

ORDINANS

APPROACHES TO ONTOLOGY

ZONES OF EXPERIENCE

OCCURRENCE OF EVENTS

FREQUENT

RANDOM

ZONE OF
EXPERIENCE

REGULAR

RARE

EPISTEMOLOGIES

ORTHOGONAL

BEYOND THE PARTY LINE WE CALL "CIVILIZATION"
POST DYADIC
BEYOND TRUE | FALSE, RIGHT | LEFT, RIGHT | (not even) WRONG
LEARNING TO UNLEARN
QUADRICS, MUTUALITY
ITERATED SYNTHESSES AND ABSTRACTIONS
ALTERNATIVE ANSWERS, SOLUTIONS, AND QUESTIONS
TRUTH DOES NOT EXIST: EVERYTHING IS A SPECIAL CASE
VALIDITY IS LOCAL AND TEMPORAL
THE THEOLOGY OF DIVERSITY
MEGAMIND-MIND-BRAIN
RECOGNITION, TRANS-SENSORY SOURCES PATTERNS
THE SEARCH MYSTERY

SOCIETAL-POLITICAL

IDENTITY, MEANING, VALUES
WIDTH OF NOW SYNCHRONIC | DIACHRONIC
CULTURES, PARTY LINES
PASSING THE TORCH, DIACHRONIC THINK TANK
UNITY | DIVERSITY CONFEDERATIONS

THE CURRENT CULTURE

THE TRIUMPH OF PROTAGORAS
DEIFICATION OF TECHNOLOGY

TYOLOGIES

PSYCHOLOGICAL
SOCIETAL
EPISTEMIC
TECHNOLOGICAL

WIDTHS of

NOW SYNCHRONIC-DIACHRONIC
HERE BORDERS, BARRIERS, CRESTS
VALIDITY IDOLS OF THE TRIBE
CONTIGUITY, CONTINUITY
CAUSALITY
IDENTITY
DIVERSITY

THE PATH TO MADNESS

Every attempt I make to bring order and organization to all of the ideas-notes, scraps, essays-only results in their proliferation. Paradoxically, even when filtering, when making selections, the result is proliferation. In my quest for order, organization, unity, convergence, oneness, more disorder results. The amount of entropy created overwhelms any possible structure created. The contents of my cup defies ordering. Any attempt causes the cup to overflow. At some point, to remain sane, the spigot must be turned off. Ordering requires an infra-structure so that each item will have a place. But ordering is impossible so long as the material accumulated continues to invalidate and render obsolete all the infra-structures.

Must we ultimately choose between closure with order and openness with chaos or is there some middle way? Is incompleteness the price of order [and consistency]? Is disorder [and inconsistency] the price of completeness? It seems that Gödel proved mathematically that such was the case. I can now substantiate his results empirically.

A middle way? We seem to be comfortable only within the castle keep of our representations-our words, images, music, and equations. And we seem doomed to try to represent the universe within the walls of this keep. A few courageous ones-mystics and poets-from time to time venture forth, outside the keep, but then only into the bailey. To venture beyond the outer walls of the bailey in thought or even in imagination is to go mad. The universe protects itself from the unready.

But perhaps in this contest between entropy and ordering, there is a clue to morphogenesis. ~~First we must assure ourselves that there is an important difference between~~ ~~Ordering and homogenizing.~~ The act of disordering may play some role in morphogenesis and emergence, so long as the disordering does not turn variety into multiplicity. Certainly adequate variety is essential to emergence, so proliferation leading to an increase in variety, even as it leads to an increase in disorder, should abet morphogenesis. Thus an ecology, which is an organization containing disorder, is a possible source of emergence and morphogenesis. The record shows that radiants of emergence follow on the extinction of an ecology. Here again the increase in disorder seems to play an important role. Paradoxically, randomness may be the seed of emergence.

To claim that the path to higher order is through disorder certainly qualifies as madness.

ORX

ORDER01.WPD

February 14, 2006

CREATING ORDER

A central problem that has engaged humanity over millennia is how to put meaningful order into our experience. The task is rendered complex because only a portion of our experience is manifest to the senses. While objects and things are perceived, the connections and relations between them are not sensory manifest and must be inferred through interpretations of the various theories and constructs we fabricate for the purpose.

The power of analogous alternative approaches to the

AAA

Why do we seek to order experience?

To make sense

To find meaning

increase certainty

AN APPROACH TO ORGANIZING

First we collect and assemble a pile of documents, files, numbers, experiences, whatever. After the pile reaches a certain size we find we can no longer link each item with its location, this is because in our heads the locations are linked to one another through random associations which were derived in a different ways, some by source, some by date, some by an attribute, etc. Humans, having finite informational processing capabilities, reach the limit of their ability to cope with a set of random associations after the set reaches a certain size. This is manifested to us by the difficulty of retrieval of particular items. At this point we are forced to **organize**.

And what does this mean? What does it mean to organize?

In assembling the pile we **pre-organized** by taking the mental step of associating each item with a location. But to organize we must now go beyond these [item-address] links. We must build an [address-address] set of linkages. That is the addresses themselves must be ordered in a more regular way than exhibited by our original set of random associations. This requires an abstract infrastructure possessing certain symmetries. (Since symmetries have the property of simplifying an arrangement to our perceptions.) After we have put together such an ordered address infrastructure, we can then link each item to an appropriate address. We thus see that organizing has two operations: A) The construction of an infrastructure, and b) the mapping of the items onto the infrastructure.

Symbol

And how do we go about making an infrastructure?

A man who had observed some Buddhist monks, asked what do you monks do? A monk answered saying, "We eat, we sleep, we walk, we sit". The man replied, "So what? I eat, I sleep, I walk, I sit". The monk said, "Yes, but when we eat we are aware we are eating, when we sleep we know we are sleeping, and when we walk we know we are walking. That is the difference". In organizing at each step we must be aware of what we are doing.

One way to create an infrastructure is 'bottom up'. This involves beginning with the items themselves. Items are put in juxtaposition with one another and commonalities and differences are recorded. After much re-juxtaposing, the records will point to 'commonality clusters'. These clusters or categories must then be given labels. Items are then given a surname which is that of the category cluster to which they belong. But the process must be iterated. The items within each cluster are again discriminated and sub-clusters formed. The sub-clusters are labeled and these labels become the second name of the items. The process is continued as far as resolving power permits. The result is an infrastructure known as a tree. An outline is a common example.

THEOLOGY: CENTURY 21 PART II

- 3. Thou shalt have no other gods before me.
 - 4. Thou shalt not make unto thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth beneath or that is in the water under the earth:
 - 5. Thou shalt not bow down thyself to them, nor serve them:
- Exodus 20: KJV

The Deity is making it clear that He is not like anything on earth, and to make an image of something on earth and pretend it is God, is an insult which will be punished. Likenesses of anything that is on the earth evidently includes man. Thus the Deity wants to make clear He wants no anthropomorphic projections put on him.

The fundamentalist interpretation of the commandment is that it is sufficient to destroy graven images in order to fulfill the commandment. [e.g. the Taliban's blowing up stone carvings of the Buddha in Afghanistan.] But ^{more} ^{deeper} sophisticated interpretations of the commandment go beyond images of birds, beasts, fish, and humans and include anything we create and worship. This interpretation creates a real challenge: Do not worship the King, the Emperor, the Pope, and do not worship money, power, fame, and all the cultural institutions we do serve, (even if we don't actually bow down). *the flag*

Then, there is a third interpretation: We must not substitute anything at all for God. This would include any teaching [Bible, Koran, etc] or any teacher, [Moses, Jesus, Mohammed etc]. God is not to be replaced either by His Creations, or by the "Word of God". Nonetheless, we either project a message onto the Deity or project the Deity onto a messenger. While God cannot be defined nor described by any set of attributes, we continue to anthropomorphize God. We insist He has to be like us. If there is creation, then there must be a creator. If there is a design, then there must be a designer. All anthropomorphic projections!

It may be that scientists who seek to interpret the world in terms of processes, are closer to obeying the commandments than are the theistic anthropomorphists. A process is not the likeness of anything in the heavens above, the earth beneath, nor the waters under the earth. God may not be a Being, God may be a Process. And the process scientists suspect is chance or randomness. (While this is less anthropomorphic, it still is anthropomorphic.) Are we to accept that God and Randomness are one and the same? No! But there are vectors that point to some overlaps. First, neither God nor randomness can be defined. Both are too complex for our limited comprehension. Second, an ancient Vajrayana description of the creative process has Tathagatas juxtaposing random elements in the Shunyata to effect existence. Creation by the ^{not from} random! Third, white noise modulating white noise effects a gaussian or bell shaped probability distribution. And successive iterations reduce the dispersion, with convergence to a Dirac function. Again creation by the random.

^{ca} As ^{from} Rabbi has said: God is not a noun, He is a Verb.

"God is a Verb"

- Rabbi David A. Cooper 1997 IV-I-3

If man is in the image of God
and we are precluded from worshipping images,
Man should stop worshipping himself.

NOISE→FOOD

Several years ago I bought an Apple computer and found that it was supplied with a good random number generator. I wrote a program in which I modulated white noise with white noise and was totally surprised to discover that the result was a gaussian. Further, every time I iterated the modulation the variance decreased, the gaussian became sharper. After a few iterations the curve approached a dirac ^{δ} function. This process could very properly be labeled "localization".

At the time I had never heard of central limit theorems, a class of theorems that state: Given a sequence $\{X_1, X_2, \dots, X_n\}$ of independent random variables, then the function,

$$\left(\sum_{i=1}^n X_i - m_n \right) \div \sigma_n$$

where m is the mean and σ^2 the variance, approaches a gaussian or normal distribution, as n becomes large. In other words the superposition of large numbers of random distributions (such as noise) leads to a gaussian. My experiment on the Apple proved to be a case of central limit theorems. (Powerful to discover theorems using injunctions, read algorithms, instead of logic.) [But what of iterations decreasing the variance?]

All of this takes on additional interest when we examine the process of collapse of a wave function. The Schrödinger time evolution of the wave function of a particle goes from that of a localized gaussian to one with ever increasing variance and non-localization.¹ This is the inverse of the localization that happens under the iterated central limit theorem process. One could say that decay results from no longer being fed by some source of randomness or noise. Ghirardi-Rimini-Weber point out that a particle's state may be altered by receiving a "hit" [modulation] from a sharp gaussian function. This in effect would restore localization as in accord with the central limit theorem process. Afterwards the particle resumes the path of Schrödinger spreading. The GRW idea is that a particle is "fed by gaussian food", or it seems more fundamental to say since gaussians themselves are built from white noise, that the ultimate food supporting all matter is white noise energy. Can we then conclude that the cause of decay and non-localization is some form of starvation, lack of access to white noise? Such would constitute a very generalized notion of the Second Law of Thermodynamics!

It is most interesting to compare the central limit process with the actions of the Five Tathagatas. The Vairacona-Akshobya process is the original self-modulation of white noise, creating a gaussian non-localized particle. Ratna Sambhava, Amitaba, and Amoga Siddhi represent subsequent iterations resulting in the increasing localization of energy and the creation of what we call material reality.

