recall of MMs and also their relations with each other. It is informative about memory and can be used to structure awareness of a region or a topic by combining MMs of diverse character, including apparently irrelevant imagery.

It can be used by more than person to work together to define a universe of discourse that they share. It allows for emergence, serendipity and change of direction.

Technically, the game evokes what are called *lattices*. These are connectivities that presage systems by involving a set of MMs with a pattern.

### GAME OF COMPLEMENTARITY

In this game, the central position is empty. Play begins with the two players placing an MM on their initial defining position (black circles). The next move is for one of the players to place an MM in one of the other positions, which has to be followed by the other player placing an MM in the opposite position.



Play can be extended by creating new positions to amplify the polar positions (shown as small white circles) whence the moves continue to make new positions and increase the ‘scale’ of the game.

### GAME OF THE THREE GODS

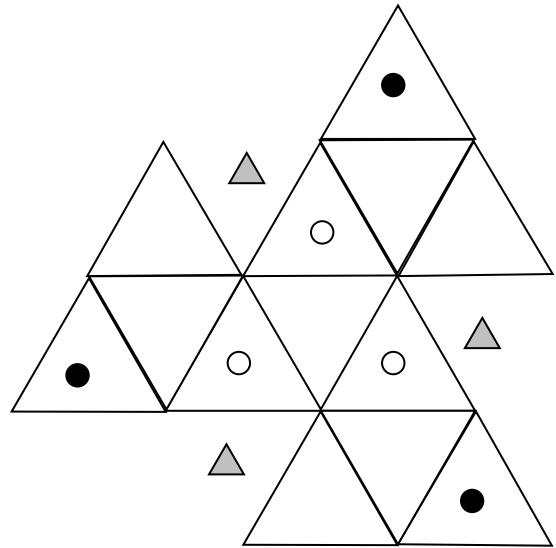
This game is played with three players and follows the same basic rules as elaborated in the Game of the Four Winds (see below). The format of the game space has thirteen positions, or seventeen if play is extended.

Each player chooses an MM to represent their position (black circles). Subsequent moves allow them to place MMs in their own triangle or in their corner of the shared triangle (white circles).

**Version One.** The three players have access to a shared set of MMs generated in relation to a topic and have articulated the three roles enough to begin.

**Version Two.** Taking turns, the three players establish a universe of discourse in terms of their successive generation and placement of their defining MMs (black circles).

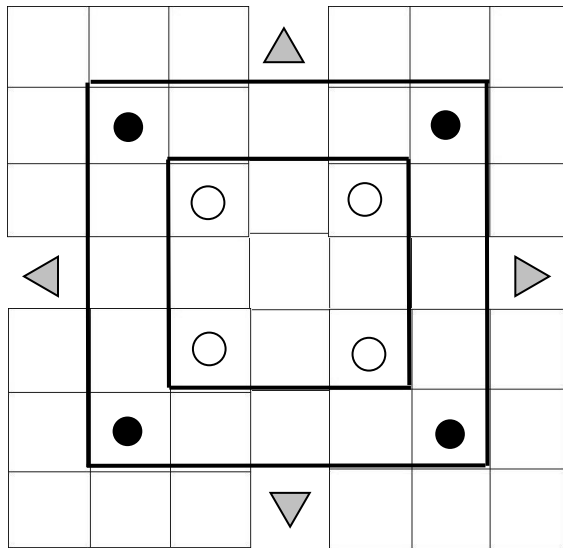
**Version Three.** The game is extended to include a phase in which after the central position is filled, they generate new threads (starting at the positions shown as small triangles).



### GAME OF THE FOUR WINDS

This is a meaning game for four players. There is one central matrix (3 x 3) that they share. Each has his own 3 x 3 matrix square.

In this version, each has only one square in the space of the shared one, marked here by a circle. In a variation, they can share in the larger 5 x 5 matrix.



#### STARTING

Play begins with each player defining his 'world' by selecting (or creating\*) an MM and placing it in the centre of his own square (shown here as black circles). The players take turns and can re-iterate the process. Their objective is to mutually define the space of play in the most challenging way possible.

The central MMs express the *four worldviews or winds*.

\* From now on just the term 'selecting' will be used, leaving to one side the question of where the MMs are drawn from – a pre-existent set, a set generated by the players, a set partitioned amongst the players, or an evolving set.