¹See, for example, Penrose, "Shadows of the Mind" p 332

The original energy is in the form white noise.

→ particles → molecules → organisms →
by synergistic processes

It is selected, filtered, absorbed, digested, transformed
by other processes

VAIRACHONA	PYTHAGORAS	MOSES	WYCLIFF
AKSOBYA	SOCRATES	JESUS	HUSS
RATNA SAMBHAVA	PLATO	ST. JOHN	ERASMUS
AMITABA	ARISTOTLE	ST. PAUL	LUTHER
AMOGA SIDDHI	ALEXANDER	CONSTANTINE	REFORMATION

VAIRACHONA	COPERNICUS	LORENTZ	PLANCK
AKSOBYA	GALILEO	MINKOWSKI	BOHR
RATNA SAMBHAVA	KEPLER	EINSTEIN	HEISENBERG
AMITABA	NEWTON	SCHWARZSCHILD	SCHROEDINGER
AMOGA SIDDHI	ROYAL SOCIETY	EDDINGTON	DIRAC

VAIRACHONA	LEIBNIZ	FRAZER
AKSOBYA	TURING	JUNG
RATNA SAMBHAVA	SHANNON	WILBUR
AMITABA	VON NEUMANN	CAMPBELL
AMOGA SIDDHI	IBM Microsoft	NEW AGE

VAIRACHONA	PRECURSOR
AKSOBYA	SIGNIFICATOR-ADVOCATE (SACRIFICED)
RATNA SAMBHAVA	GESTALT DEVELOPMENT--RE CONTEXT
AMITABA	DETAILED DEVELOPMENT--RE CONTENT
AMOGA SIDDHI	APPLICATION

Isaac Asimov said, " Magic does not work
but belief in magic
does work"

Here we have Aksohya in operation

11/23/94

when we put the 5 Tathagatas in juxtaposition
with the first Chapter of Genesis

• Yahweh says, "Let there be..."

Here Yahweh ~ Vairacana + Akshaya

• And Yahweh saw that it was good

Yahweh ~ RA ~~is~~ ~~not~~ ~~Samant~~ ~~the~~ ~~confirmer~~

but had to wait to see whether it was good - whether
it fit (consistent?) with what already was

• God created man to play the role of Amitaba

To explore all the possibilities

in what had been created

This is our role: Exploring in possibilities
inherent in creation

• Finally - with what has been learned

Amoga Siddhi becomes the perfect creator/explorer

MORE ON EDDINGTON AND WHITEHEAD

THREE ONTOLOGICAL AXIOMS:

Pythagoras speaks of the necessity for there to be more than one in order for there to be existence.

Whitehead speaks of the necessity for recurrence in order for there to be recognition and perception.

Eddington speaks of the necessity for difference, for non-sameness in order for there to be detection and perception.

Building on Pythagoras:

For Pythagoras the cardinal number one did not exist. Only when cardinal number two came along did one and two both come into existence. (It is easier to see that ordinal number one could not exist by itself.) Similarly the notion of universe, meaning one totality, is meaningless. There can be no one universe, it is a misleading concept. There can, however, be many universes, but this negates the 'uni' in universe. Totality of everything cannot exist until it in some way divides itself into (at least) two parts, where there is both an element of similarity and an element of difference in the parts. i.e. there is some form of symmetry. For the concept of symmetry implies the existence of both a difference and a sameness in the parts. Thus symmetry is seen to be a foundation stone of existence.

The notion of 'degrees' of existence can be introduced as a measure of the number of symmetries that exist. Whenever two 'opposite' parts possessing a symmetry come together in such a way as to effect oneness by obliterating the symmetry, they lose one of their degrees of existence.

These pythagorean concepts are implicit in the creation story given in Genesis 1. The void, the nothingness, the emptiness, the sunyata does not exist. The separation of the emptiness into light and dark, into firmament and waters, ... brought the world into existence. Light and dark, firmament and waters, possess symmetry. But there are also 'meta-symmetries' the symmetry between void and existence, and the symmetry between Creator and creation, that underlie all else. These meta-symmetries are symbolized in the Tibetan Book of the Dead by the symmetric Tathagatas, Vairachona and Akshobya who also demonstrate the necessity of self-reference for all existence.

We can only surmise that 'in the beginning' the nothingness or void resolved itself into four: Into the dyad of void and existence and into the dyad of Creator and creation. But the void was there both before and after creation. It is the symmetrical component to all existence which sustains and preserves existence. On the other hand, Creator and creation both are sub-components of existence. The Creator, God, came into existence only when creation came into existence. But the void remains, it is outside time. It is the external to all creators and creation from which innovation and change arises. Only from the void can come the new symmetries leading to further creators and creation, to new theophanies and metanoias, to new heavens and new earths.

Don highlights "lost Christianity"
but he highlights so much of it,
it is the same as being unhighlighted

Universal sameness = non-existence
Eddington

"Repetition is the only form of permanence
that nature can achieve."

George Santayana

"Reality is acquired solely through repetition
or participation ... The man of a traditional
culture sees himself as real only to the extent
that he ceases to be himself and is satisfied
with imitation and repeating the gestures
of another"

Mircea Eliade

O n R e c o r d s

In the Tibetan Book of the Dead reference is made to five Dyanni Buddhas or Tathagatas. These are neither persons nor gods but represent processes having to do with creation, life and death. Necessary in the process of creation is a self-referential 'sealing' of the act. The first Buddha pours information into a form, the second Buddha enables the self-referencing of the form. The basic idea is that without self-referencing there is no existence. This seems strange on first inspection, but as we look more carefully at existence, we begin to perceive the validity of the idea.

In the book of Genesis, whenever God created something He then examined it and sealed it with "God saw it was good", an act of self-referencing. In the twentieth century we have come to see that without certain 'papers' that self-reference us, we are nothing. Birth certificates, social security numbers, green cards, etc. are essential to our having societal existence. It is a fact that records, or some other form of second self are essential to existence. When the great library at Alexandria was destroyed, the ancient world which it recorded ceased to exist.

During the period of heightened fear of nuclear war during the cold war, underground caverns were prepared in which banks, investment firms, insurance companies, etc could store their records. If a nuclear war destroyed the records, even if something was left of life and property, the social order would be dead. Who owned what, who owed what, etc if destroyed would wipe out the linkages that hold a western society together.

When we destroy the records we destroy existence. What is clear to us in a societal sense is held by the Book of the Dead to be true in a basic ontological sense. Without both the form and its self-referential echo (e.g. a record) being intact, an entity does not exist.

Any society, culture, group, individual can be destroyed by destroying its records. This is because all entities are composed of monads (or nodes) and links. If the links are destroyed, the entity is destroyed, and unless the monads find new linkages they, being all alike, cease to exist by Eddington's ontological principle: "Uniform sameness is indistinguishable from non existence."

Re Self-Reference:

The Pope says he is infallible

- a self-referential statement
making him infallible.

The Jews say they are chosen

- a self-referential statement
making them chosen

Ontological Loops

THE UR VIBRATIONS

Some recent ideas in modern physics have pointed to the underlying structure of the physical world as being not matter but rhythm. Some physicists, such as J.A. Wheeler, even hold that the ultimate or ur reality is thought. Similar ideas have been around for a few decades:

"The cosmic diagram suggests some form of resonance as the process of morphogenesis, as sand collects at the nodes on a vibrating drum head, matter concentrates at nodes corresponding to the set of frequencies $S^{3/2-v} f_0$. This raises many physical questions. Most importantly what is it that is pulsating or vibrating at these frequencies--some substratum, matter itself, or what? Analogies to familiar equations suggest that from the cosmic diagram, we have a set of eigen values representing mass levels, energy levels, or frequencies that are solutions to some 'cosmic wave equation'."

from Hierarchical Structures in the Cosmos, 1969
Hierarchical Structures, Whyte, Wilson and Wilson

[The following from notes Santa Fe, New Mexico, 95/07/13]

The ur vibrations in the world result in infinite bonding and dissolving combinations. This is the nature of Sunyata, the ur process manifesting as impermanence and sustaining change.

In the absence of iteration of this repetitive bonding-dissolving operation nothing permanent occurs. A 'Parmenidean' factor beyond the fundamental bonding-unbonding must be present. Some bonds must survive to serve as the elements of more complex bondings. We then ask, what processes can sustain a bonding? What is there that renders iteration possible?

One candidate is two level bonding. One level bonding is forever immediately dissolved. But two level bonding can be both sustainable and iterable. The Tathagata Akshobya symbolizes the processes leading to sustainment and allowing iteration. We may think of the 'Akshobya operation' as self-reference, naming, sealing, mirroring (but not cloning).

Another process lies in the domain of the Tathagata Ratna Sambhava. This consists giving an address to a bonding, a reference to space and time, thus establishing two levels, address and content.

A triple bonding is also one capable of sustainment. While the probabilities of single encounters or two element bonding are high, the probability of three element bonding is remote.

Primitive peoples invariably add flaws to their craftwork. This perhaps to avoid perfect symmetry. What do they know that we don't know? Does perfect symmetry recollapse back into the Sunyata and needs an asymmetry producing flaw to afford sustainment.

Perfect symmetry, an n -dimensional sphere, is stable without the "flaw" nothing will happen

Broken symmetry survives } 2
Perfect symmetry re-collapse } 0

The tea kettle:

I close the lid with a quick push, I do not get burned

The flow of energy when tightly packaged as in a blow is fast, the flow of energy as with heat is much slower

$$\frac{dE}{dt} = f(\text{compactness of } E) = \frac{E}{R^3} = \rho c^2$$

$$\int dE \cdot a$$

Levels of bonding have different orders of lifetimes. This is apparent in the meso and macro worlds, the more massive structures having the longer lifetimes. It presumably is also true in the micro and micro-micro worlds. The elemental bonding to which we have been referring may have a lifetime of the order of a few planck units, i.e. the order of 10^{-42} seconds.

It also appears that at higher levels the bonded structures acquire a certain exclusiveness, that is respond only to certain eigen values. We see this in atomic and molecular spectra and in a different form, but conceptually the same, in the ability of diverse species to mate only with 'eigen-species'. This is a boundary condition for natural selection.

At a certain level of sophistication, the bonding structures acquire the ability to replicate and to beget. [Replication or cloning produces identical elements, while begetting is capable of creating variant elements that are also capable of replication and inter-bonding.]

Recapitulating:

Sustainment is effected by

1. Two or more levels or dimensions
2. Some form of self reference, such as mirroring
3. Simultaneous triple or higher encounter bonding
4. Additional sustainment is effected by linking to other bonded structures.

[1,2 and 3 are Vairacona-Akshobya, 4 is Ratna Sambhava]

Are bonds intersects or unions and what role does the degree of overlap play?

[Add material on standing waves]

REL/THEO

GURDCOSM.WP6

April 6, 1995 rev April 14, 1995

GURDIEFF'S APPROACH TO COSMOGONY

APOPH¹ASIS
VIA NEGATIVA

Gurdieff posits a cosmogony consisting of successive stages of ~~of~~ liberation instead of successive stages of creation.

- 0.) Prior to the first creation there was total and universal potential. Then there was the formulation of constraints, the making of the laws. that is, In the beginning was the word.
- 1.) The first creation was subject to all of the laws. It was the creation of inorganic matter and was subject to impermanence and decay. (Maxwell-Boltzman statistics?)
- 2.) The second creation was that of systems free of the Second Law of Thermodynamics. These were systems effecting mutual sustainability, living systems that locally violated the second law. (Fermi-Dirac statistics?)
- 3.) The third creation was that of systems free of determinism, systems that could make choices.
- {[4.) The fourth creation: Systems with the ability to create situations and objects of choice.

This Gurdieff cosmogony results in the usual morphological scala. However, it is not given in terms of evolution of acquired attributes, but rather in terms of loss of constraints. Initially, the total potential was universally present, then there was the creation of constraints and then the stepwise liberation from the constraints. In this view creation takes on new meaning. **Creation** is the process of delimiting potentiality by the making of constraints. **Evolution** is the stepwise liberation from constraint.

We may modify this as follows:

- 1) Vairacona effects an emergence from the Sunyata, which is the the repository of infinite potential, by establishing constraints. The process follows from [1- α] rather than from α , that is by negation. Here 1 stands for infinity, everything.
- 2) A stepwise removal of constraints by Aksobya. Actualization
- 3) Testing of consistency and harmoniousness by Ratna Sambhava.
- 4) Exploring the possibilities, uniqueness and spontaneity by Amitaba.
- 5) Modifications (actions) by Amoga Siddhi.

Liberation here can be equated to the idea of sacr^alization. With each liberation, the world is sacr^alized. The final goal is the return to the original pre-constraint condition. The world will be completely sacr^alized when total potential is regained.

While Siva is called the destroyer, he is in reality the creator in that what he destroys are the previously imposed constraints. Vishnu/Krishna is the preserver/corrector

We may also think of the crucifixion and resurrection as constraint and liberation. The deeper symbolism of the bread and wine is constraint and liberation.

Much the same process is followed in quantum mechanics. The quantum world corresponds to the Sunyata. Whenever an observation of measurement is made, the wave function collapses and a wave or particle is created. Observation and measurement are the placing of constraint. Actualization is the process of localizing the global.

In the experiments about atomic events we have to do with things and facts, with phenomena which are just as real as any phenomena of daily life. But the atoms or elementary particales are not as real; they form a world of potentialities or possibilities rather than one of things or facts.

Heisenberg

from Polkinghorne's "Quantum World" p81

- The three bodies:

Dharmakaya	pure, clear, empty body	Vairachona
Sambhogakaya	blissful, harmonious body	Ratna Sambava
Nirmanakaya	varied, unique body	Amitaba

- cf

astral body	global, infinite potential
etheric body	semi-global, eternal, exist for others
physical body	local, manifested in spacetime matter

*The New Jerusalem is not a constructed world-image
but a pre-existent archetype which reveals itself*

- John Michell: "The Dimensions of Paradise" p207

The Being-Function Matrix shown in Figure 2.2 specifies the functional attributes at each level of consciousness. The specification of learning outcomes of the TTM used for environmental education should be guided by this matrix.

FIGURE 2.2

THE BEING-FUNCTION MATRIX

Levels of Consciousness	Sensory/ Motor	Affective	Intellectu ^{al} al	Inter- personal
I = I; Creative	<ul style="list-style-type: none"> • Creative expression in material objects 	<ul style="list-style-type: none"> • Ecstasy • Illumination 	<ul style="list-style-type: none"> • Transcendental insight • Hypothesis creation 	<ul style="list-style-type: none"> • Inspired leadership • Power to create situations
I-Thou; Conscious	<ul style="list-style-type: none"> • Insight into workings of Nature 	<ul style="list-style-type: none"> • Impartial judgment • Power of decision 	<ul style="list-style-type: none"> • Originality in thought • Clarity 	<ul style="list-style-type: none"> • Understanding of people • Friendship
I-It; Sensitive	<ul style="list-style-type: none"> • Adaptive skills • Craftsmanship 	<ul style="list-style-type: none"> • Emotional stability 	<ul style="list-style-type: none"> • Logical reasoning • Consistency 	<ul style="list-style-type: none"> • Group sense • Cooperation
I-Not I; Automatic	<ul style="list-style-type: none"> • Nonadaptive manual skills 	<ul style="list-style-type: none"> • Motivation without understanding 	<ul style="list-style-type: none"> • Memory and verbal association 	<ul style="list-style-type: none"> • Herd instinct • Collective predictability

LEN et AL C.1970

ALTERNATE WAYS OF LOOKING AT THE WORLD THE CALL FOR RE-ENTITATION

Entitation is vastly more important than quantitation. It is perfectly meaningless to measure something with higher and higher degrees of precision, if the thing you measure is more or less meaningless....A real breakthrough, scientifically at least, to me is when somebody has sufficient creative imagination--and courage to follow up, which may be even more important to say "Let us look at the universe in terms of some new kinds of entities, some new kinds of units; or, what really comes to the same thing, in some new way of combining units"; because combining units gives a new unit at the superordinate level.

Ralph Gerard--Hierarchical Structures p219-220

IN WHAT WAYS MAY WE RE-ENTIFY?

SOME CANDIDATES:

- | | | |
|--|---------------------------------|------------------|
| 1) By signification | 5) By the construction of duals | <i>dyads</i> |
| 2) By exploring new units, (Gerard) | 6) By non-Aristotelean logics | <i>quadrads</i> |
| 3) By interchange of levels | 7) By morphological negation | <i>epaphatic</i> |
| 4) By <i>peri-dia</i> interchange <i>and syn-dia</i> | 8) By Vajrayana meditation | |

SIGNIFICATION:

The material world is presented to us by sensory data. However the way it is entified is not an imperative of the data. Experience leads us to significate certain configurations, (patterns of entitation), as important to our successful functioning, ignoring or downplaying other entitations. Thus our world is basically entified by our significations, more in the social order than in the natural order. [include the examples of how frogs and hares significate-entitate the world]. Indeed to entitate and to significate can come to mean almost the same thing.

UNITS:

When we translate our usual unit systems (cgs, SI, English,..) into "natural units", that is those based on the fundamental constants of physics, c, G, \hbar ... hitherto unnoticed relationships become manifest. For example, the relation between the Planck Particle, (length 10^{-33} cm, mass 10^{-4} gm, time 10^{-42} sec), other fundamental particles, and certain ubiquitous dimensionless numbers.

LEVELS:

Examples could be the exchange of balls and boxes as employed in statistical mechanics, or the exchange of address and content.

PERI-DIA: *or synchronic-diachronic*

This involves the exchange of Synchronicity and Causality.

DUALS:

From projective geometry (flat Euclidian space)

Two points determine a line

EXCEPT when the points coincide, then
No line is determined, but
an infinite number of lines are possible
through the two points

Two lines determine a point

EXCEPT when the lines coincide, then no
point is determined, but an infinite number
of points are possible on the two lines.

In addition there is also the instance with no
dual: Parallel lines.

The interchange of line and point is an example of re-entification by the interchange of nodes with links or of existents with a relations.

[Of additional interest here is exception to the law of the excluded middle. The statement "Two points determine a line" is both true and false, depending on the disposition of the two points.]

Duals defy LXM

LOGIC:

Alternate logical systems, involving A, no-A, not-A, no-not-A, etc.

NEGATION:

Approach as in sculpting, defining through removal of what does not belong. *Apophan*

VAJRAYANA MEDITATION:

The Buddhist notions of illusion come down to mean that the way we entify the world is quite arbitrary. That is that there exist many 'valid' paths across the world map. While Vajrayana meditation by itself does not lead to a re-entitation, it dissolves the mind sets that stand in the way of recognizing and creating alternative entitations.

Sometimes the most important entities are invisible. Oftimes we refer to these invisibles as concepts. Only in the 19th century did the concept of **energy** become manifest and only in the 20th century has the concept of **information** become manifest. I feel it is correct to include concepts with entities, even though they are invisible and abstract, for concepts are the primary blocks by which we entify the world.

FIGURE AND GROUND

Figure is not perceptible by figure without both having the same ground.

Figure is continuous and mortal, ground is granular and immortal.

Ground is Parmedian, i.e. changeless. It lies outside time.

Figure is illusory in the sense that it changes depending on the ground that supports it.

Paradox: Figure cannot exist without ground for figure seeks to exist for itself. Only that which does not exist for itself can be self-existent. Such requires no ground for it is ground.

Figure has many names. Ground has many names. Uground is nameless.

A symbol is a figure that represents ground.

There exists a species of auto-grounds that interact to produce figure. e.g. white noise.

An auto-ground is Uground or SAT. BRAHMAN

ALTERNATIVES--APOPHASIS--ANONYMITY

ALTERNATIVES:

The real measure of a person's wealth is in the number and variety of alternatives to which he or she has access.

The motorists of Los Angeles have been well trained in understanding the value of access to alternatives. Almost every week there are radio advisories telling drivers in some part of the city to take alternate routes. L.A. drivers have learned to keep a collection of alternative routes always handy. If, as is often claimed, that what goes on in Los Angeles is the wave of the future for other cities, then the age of appreciation of alternatives is soon to be upon us.

A pioneering recognition of the value of alternatives was made during WWII by the astrophysicist Fritz Zwicky at the California Institute of Technology. Zwicky developed a method which he called morphological analysis that allowed him to realize several alternate solutions to a problem. Using this method he invented a plethora of jet engines, including ram jets, pulse jets, ... independently coming up with the German V1 and V2 weapon systems. Zwicky felt that too long humans had not only been content with a single solution but had fallen into being dogmatic about that single solution, persecuting those who proposed alternatives. The time had come to change this and welcome all possible alternatives as providing a rich smorgasbord from which we could choose the best solution for the situation at hand. It is this philosophy that causes us to include ALTERNATIVES in our mantra for the 21st century.

Perhaps one reason that humans have been content with preferring the single solution to multiple solutions is that they consider redundancy to be inefficient. (Also decisions are a nuisance to be avoided whenever possible). But if nature goes heavily into redundancy there must be some wisdom involved that we are ignoring in our pursuit of efficiency. In the long term redundancy may prove to be of far more importance than efficiency: Important for survival, important for innovation and important for emergence. Since actualization exhausts potential, something is required from time to time to replenish potential. We may speculate that it is variety itself that fuels potential and it is depletion of variety that removes potential.

Pertaining to this, Stephen Jay Gould has shown that what bio-evolution is really about is not the development of complexity, of more complex organisms, but the increase of a greater variety of organisms. That is, evolution is in the business of increasing alternatives, and hence overall potential.