#### BEGINNING PLAY

The first player selects and places an MM on *his corner of the shared matrix* (shown as white circles). He places the MM *to correspond to the state of the whole board*. For example, the first 4 MMs (dark circles) express a pattern that can be replicated in each of the four matrices and also in the central one.

Each player has to introduce at least two MMs into the central shared matrix. There will be only one who places three.

## CONTINUING PLAY

In subsequent moves, a player can place a selected MM either in his own matrix or in the shared one.

A player can choose to move an MM already placed to another position as his move.

No player is allowed to touch the MMs in the other player's squares.

## FINISHING

The criterion of finishing has to be agreed. There can be different criteria or stages.

- The middle shared matrix is filled in an agreed way
- All the spaces are filled in an agreed way
- Play moves out into the four *channels*.

## METAGAMES

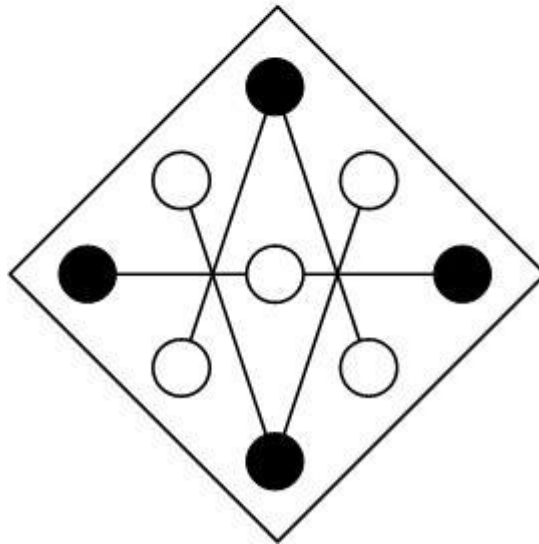
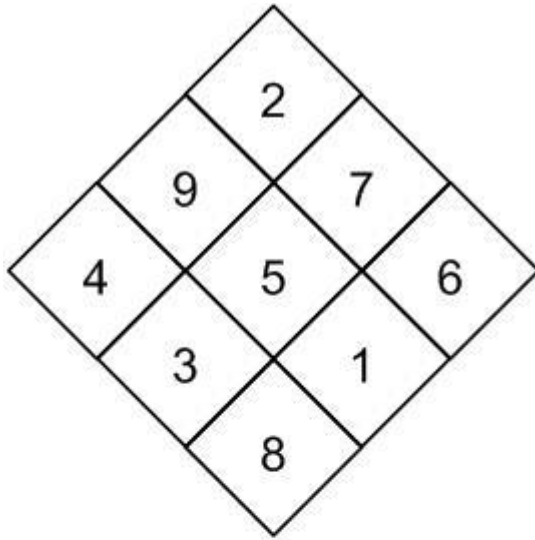
The grid format as shown allows for variations and extensions. The play can extend beyond a shared 3 x 3 matrix to the 5 x 5 and then the 7 x 7 one.

When using the shared 3 x 3 only, the unused squares in the four directions become *channels* and their openings are referred to as *gates*. These channels can play a role in two ways

4. INPUT. The given set of MMs is partitioned and lies in the four channels so that players on either side of a given channel can use MMs from it but not the others. MMs pass through the gates into the channels to be used
5. OUTPUT. The four channels become *springs* when the gates open and *new meaning* is issued. This means that freshly generated MMs come out through these channels (shown as grey triangles). The new MMs arise as the play extends into the larger matrices.

## ULTIMATE ENDS

The symbolic ultimate end is to have decided the central MM and to have generated four new significant meanings for the four directions. That is to say, that the device is a transformer taking in meaning in a certain way and giving it out in a new way; it is engine and generator.



**Sigils of Solomon – from *Magic Squares* by Jeanne-Claude Michaud**

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\* These can be found on the web site [www.systematics.org](http://www.systematics.org)

\*\* <http://www.structuralcommunication.com/sc/ref/sysssc/sys-sc3.html>

\*\*\* See also 'Some thoughts from the Pensingers'  
<http://www.maths.ex.ac.uk/~mwatkins/isoc/pensinger1.htm>