*Evolution → complexity ↑
Emergence → diversity ↑*

APPROACHES TO ORGANIZATION

The stages of arriving at an ontology:

- ▶ Creating an epistemology or organizational infrastructure.
- ▶ Collecting experiences
- ▶ Placing the experiences in the proper boxes of the infrastructure.

This process is cyclically repeated over and over as new experiences are collected. However, multiple epistemologies should be employed so as to disclose facets of REALITY, each ontology being but a facet of REALITY.

The stages in the apophatic approach:

- ▶ Start with dyads and generate as many parameters as conceivable.
- ▶ Extend each parameter to as many values as possible, thus generating as many models as possible.
- ▶ Systematically falsify the models.

This approach is based on going beyond "an" and "the" to "all". It is Zwicky's morphological matrix subjected to Popper's falsification. Mathematics is an example. It is the task of mathematics to generate as many constructs as possible. It is the task of science to decide which of these constructs contains the observed world.

The stages of synthetic development:

- ▶ Juxtaposition for consilience = finding the commonalities contained in the juxtaposed elements.
- ▶ Juxtaposition for symmetry = finding the symmetries contained in the juxtaposed elements.

Salutatory juxtapositions
Random juxtapositions

Although imagination goes beyond experience, it is nonetheless based on and therefore limited by experience. In other words the horizon of imagination extends beyond the horizon of experience but is nonetheless a horizon beyond which we do not conceive. The horizon of experience is the horizon of perception, the horizon of imagination is the horizon of conception. Both are horizons beyond which we are unable to go.

Increase in conception derives among other causes from increase in perception (eg. telescopes,, technology)

*The initial condition determines
the boundary condition*

NOVO COGNITIO TOWARD COGNITIVE EMERGENCE

*We Shall Require a Substantially New Manner
Of Thinking If Mankind Is to Survive.*
- Einstein

In company with Einstein there are many 20th Century scientists, philosophers, authors, and theologians who have called for a re-examination of the basic canons of Western thought. And currently entrepreneurs and industrialists are putting a premium on those who "can think outside the box". What this says is, that in spite of the many successful theories and models that have been created using the cognitive tools of Aristotle, Descartes, Bacon, and Newton, we have not become the kind of architects who can successfully design holistic and coherent structures that validly accord with the totality of our experience. Among the disciplines into which we compartmentalize our knowledge and methodologies, science has arguably been the most successful, and many have felt willing to delegate all enquiry to the methodology of science. But in the past half century science itself has demonstrated the limits of its methodology and scientists have become prominent among those who are calling for new ways of thinking. .

Thinking in the box for ways to think outside the box may get us nowhere, but that being where we are, that is where we must begin. So an "in the box" approach following traditional thinking patterns is our immediately available launch pad. How do we organize our thinking processes? Perhaps by sequential steps.

COGNITIVE STEPS:

- I. Data Collection
 - Involves input channels, [duplexing?]
 - Perception [sensory], Intuition, Recognition, Synchronicity, Serendipity
 - Involves conceptualization
- II Data Organization
 - Involves infrastructures or paradigms, Matrices, "Ground"
 - Involves filtering and signification
- III Data Processing ^{??} *Assigning or self-assigning*
 - Involves reconceptualization
 - Involves representation
 - Involves aggregation and de-aggregation
- IV Interpretation of 'packages', concepts and theories
- V Evaluation and Implications of the 'packages'
- VI *Depackaging & Unlearning*

2000
Feb

First, what are our traditional cognitive 'channels'? Where by a channel is meant the mode of data input separate from the mode of data processing. [if mode of input and mode of processing can be separated] We are aware of four cognitive channels. 1) the sensory channel, 2) the intuitive channel, the 3) the recognition channel, and 4) the synchronicity channel.

SOME WESTERN PROPOSALS

Listed here are some suggestions for alternative ways of thinking about ourselves and the world that have been proposed by thinkers from different disciplines.

Fritjof Capra in his book, "Belonging to the Universe", focuses on **new paradigms** for the coming century:

Fritz Zwicky in the book, "New Methods of Thought and Procedure", develops a system he terms, "Morphological Thinking", which focuses on both processing and paradigms.

Lancelot Law Whyte focuses on the paradigm of "Pattern"

Paul Feyerabend focuses on alternatives and the dangers of dogma, and of ignoring or denying phenomena that do not fit with current theories.

William Irwin Thompson has experiments with the technique of "juxtaposition" in which phenomena with no apparent relation to each other are exposed to a "mutual dialogue" with one another to see what emerges.

Carl Jung considers that the phenomenon he calls synchronicity puts current views of induction and probability into question.. White noise modulated by white noise results in a gaussian, and iteration results in ever decreasing dispersions. These require a new look at randomness and probability.

Ralph Gerard calls for depackaging and re-entifying our experiences. Take it all apart and put it together in different ways. The non-localism of quantum mechanics affirms Gerard's call for the need to re-entify.

Claude Levi-Strauss and other structuralists propose going beyond the cognitive habits of establishing commonalities and differences and study the "differences that resemble each other".

The reductionism of John Locke [the explanation lies in the interior] is to be balanced with the contextualism of Ernst Mach [the nature of each object is limited by the whole]. Where we feel the inside [content] is the essence we must examine the role of the outside [context]. Where we feel the context [outside] is the essence we must examine the role of the inside [content] . This includes placing the observer both inside and outside the system.

The ancient symbol of the Uroborus, the snake swallowing itself , what Hofstadter calls a

strange loop, what Blake remarked as "seeing a world in a grain of sand and a Heaven in a wild flower." materialized with the invention of the hologram. This and the knowledge from DNA of the mutual containment of genotype and phenotype all call for an entirely new way of looking at parts and wholes.

Multiple levels must be allowed. The insistence that all phenomenon must at root be of the same substance, matter, spirit, thought, whatever, is a very restrictive thinking box.

The current emphasis on the polarization aspects of dialectics must be replaced with emphasis on the opportunities for emergence.

Dogma must be replaced by alternatives, and even though many of the alternatives contain error, their multiplicity facilitates correction. A paraphrase of Gödel's incompleteness theorem would say that "What is perfect [dogma] cannot be complete, and what is complete cannot be perfect."

Perhaps the most important change in our way of thinking will be to abandon the concept of "Truth". Truth is a reference to some inaccessible whole, but experience is limited to parts, aspects, and facets. What we know may be valid, but its validity is limited in time and space, it is not universal.

SOME EASTERN ALTERNATIVES

The foregoing are all proposals by thinkers in the "Western Box". When we look at some of the traditional approaches of Eastern Thinkers, we see a different box.

Eastern ideas include a basic four fold logic instead of Aristotle's two fold logic, [Escape from the law of the excluded middle]. For example: 1) true, 2) false, 3) both true and false, 4) neither true nor false. In addition the juxtaposing of two dyads resulting in a four fold argument often resolves polarizations.

Eastern wisdom would also say that the West has ignored the importance of nothingness, and non-existence. There are many kinds of nothingness, and as many species of non-existence as of existence. Fractals and matroshka dolls both involve empty spaces, nothingnesses that intervene between somethingnesses. Is the emptiness really empty?

Finally, the epistemology of stillness and silence must receive a place in the new thinking. Both Kukai and Schopenhauer recognized the thought limitations of words, symbols, and images.

THE CALL FOR RE-ENTIFICATION

A call for re-entification is the intellectual counter-part
of a call for spiritual transformation

A word about the initial recognition of elements. I like the word, "entitation", the identification of entity. I assert that entitation is vastly more important than quantitation. A real breakthrough would be when somebody has sufficient creative imagination --and the courage to follow it up, which may be even more important--to say, "Let us look at the universe in terms of some new kinds of entities or modules, at some new kinds of units, and at some new ways of combining them. --RALPH GERARD

Several fundamental propositions are herewith listed to be used in constructing re-entifications. They will be used as postulates.

1. The important jump that must now be made is from the morphological to the functional, from products to processes, from nouns to verbs. .
2. We possess both a set of experiences and a set of beliefs. Our experiences shape our beliefs and our beliefs delimit our experiences. We both believe it when we see it and see it when we believe it.
3. A most important dyad is that of quantity and quality. Quantification depends on measurement which in turn depends on regularity and repeatability. Quality is not measureable and is associated with that which is unique.

PROCESSING EXPERIENCE

VAIRACONA THE SOURCES OF EXPERIENCE INPUTS AND RESPONSE

The source channels may be encountered passively or intentionally. What is called *empirical* is the element of intention included in the following.

Perception: sensory, gestalt perception

Intuition: recognition, revelation

Feeling: emotion, the heart, the spiritual

Imagination: belief

AKSHOBYA THE SELECTION OF EXPERIENCE SIGNIFICATION I

This is about the basis on which experiences are captured, noted, recorded or on the other hand missed, ignored or rejected.

Repetition, multi-occurrence INDUCTION REGULARITY ~~vs~~ ARCHETYPAL

Multi-sensorial channel

Multi-observer, consensus

The Improbable, so rare as to gain notice, cycle or unique

THE REPRESENTATION OF EXPERIENCE SYMBOLIZATION

This is about the creation of symbols to represent experience. These symbols are elements in the set we call knowledge. It must be emphasized that all representations truncate the experience. The map or the picture is not the same as that which it represents. Although the symbols may participate in that which they represent. Definitions, both direct and apophatic, are cross symbolizations.

Articulation verbalization, words, language

Images

Sounds, music

Models, mathematics

Rituals

RATNA SAMBHAVA THE ORGANIZATION OF EXPERIENCE

This is about ways or modes of knowing. All of the modes are interlaced in a complex manner. Knowledge is constructed in part by each of these modes. Decisions concerning what is relevant and what is valid are frequently made by *authority*, by the authority of tradition, which is the accumulated experience of a culture, or sometimes by the authority of political or ecclesiastical power.

Rational, what is relevant or irrelevant, SIGNIFICATION II Involves values

Critical, what is valid or invalid Involves tests

Logical, what is consistent or inconsistent Involves rules

Total, involves the entire organism, Music, dance,

AMITABA
VARIATIONS ON THE THEMES
Assimilation of experience

AMOGA SIDDHI
APPLICATIONS TESTING
of experience
phenotype

ORX

TELINT.WPD

February 9, 2006

TELESCOPES AND INTELLIGENCE SOME METAPHORS

TELESCOPES

Light gathering power:
photons/second
proportional to the lens or
mirror diameter squared

Magnification range:
Wide field to high detail
ratio, (measured by lens
focal length to eyepiece
focal length ratio)

Direction positioning:
Two coordinates,
declination and
right ascension

INTELLIGENCE

Data processing power:
bits/second
proportional to the number of
parameters in the database squared

Identification range:
Big picture to detail
discrimination ratio

Thought positioning:
Two coordinates,
concentration and
attention span

The overall power of a telescope is seen to depend on its size, focusing range, and steadiness in tracking objects. There is also the matter of selecting which objects to observe and knowing when best to observe them. In addition there are contextual parameters, such as atmospheric turbulence and sky darkness, that affect overall telescope power and usefulness.. Finally, the usefulness of a telescope depends on how the results of the observations are integrated with other observations and with the theories that attempt to synthesize all observation.

Overall intelligence depends on the amount of data one is able to process; on the flexibility in moving between details and big pictures; and on how big a big picture can be entertained and what detailed discriminations can be perceived. Intelligence requires criteria for establishing priorities and selecting which ideas, concepts, problems and issues to engage, and the timing. Effective application of intelligence requires insight into contextual parameters such as differences in cultural thinking and values and what is changing and the rates of change. Finally, intelligence is measured by the ability to see new patterns in the data with imagination and openness replacing ideologies and dogmas.

OPERAS: WYNN'S AND WAGNER'S

EPIDIOLOGY

EDWYNN.P51

DISK: ~~AGWSCRAPS~~

January 9, 1991

In the golden age of radio comedians, one season ~~Wd~~^E Wynn broadcast a series of parodies of program notes ~~of~~ famous operas. I recall the night he was presenting Wagner's opera, The Flying Dutchman:

"As the curtain rises a terrible storm is raging off the Cape of Good Hope at the southern tip of Africa. A lone ship shorn of its sails and masts is being mercilessly tossed by mountainous waves. But neither the storm nor the waves bother our hero---who at the time is shooting pool in a bar in Brooklyn."

The humor in this lies not only in its unexpected twist but in its reflection of the contrast between our personal activities and what the story is all about. I sometimes feel this way about our scientific activities. The great cosmos its contents and processes are like the ship off there in the storm and our research is like the billiard game, which very faintly--if at all--has anything to do with what is of ultimate consequence. The only aspect that is missing from the pool room metaphor is the illusion in our scientific thinking that the two are intimately connected. So for us, as for Wynn, the remainder of the opera focuses on the game in the bar.

But while the billiard game of Wynn's opera is mostly unrelated to the ship storm action in Wagner's opera, there are connections between the two. If metaphorically speaking, science is taken as the billiard game, what discipline do we have that gives us insight into possible meaningful connections between our games and cosmic events? Is it religion? philosophy? or some yet to be developed discipline? Perhaps there is or need be no connection, but if that be the case then the humor, the life, and the whole point of the of the Wynn opera disappears. But there is life and there is humor and there must be some role for our games in the cosmic order. While for the most part we must be content to play our games, yet from time to time we cannot help but wonder about their role in the bigger opera.

Some say there is no Wagner opera, it is just an artifact to launch our Brooklyn scenario. Others claim the two are one. While still others maintain the Wynn opera has displaced and replaced the original.

See Revision of This

94-#43

See also
OP PATTERN -92

EPI

IS GOD A MYSTERY?

A CONGERIES?

A FANTASY?

May 25, 1993

409

aristotle can
2 values
all or none

MYSTCONG.WPW
ORIGINAL May 23, 1993

DISK:EPIONTOLOGY

MYSTERIA

See Also

into the Unknown

ON MYSTERIES AND CONGERIES

esp. Sherlock Holmes style

A MYSTERY IS A SET OF POSSIBILITIES ONLY ONE OF WHICH IS TRUE.

A CONGERIES IS A SET OF FACETS ALL OF WHICH ARE TRUE.

Fermi-Dirac

A FANTASY IS A SET OF SPECULATIONS NONE OF WHICH ARE TRUE

Sets of possibilities may be classified in two categories:

1) The first category we shall call a *mystery*. It is a collection or set of events or configurations only one of which is real or true, the others possibly differing from the true by only minute amounts or details. The task is to decide which is the real or true member of the set.

EXAMPLE: The Great Pyramid of Gizeh. Its design fits many mathematical models. The builders probably employed a particular model in their design. Which one?

EXAMPLE; The curvature of space-time. Do we live in a universe whose curvature is > 0 , $= 0$, or < 0 ?

2) The second category we shall term a *congeries*. It is a collection or set of events or configurations all of which are real or true. Usually the members or facets of the set may not be seen simultaneously, in fact it may be possible to view but one at a time. The task is to construct the set as an entity from knowledge of the attributes of its various facets.

EXAMPLE: Quantum reality. The nature of fundamental particles seems to depend on how they are observed. Each mode of observation results in a different aspect or facet of the particles (e.g. wave and particle). All are true but what is the "defaceted" structure?

EXAMPLE: Altered states of consciousness. There appear to be several states of consciousness only one of which can be present at one time. Can we construct **Consciousness** from the attributes of the various states or facets?

The ur-problem often is to determine whether we are dealing with a mystery or a congeries.

EXAMPLE: Afterlife. Is there life after death, if so is it a mystery or a congeries? Is there one true situation or are there many depending on ...? Is it decided or constructed?

EXAMPLE: Theology. Is the subject matter of theology a mystery or a congeries?

example: Ontology

When we are dealing with a mystery there is decision, selection, and exploration. When we are dealing with a congeries there is construction, creation, and invention. Ultimately the quadric:

*(usually by Ren
Substitution)*

	Pre-existing (fixed)		
Mystery	- - - - - - - - - -		Congeries
1 true	Currently Created		many true
	(changing)		

CELEBRATION OF CYBERNETICS

We may take it as manifestation that our social order has truly been transformed if some day we shall see a monument erected to the memory of the collective thinkers who synthesized what is now known as "Cybernetics". A monument somewhat in the vein of the marines raising the flag on Iwo Jima, but celebrating a triumph of human collaboration in creativity rather a triumph of human collaboration in destruction.

Aside from the revolutionary epistemological value itself which is inherent in the concept of cybernetics, there are two other noteworthy features associated with its emergence. There is its creation through the operation of a "group mind" involving men and women from diverse specialties transcending their individual limitations and synthesizing a whole greater than the sum of the parts. And there is the fact that this is an American contribution to human knowledge and culture. By American is meant Pan-American, not United States. The work was done in the shadow of ancient Teotihuacan, Teotihuacan, and in some very real sense expresses at long last an epistemological statement about the world made by, as well as in, this hemisphere. Clearly in the concept of cybernetics is something that departs radically from the worldview of the Greeks and their European successors. Cybernetics opens the door on a new way to think about the world and its contents, not only a new way to think about classical questions, but to introduce and think about a new and different genre of question. *{[It is the grandfather of Recursion]}*

But in spite of this emergence of an American epistemology, as different from classical western ideas as is Chinese thought, Americans are indifferent and ignorant of it. Again it is the Europeans who have recognized the philosophical significance of cybernetics and co-opted into their thinking. But in any event we may say that there are now three great traditions of thought on our planet: The Far Eastern, The Near East-European, and now the American. It is our challenge, in the spirit of what has long dwelt in this continent, to develop this alternate way of seeing the world.

Am I a North American chauvinist?

Those at the Founding of Cybernetics

- Gregory Bateson*
- Margaret Meade*
- Warren McCulloch*
- Norbert Wiener*

⋮

Cybernetics also has broken the stranglehold linear thinking has had in the west, with a re-introduction of leap thinking. Leading to iteration, and recursion.

*feed back
non-linear*

CLIFF

DNT

The incident was closed but the experience was not. I settled my mind by deciding that my picking up the stone and the occurrence of the storm was purely a coincidence. The dialog with the "storm god" and the ensuing abatement of the storm was not magic, just more coincidence. But with coincidence and imagination put out of the way there was still something that bothered me. I, and not I alone, did see a face. But that too had a ready explanation in terms of shadow patterns. All of the separate pieces of the incident could be easily explained and dismissed, but the experience as a whole seemed to contain a message that should not be dismissed. To complete the gestalt one additional fact was needed. Would the face be there again on the next evening? It was.^P

What was ^{all of this} the storm god telling us? The message ^{had a strong resemblance to} seemed to be the same that ^{what} Plato had received some twenty five centuries before: ^{want some to} In reality ^{we} but an illusion, a pattern of shadows? For Plato on the wall of a cave, for us on the face of a cliff. (Human sensory experience has been compared to communication. First, there is the message source, next a communication channel, and third ^{seconds} a receiver. In the present case, the source is the set of actual rock indentations and protuberances on the face of the cliff, the channel is the sunlight reflected by the cliff, and the receivers are ^{we} the gawkers on the sand bar. The sunlight interacts with the rock shapes to create a pattern of reflected light and shadow which is perceived by the observers but made note of only in the event the pattern resonates with something ^{either} already familiar to them, such as ^{the or} a face. This means that in addition to the basic three communication components the receiver must also have a code book ^{shot in the car} to discriminate messages from non-messages. Only those patterns listed in the receiver's code book will be recognized as messages, and only by a receiver who is at the right place at the right time. It is these elements of place, time, and code book that ^{force} require us to re-examine our views of what we know and how we know it. ^{perhaps}

To begin with let us call

Reality Order I

The rock shapes on the cliff we shall call an "ontolog". These shapes have a different level or order of existence than do the patterns of light and shadow. Each configuration of intensity and direction of light ^{contributes to a pattern, a result of} corresponds to what we shall term an ^{interaction with sunlight creates} "epistem". Every epistem interacting with the ontolog creates a particular set of patterns we shall call a "world". The observer finds some of a world's patterns of interest and records them while ignoring others. But some forms, such as the face of the Chief cannot be ignored. So it is with our ontological interaction with the physical world. We select as our reality certain patterns, but at no time do we change the cliff. In addition to selecting patterns from a given world, we can choose to significate a different epistem and its resulting world and patterns. Some worlds are richer in correspondences with our code book than are others. The basic question in this metaphorical construct is, "what is the source and origin of the code book?"

There is allure in the case of mysteries. This arises from the challenge to establish which possibility is the correct one. An example of this is ^{data} the Great Pyramid at Gizeh. It is assumed that the builders had a particular design in mind, but there are so many mathematically consistent designs that fit or nearly fit the actual pyramid that we cannot decide which, if any, the builders had in mind. Uncertainty and unanswerability, therefore mystery, allure, and challenge.

Another example is the set of Friedman models of the universe. In these models the task is to decide whether the curvature of space-time is positive, negative, or zero. The actual universe appears to be very near zero, i.e. near a value such that it is very difficult to identify whether the actual curvature lies above, below, or at zero.

In both of these cases, it is assumed that only one of the possibilities is correct. The intriguing part is that there is so little difference between the "real" value and the values of the alternatives. It is this latter attribute, the difficulty of making the determination, that creates the mystery. Thus a mystery is a) many things and b) difficulty in deciding which one is correct.

Why do mysteries occur? Why do so many systems occur within a cluster of alternate possible values? There seems to be some propensity for a system to seek a region of high density in similarity space. Is this because there exist many viable alternatives near at hand and if one is blocked another is readily available. We might surmise a theorem: **The cutting edge of a viable system seeks a region rich in alternatives**, affording maximum choice, maximum option space. We could then say, for example, that the universe evolves so as to maximize its options, and the universe evolves so as to maximize its potential. A similar, and possibly related theorem, would state that action occurs at the interface between different regions, especially regions of different density (frequency). It seems that new systems emerge in the interstices. (where 7 beats)

But do we sometimes convert a congeries into a mystery by imposing the imperative of decidability, the monistic constraint that only one member of the set is "true". Humans feel uncomfortable with alternatives, ambiguities

not this, not this, ... NOT
→ BRAHMAN

MYSTERY AND ORTHODOXY ARE INCOMPATIBLE
IN CONGERIES THERE ARE NO HERESIES

The trade-off between Mystery and Orthodoxy
St. John St. Peter

Orthodoxy is closure

OAD
EP1

MYSTREV1.WP6

DISK:SYNTHESES

May 23, 1993

REVISED AUGUST 19, 1994

ON MYSTERIES AND MYSTERIA

- A MYSTERY IS A SET OF POSSIBILITIES ONLY ONE OF WHICH IS TRUE.
- A MYSTERIUM IS A SET OF FACETS ALL OF WHICH ARE TRUE.
- A FANTASY IS A SET OF SPECULATIONS NONE OF WHICH NEED BE TRUE.

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EXAMPLE; The curvature of space-time. Do we live in a universe whose curvature is > 0 , $= 0$, or < 0 ?

EXAMPLE: Any of the genre "who dunnit?" where there may be many suspects but only one culprit.

2) The second category we shall term a *mysterium*. It is a collection or set of events or configurations all of which are real or true. Usually the members or facets of the set may not be seen simultaneously, in fact it may be possible to view but one at a time. The task is to construct the set as an entity from knowledge of the attributes of its various facets. This is not the same as generalization.

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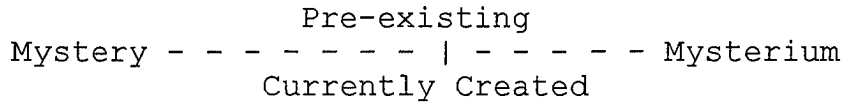
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When we are dealing with a mystery there is decision, selection, and exploration. When we are dealing with a mysterium there is construction, creation, and invention. Ultimately the quadric:



THE DYNAMIC OF MYSTERY

There is allure in the case of mysteries. This arises from the challenge to establish which possibility is the correct one. An example of this is again the Great Pyramid at Gizeh. It is assumed that the builders had a particular design in mind, but there are so many mathematically consistent designs that fit or nearly fit the actual pyramid that we cannot decide which, if any, the builders had in mind. Uncertainty and unanswerability, therefore mystery, allure, and challenge.

Another example is the set of Friedman models of the universe. In these models the task is to decide whether the curvature of space-time is positive, negative, or zero. The actual universe appears to be very near zero, i.e. near a value such that it is very difficult to identify whether the actual curvature lies above, below, or at zero.

In both of these cases, it is assumed that only one of the possibilities is correct. The intriguing part is that there is so little difference between the "real" value and the values of the alternatives. It is this latter attribute, the difficulty of making the determination, that creates the mystery. Thus a mystery is a) many things and b) difficulty in deciding which one is correct.

Why do mysteries occur? Why do so many systems occur within a cluster of alternate possible values? There seems to be some propensity for a system to seek a region of high density in similarity space. Is this because there exist many viable alternatives near at hand and if one is blocked another is readily available. We might surmise a theorem: **The cutting edge of a viable system seeks a region rich in alternatives**, affording maximum choice, maximum option space. We could then say, for example, that the universe evolves so as to maximize its options, and the universe evolves so as to maximize its

potential. A similar, and possibly related theorem, would state that action occurs at the interface between different regions, especially regions of different density (frequency). It seems that new systems emerge in the interstices. (Where there possibly exist beats)

But sometimes we convert a mysterium into a mystery by imposing the imperative of decidability, the monistic constraint that only one member of the set is "true", replacing the set of actual truths. We do this because we feel uncomfortable with alternatives, with ambiguity, with complexity.

We may assert apodictically that Creation is a Mysterium. And it must be emphasized that: **Mysteria and orthodoxy are incompatible. In mysteria there are no heresies.**

T HOU A H V

NUMBER [16]

SUBJECT [INFRASTRUCTURES]

TEXT [Infrastructures are frameworks used to organize experience, data, information. The table on which to place the dots.

A primary use is for retrieval. Thus a data base is an infrastructure.

Retrieval is a quest

Quests may be 1) for a class or set, 2) for a specific element

Search is to add new dots to the table, new cards to the data base

A category crisis is when there is no place for the new dots in the existing infrastructure.

]

INFRASTRUCTURES

DATA BASES [MODES OF RETRIEVAL] 11-12-10

AS INFRASTRUCTURES

LIBRARY CARDS [BOOKS]

TITLE WHAT
 AUTHOR WHO
 PUBLISHER HOW
 YEAR WHEN
 LOCATION WHERE
 SUBJECT WHICH

[WHY, WHENCE, WHITHER]

ACCESS

ASK SAM
 HYPERTEXT
 BOMPOCH
 SEMIOTICS
 EPISTEMOLOGY
 COGNITIVS

CHANGE

S

DATA
 INFORMATION
 KNOWLEDGE
 WISDOM

THE ELEMENTS

MATTER - ENERGY
 ELEMENTS
 AGGREGATES
 ORGANS
 ORGANISMS
 SOCIETIES

CAPABILITIES
 MOVEMENT
 STAPLE
 GROWTH
 EVOLUTION
 EMERGENCE
 TRANSCENDENCE

DOING BEING ACTIVE: WILL INTENT CREATE
 PASSIVE ACCESS DISCOVER

INFORMATION ACQUISITION
 KNOWLEDGE: ITS CREATION, ADVANCEMENT,
 ORGANIZATION, RETRIEVAL, AND SELECTION
 QUESTIONS, DIAOS - PARAMETERS, DIALECTICS
 ISSUE

MAJORITY
 MERISTICS
 AUTHORITY
 FORCE

JUXTAPOSE:

SEMANTICS - SENSES
 SYMBOLS EYE-EAR
 LANGUAGE EYE BODY
 IMAGE ABSTRACT
 NUMBER BODY
 RITUAL FAR BODY
 MUSIC

COG - EPISTEMS

JUXTAPOSE AUTHORITY - REVELATION TOP ↓
 DISCRIMINATE EMPIRICISM INDUCTION BOTTOM ↑
 PARAMETERIZE LOGIC DEDUCTION TOP ↓
 INTUITION SAME - DIFFERENT BOTTOM ↑
 RECOGNITION REDUCTIONISM
 SYNTHESIS RECOGNITION
 SAME - DIFFERENT CONSENSUS
 SYMMETRIES

REPRESENTATION
 COMMUNICATION
 VERTICAL
 HORIZONTAL

GST

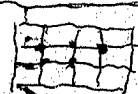
SEQUENCES
 NETS
 GRIDS

LEVELS
 MATROSHKAS

MORPHOLOGY [CARTESIAN DIAGRAMS]

REVEALS FILLED AND EMPTY

SPACES OR VERTICES



STRUCTURALISM

APPROACHES TO AN INFRASTRUCTURE AND CREATION OF RETRIEVAL SYSTEMS

ELEMENTS:

- SPACES
- WIDTHS
- DIMENSIONS
- UNITS
- LEVELS

- ## WAVES
- FREQUENCIES
 - AMPLITUDE
 - VELOCITY
 - PHASE

- AMTD
- FMTD
- CMTD
- TMTD

CONTENTS

- SUBJECTS
- TOPICS

- Alphabetical
- Category
- sub
- sub

ADDRESSES

- CLIPS
- NOTE BOOKS
- DRAWERS
- FILES
- BOXES
- DISKS

- FLi
- ZIPi
- FIRELITE
- C:
- CDs

REFERENCES

- BOOKS
- DOWNLOADS
- REPRINTS

Infrastructures built on Semiotics

- WORDS
- IMAGES
- FREQUENCIES
- FORMS Δ \square etc
- FORCES - BONDS
- NODES - EQUILIBRIA

of Microsoft Access DATABASE

- TABLES
- FIELDS
- RECORDS
- FORMS
- REPORTS

STRUCTURALISM

CDMA as INFRASTRUCTURE

BRAIN WIRING

of ATHROISMATS: PARTS and WHOLEs Element and set

THE SPECIES of INFRASTRUCTURES:

What is meant by order? disorder, entropy?

stability?
resistance to change?

directivity
multiplicity

complexity

ORDER w CHANGE

ORDER AS SIMPLICITY

ORDER w RETRIEVABILITY

ORDER and DATA-BASES

Retrievability - imposing addresses
on a structure
[a semiosis]

MAP STRUCTURE
ONTO A DATABASE

Order: A place for everything
and everything in its place

⇒ multiple infrastructure possible

but what about retrieval?

Is retrieval an additional
requirement?

An infrastructure is a special kind of set
beyond just belonging
e.g.

We can see order
but when does retrieval enter

e.g. properties, attributes, aspects

∃ parameters concerning {e's}

Retrievability
special case of order
Retrievable element
a special case of
an ordered structure

Retrievability is Cartesian
parameter and values

Fields - records

DATA BASES ARE CARTESIAN?

anyway, CARD INDEXES ARE CARTESIAN

Hierarchy is a structure - often an infrastructure

Hyperlinks transcend
the Cartesian
or increase the
dimensionality

A > B > C ...

A > B > C > ... Modular Hierarchy

SPACES

P-SPACE space of position and movement
change: motion, bound w/c

rules by Newton

H-SPACE space of forms, information
change: evolution, morphing bound $\approx c^5/g$
PROTEUS

rules aesthetics
tilings

Communication H-B

B-SPACE space of linkages, forces,
Contraction, stability, Expansion
change, scale size, growth bound c^4/g

rules survival

D-SPACE Direction, Selection
change: probability distributions
rule of values in direction
CHOICE, MENUS

rules axiological

Direction D-S

S-SPACE Semiotics
The space of representations
change
also a rule in direction, channeling the path
direction

rules grammar
mathematics

Just as energy has many forms
so does information

SPACES are a species of
sub-infrastructures for organizing
experience

Feeling = ?
information
energy
...
more

Change with respect to what?

TRUTH - where ?

INFRASTRUCTURES

FRAMEWORKS FOR ORGANIZING

PARADIGMS

"TABLES"

Party Line

Culture

BOX

Polysemous word: A word with many meanings

Redaction truncates

The ineffable thus protect itself

WIDTHS of

[about focus, resolving power, big picture]

NOW [all spaces]

HERE [ALL SPACES]

DIVERSITY H-SPACE

Projection of Bacon

CERTAINTY

COHERENCE

IDENTITY

- NOW: Synchronic, Diachronic

What, who controls the width of now?

Role of Jibites

personal width
community width
national width
cultural width

- HERE: Gus Stromberg's interferometer \rightarrow NON-LOCALITY, effect of phase
what, who is included, excluded

- DIVERSITY: Poetry, penumbra, alternatives, openness, divergence
specialization

- CERTAINTY: Must limit diversity, bounded
Logic, T/F, 4 valued, Probabilities

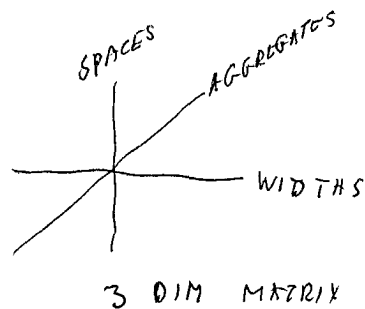
- COHERENCE: DOMAINS MARCHING TO ONE DRUMMER effects of frequency
= DOMAINS of EXPERIENCE?
= DOMAINS of REALITY CONSISTENCY?
= DOMAINS of CULTURE

- IDENTITY: MUTUAL CONTAINMENT $\supset \subset$

\exists both upper and lower bounds
to how, now, diversity, etc.

WIDTHS	NOW	HERE	DIVERSITY	CERTAINTY	COHERENCE
AGGREGATES					
PERSONAL					
COMMUNITY					
NATIONAL					
CULTURAL					
GLOBAL					

WHO, WHAT
CONTROLS
WIDTH



Frequency of repetition \Rightarrow what is in width of NOW

Extinctions... Jubilees \Rightarrow widths of NOW

WIDTH of NOW
 BREADTH of NOW
 impact
 HEIGHT of NOW
 Diachronic
 Synchronic
 DEPTH of NOW
 intensity
 e.g. battle, sex
 speed

3 dimensions
 WIDTH of HERE
 BREADTH of THERE
 HEIGHT of THERE beauty
 size
 isolation
 influence

Two dimensions applicable
 to other parameters?

e.g. Breadth of DIVERSITY vs Width of DIVERSITY

DIVERSITY

size of set
 Multiplicity could be
 breadth of diversity
 # of parameters involved

CERTAINTY

IDENTITY

COHERENCE

Adding Dimensionality
 to the "WIDTHS"

Multiplicity vs Diversity

Levels of Rules
 Playing Field
 Game
 Parmedeas
 Platonic
 Protagoras

LEVELS of COMPLEXITY

ELEMENTS

26
 H, He ... C, ... Fe
 Integers
 Alphabets 26 Semiotic
 Notes

At each level
 the arrangements become
 the next elements

ARRANGEMENTS

SETS, COMBINATIONS, PERMUTATIONS
 Molecules ^{real, rational, $\sqrt{\quad}$, i}
 Words
 Chords

2° ORDER ARRANGEMENTS

DNA Chromosomes 23M, 23F
 Functions
 Concepts
 Melodies

3° ORDER

Life Consciousness
 Poems Theorems
 Dramas
 Symphonies

Gandhi: "I am a Hindu, ... Muslim ..."
 The elements have become belief system

DYNAMICS

SEQUENCES
 SERIES

ARRAYS
 YANGHUIS
 CARTESIAN
 MATRICES

Semiotic Levels

	alphabet	Integers
	Words	Numbers
Gardens	Grammar	Sequences
Music	representations of representations	Functions
Rituals	representation of Nature, reality	rules axioms

Realities themselves
 are representations
 [e.g. Brahman?]

TIMES

• Motion time $\frac{\text{Separation}}{\text{velocity}} = \frac{R}{c} = t$

clock rate depends on velocity
 e.g. cf $t_a = \frac{t_0}{\sqrt{1 - \frac{v^2}{c^2}}}$

• Kepler time $\frac{1}{\sqrt{G\rho}} = \tau$ density time

The twin paradox OK for Mass, Length
 not for ageing
 rising ρ & t
 clock rate depends on local density

The cluster is still flying apart, but with slow clock - takes longer i. appears stable
 no need for dark matter

• Schwarzschild time $\frac{GM}{c^3} = T$ Mass time clock rate depends on mass

Redshift: $z = z(t, \tau, T)$
 shift
 Doppler \sim velocity
 Einstein \sim mass

solid rotation } Kepler } Race Track
 $v \propto R$ } $v \propto \sqrt{\frac{GM}{R}}$ } $v = \text{constant}$

$v = kR^1$ $v = kR^{-1/2}$ $v = kR^0$

do a velocity matrix

INFRASTRUCTURES

THE WIDTH OF HERE

CONTIGUITY and DISTINGUITY [DISCONTIGUOUS?]

Geographic ^{INCLUSION} ranges ^{EXCLUSION} e.g. Political Borders
Topographic
Water sheds

Crests - a species of border
Sensory - Visual boundaries
but also a spiritual border

a species of
Language
Religion
climb
Oceans, Rivers
GRANULATED
WORLD
DISCRETE

SHAPES, FORMS
H-SPACE

HERE - P-SPACE
PARTICLES
GRANULAR
DISCRETE
Parameter
Size
Mass
density

Invariants
G

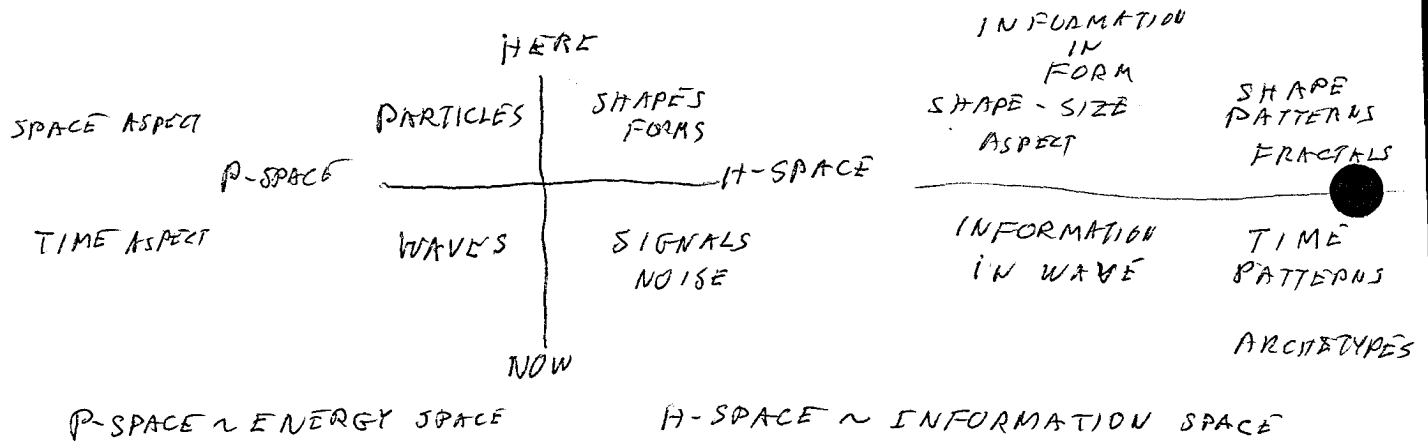
THE WIDTH OF NOW

CONTINUITY and DISTINGUITY [DISCONTINUOUS?]

Archetypal patterns in Time
H-SPACE

NOW - P-SPACE
WAVES
CONTINUOUS
Parameters:
frequency
Amplitude
phase

Invariants
C



WIDTHS ARE SUBJECTIVE, CHOICES, SELECTIONS
OF HERE, NOW

FRACTALS: REPETITION IN SCALE [OR #] SPATIAL PATTERN
ENERGY PATTERN

ARCHETYPES as REPETITION IN TEMPORAL PATTERN
IN CHARACTERS, PARTICIPANTS,
SLOW, FAST INFORMATION PATTERN

ATHROISMATICS - PART and WHOLES P-SPACE
f(width of here)

LAWS of CHANGE - Extractions, Jubilees, Archetypes
f(width of now)

07
08
21

INFORMATION

Definitions:

- * A measure of the delocalization of the state of the system in the space of all possible events. *whence?*
- Negentropy - Szilard
- Number of bits The unit of information is a single difference symbol 0,1
- Amount of surprise - Shannon
- Solid information - frozen in forms, organization
- Occurs at boundaries - Bateson
 [The boundary of the boundary is zero] — Wheeler
- Useful data are. Organized data, but data = perceived difference
- Length of description

Menu = { options } option = organized information

THE REPRESENTATIONS: [SYMBOLIZATIONS]

LANGUAGE	WORDS
MATH	EQUATIONS, models
IMAGES	[ARCHITECTURE], FACIAL
MUSIC	SOUNDS
RITUALS	BODY MOVEMENTS, DANCE
ICONS	[CLOTHES, CARS]

ELEMENTS	LINK RULES
WORDS	GRAMMAR
CONCEPTS & PROPOSITIONS	LOGIC

THE REPRESENTED

THINGS	SENSORY
IDEAS	THOUGHTS
FEELINGS	MOODS
ACTIONS	- MOVEMENT
GESTALT	

ORX

INFORMATION

06-02-21

- Address information
- Content information
- Direction information

Databases ~ an address structure
 Spaces ~ an address structure

Direction ~ a Content structure
 Hypertext ~ a content structure

- Organizing Frameworks Ground

Human Life [ed] values are
 parameter: dates, time

General AsL File } Ask files
 parameter 'N' with other
 parameters

multiplicity ~ duplicate
 diversity ~ back up

Efficiency
 Redundancy

A Book is linear linkages logic
 A parameter within sequence times data
 = 1 dimensional set size
 Multi dimensional sets
 Sources, initial condition
 paths
 destination
 hierarchy

Source Files both diverse, ~~used~~ multiple links
 {Initial Conditions} selection

{Paths - Parameters - One dimensional sets} → {Destinations}

Source Files designed, organized for Access } Links
 Retrieval

Evolution **LCH**

Cockroaches - adapted to
 {environments}

Evolving species
 bacteria
 an adaptation that changes
 rapidly

I Search for max adaptability
 w per diversity ↑
 Specialist dominance in
 One environment

II Search for Dominance
 ∴ Siva, Extinctions

, seek w Search ~ multiple
 dimensional set

Topic or
 Project selection
 path

COMPLEXITY

A measure of complexity:

The length of the shortest description of a given sequence of symbols.

Numbers ↑
Principle of Plethora
Diversity ↑
Complexity ↑

The random cannot generate complexity, it destroys it (cf. 2^o Law)
chance; natural selection cannot account for emergence

Stochastic Resonance and Dissonance

See article on complexity Sci Am. May 1993 p144

The economic advantages of scale are offset by the diseconomies of complexity p62 of what?

The increase in scale ~ increase in numbers, growth, mass production
scale balanced with complexity, again an interface
"On Being the right size for your complexity"

EVOLUTION: What is at root in the drive to morphogenesis to the diversity of forms

GROWTH: [The ^{principle} law of plethitude is at root in the drive to increase in numbers]
also → sameness?

The second law of thermodynamics → disorder → sameness?
operates with probability
[What principle → sameness, homogeneity, uniformity
The principle of plethitude?

EMERGENCE: What principle drives → increase in complexity?
This operates against probability

TRANSFORMATION:

	drive	side-effect
Level 1	numbers ↑ scale	→ sameness
Level 2	diversity ↑	→ ?
Level 3	complexity ↑	→ ?

Correction*
underlies both the 2^o Law and morphogenesis
* The realm of Ratna Sambhava
[2 responses to correction
1) to decay, extinction
2) to complexity

ZONES of EXPERIENCE

PARAMETERS [or dimensions]

I TIME

- MEMORY - RECORDS WIDTH OF ^{OBSERVER'S} NOW EXTENDING THE RECORD

HISTORY, WRITING, THE ROCKS, FOSSILS, GENES

INFERENCES: CARBON DATING, RADIOACTIVE DATING
REDSHIFT DATING
- REPETITIONS IN THE ZOEX

REGULAR OR STANDARDIZED REPETITIONS: THE DOMAIN OF SCIENCE

REPETITIVE PROCESS w
NON-REPETITIVE PROCESSES
- NON-REPETITIVE CHANGE

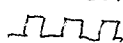
GROWTH, EVOLUTION

CONVERGENT CHANGE, DIVERGENT CHANGE

A THING HAS A SLOW RATE OF CHANGE
WITH RESPECT TO THE OBSERVER'S W O N O W

THINGS CAN BE CLASSIFIED BY THEIR
RATES OF CHANGE, LIFETIMES.

PROTONS, NEUTRONS, ... HUMANS ... MOUNTAINS
CLOUDS
- REPETITIVE PROCESSES

WAVES: SINE WAVES, PULSES  CONTINUITY
- NON-REPETITIVE

COMPLEX RANDOM
- MODULATION
- ~~AGGREGATION~~

~~REGRESSION~~

~~FRACTALS~~
- FREQUENCIES

PLANCK FREQUENCY 10^{43} hertz

LIFETIME OF BRAHMA

EQUINOXES 25,000 YEARS

BIG BANG 10^{-17} hertz

ZOEX 10^{-2} cm to 10^8 cm

II SCALE

MICRO PLANCK 10^{-33} cm, MEGA 10^{28} cm

AGGREGATES

FRACTALS, REGRESSION

ZOEX

ZONE OF EXPERIENCE

RECORDS

COLLECTIVE

W

ZOIS

ZONE OF EXISTENCE

MEMORY

INDIVIDUAL

IS ZOIS OF INDIVIDUAL > ZOEX OF INDIVIDUAL?
LIFETIME

⇒ INCAPACITATED OR BEYOND, NOT INDIVIDUAL GRAVE

OR

ZOEX OF INDIVIDUAL > ZOIS OF INDIVIDUAL?
LIFETIME

⇒ LIFE BEYOND GRAVE

AN INDIVIDUAL'S WIDTH OF NOW MEMORY TO PRESENT + VISIONS

MEMORY WION VISION

CULTURAL WION RECORDS ARE ~ THE MEMORY

RECORDS ARE DISTORTED FOR SYNCHRONIC AGENDAS

CHANGING THE PAST ALLOWS FOR A NEW RECURSION FORMULA
OR AT LEAST A NEW SEQUENCE

Math Metaphor

e.g. $A_{n+2} = 10A_{n+1} - A_n$

$$A_{n+2} = 10(A_{n+1} - A_n)$$

0, 1, 10, 99, 980, ...

0, 1, 10, 90, 800, ...

10, 1, 0, -1, -10, -99, ...

↓

1, 2, 19,

1, 11, 100, 890

Free Will

Change a value

but the Recursion Equation is Fixed, determined

The selection becomes the selection

Participation

The Process fixed

Reality is the sequence

I SEARCH POP PATTERNS

~~ORDINANS IN MODULARIZATION NOTE BOOK~~

• SET THEORY IN MATH 3 NOTE BOOK

II CREATION OF PATTERNS

MYSTERY

ORDINANS

ACCESS

I ORGANIZING EXPERIENCE
 SEARCH for what-pattern
 FILTER - COLLECT & SELECT
 RETRIEVE - ACCESS

How we see
Access the World

FILTER
 IN
 SELECT
 INTENT
 FILTER
 IMPROVED
 LIMIT

II CREATION of ORDER
 Putting in

Tools
 Set Theory Linear Sets Spectra 1 parameter

ORDER ENTROPY INFORMATION

THE SEARCH IS TO FIND NEW DOTS
QUESTS ARE TO RETRIEVE _v DOTS OR PATTERNS
Known

ORDINANS

03-03-08

WAYS OF ORGANIZING

PROCESSES OF ORGANIZING

SELF-ORGANIZATION

PRINCIPLES OF ORGANIZING

COMPLEXITY DIVERSITY

SOURCE OF COMPLEXITY, EMERGENCE

INFRASTRUCTURES

MATRICES

Paradigms

Patterns

Matrices

Data bases

Hierarchies

Trees

Parameterization ≥ 2 values

parameters are links

time is a link also a ground or infrastructure

Rules are patterns

Grounds / Figures

A ground is a multiparameter
or multi dimensional link

Purpose

Retrieval

Control

ORDINANS

BASIC PRINCIPLES

- 1) The Second Law of Thermodynamics $O \cdot T = k_2$ Trade offs
- 2) Heisenberg's Uncertainty Principle $E \cdot T \geq \hbar$
- 3) Focus principle $A \cdot \Omega = k$, $M \propto T$ ["Danie's Law"]
 $E \cdot M = R$

mortality
extinction
e.g. asteroids

3) x 1) $E \cdot M \cdot O \cdot T = k k_2 \geq \hbar O M \quad \therefore O M \leq \frac{k k_2}{\hbar}$

O represents the information stored in matter : determinism, ^{locked} closed
M represent "free information", menu : choice, selection, open

O · M is bounded $\approx \hbar$
ie. if O ↑, M ↓

As order ↑, complexity ↑, choice, freedom, openness ↓
The second law says O ↓ \therefore openness is maintained

3) says actualization diminishes Ω or M or choice
 \Rightarrow order ↑, options ↓ \rightarrow freezing

We thus have a contest between complexity and diversity
Complexity ↑, diversity ↓

\Rightarrow Complexity homogenizes reduces options

- 5) Power requires homogenization
goes with \therefore with complexity trade off
power · survival = constant
- 6) Survival goes with diversity

E = energy

T = time

O = order } contain
M = menu } information

A = activity of E actualization, realization = expenditure of energy

Ω = spectrum of alternative, $M \propto \Omega$

If Brahma wants maximum variety alternatives then he wants M large
or O ↓ \therefore He instituted the 2^o Law of thermodynamics supplemented by the Shiva Principle

What principles are primary?

The Shiva Principle:
From time to time O that is frozen and immune to the 2^o Law must be destroyed

RE INFORMATION [In Organization]

The extent of variety is a measure of the information
a difference is a moment of information

Solid information vs fluid information
frozen

information is absorbed
into organization or other
reducing free information
or openness = $f(\text{variety})$
options

PARADOX

That which opposes the increase in variety offends Brahma

But the 2^o Law decreases variety, it homogenizes

To organize is to reduce options
and free information (= variety)

The reduction of variety
reduce possibility
potentiality

Are complexity and potentiality
adversarial?

What is the source of menu
potentiality

Information is at a boundary
- Gregory Bateson

i.e. a difference creates information
lumping, packaging destroys it

complexity reduces or
enhances potentiality?

It appears that life in its capacity to contravene the 2^o Law, evolves → order
and complexity, reducing options, alternative
gradually, cancer like, turning men into its own kind

Shiva must act to preserve openness

Life has evolved → control
rather than → belong

ORX MTH

SEQUENCES

Elements Dimensions rules	Terms Set by initial conditions Recursive or explicit	Cf?	Databases? Optics?
---------------------------------	--	-----	-----------------------

Recursive

Are themselves ~ tiles ← ~~ORX~~ LCA ORY BRM
Can be linked in many ways

These "codes" (or topic) are elements
Juxtapose them

No intersects
If ???? then ∃ union
= essay? = picture?
INTERSECTS Union ~ a ????,
Intersect ~ a definition?
What ~ a dimension
A parameter?
The intersect ~

a parameter?
Dimension?
Elements) 0
Dimension 1 linear
Topic 2
Picture 3
2 Pictures 4

THE PENETRATING
POWER OF MORE
THAN ONE
APPROACH
ANALOGOUS
ALTERNATIVES!

LCA

The importance of fragmentation

{photons} ~ force, link connection ⇒ forces ~ 1 dim link

{bits} ~ links

Higher order links theories, problem

Worldvier 4

Godel order 3's cannot be consistently fit together

.. ∃ even one order 4

LCH and **ORX** **BRM**

Brahma may have designed the world
 So that many pieces could fit together
 In different ways [cf tiles and tessellations]
 And some in but one way [cf gig-saw puzzle]

multiplicity
 diversity

We must discourse which pieces fit in only one way,
 Which can fit in several, alternative ways.

E.g. The above fits at least 3 topics

Is a topic a picture?

Or is a picture = a {topics}?

Or a topic ~ a dimension – a parameter in a data base

No, a topic is the intersect of several parameter

A picture is the union

Organization Devices All metaphors	SPACES ≈ DATABASES ≈ TESSALLATIONS ≈ Language			
	Dimensions	parameters	Tiles [sharpest colors] <i>Shapes</i>	propositions
Elements	x,y,z... values x̄, ȳ, z̄ Values x̄, etc.	e.g. date time	e.g. square ?? hexagons	words
Rules	Algebra etc.	VENN Logic	Aesthetics Ethics Morality	Grammar

OPTICS ~ COMPUTERS

Photons bits

Elements
Elements

ORX

Organizing Experience
Myth, Gods, Religions, Government

Grounds - *Parameo*
Spaces - The Table
Matrices
Spaces and Databases Optics Metaphors

The two traditions

- 1) The Answer - Certainty Finalism Islam
Religion, cults, fundamentals
Law thinks, ~~S~~ kind on new world
- 2) ~~S~~ successive Approximations
Taosim, Buddhism, Talmud, Science
Lamp
Jefferson in direction

Parmenides
Parameters

~~Heraclides~~ *Heraclides*

The Loss of Uncertainty
Beyond skepticism

Real openness

Looking at the Mystery itself.

??? Instead of evaluating the previous
Or current answer

There are two kinds of successive approximations

Pixel density ↑	1 those that decrease the penumbra	More definitive ⇒ Accuracy
Pixel domain area ↑	2 Those that expand the penumbra	More inclusive ⇒ Big Picture

Increasing what we know
Increasing our realization of what we do not know
The two walls of Mystery

ORX

SPACES

Devices for organizing elements
 Our common sense space is a framework for organizing things
 and when we throw in time
 for organizing events
 i.e. space is a container
 and context
 a container of things, events, experience.

Mathematicians have invented or studied the properties of
 Many kinds of space [from Euclid, Hilbert, and Banach]
 Riemann, Lobachevsky, Poincaré, Banach
 Slopes, curvature, parallels

SPACES w DATABASES w Tessellations

Other spaces: (beside mathematics)	
Astronauts	P
Architects	H
Feng Sui	B
Landscape	

Space Moods ↔ The Forces The rates The elements The infinitesimals	Two most fundamental devices Spaces, Databases
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SPACE a Metaphor