

EPIONTOLOGY

FOUR CATEGORIES OF EPISTEMOLOGY

In a metamorphical sense, an epistemology is a set of rules for playing a game, where the name of the game is "find a reality". Changing the rules, changes the game and results in a different reality or ontology. And it is not surprising that different players prefer different rules, different games, and end up with different notions of reality. Just as the color of things depends on the tint of the glasses we wear, the facet of the world we accept as reality depends on the epistemology we adopt to know [explore/create] the world. And since there are many epistemologies and many different facets there will be many realities.

Each reality or facet of the world has its own mode of existence. The meaning of existence in one reality is not the same as the meaning of existence in another reality. [Unfortunately we do not have different words for different modes of existence. We are stuck with the Aristotlian 'exists or doesn't exist']. So called "proofs" or tests of existence also vary with the epistemology employed. For example, "Seeing is believing" is a test for existence in the reality derived from a sensory based epistemology. But since mathematics cannot be seen, mathematics does not exist in the sensory reality. Where then does mathematics exist? And what epistemology leads to the facet or reality in which mathematics does exist? And while we are at it, we might also ask where does Love exist? where does Beauty exist? Is the flower beautiful if there is no one to see it, smell it, touch it? These are all classical epistemological-ontological questions, and the fact that there are several answers supports the view that humans are capable of experiencing more than one reality. In fact we have the capacity to experience at least four distinct realities accessible through four different epistemologies. We can thus perceive at least four facets of the "Whole".

However, there is a caveat: Each epistemology leads to a different ontology or reality. Reciprocally, however, an ontology limits the epistemologies it can admit. Without initially remaining open to multiple epistemologies, the epistemological-ontological interplay results in an ever narrowing set of acceptable epistemologies and accordingly fewer ontologies, continuing until a single facet of the Whole is

isolated and substituted for the Whole. This built in inaccessibility of the Whole cannot be circumvented. It can, however, be mitigated by employing as many epistemologies as possible and accepting the fact that the results may defy our customary intellectual constraint of consistency.

Granting our inability to know the Whole, we ask can the Whole know itself. A traditional monotheistic, "God is omniscient", view of the Cosmos would answer yes, but it may well be that the domain of "knowing" remains always a subset of the domain of "being" and consequently no entity, including God or the Cosmos itself, can ever fully know itself.

What then is the deeper meaning of 'to know'? If there is no knowing is there no being? In order to exist a thing must be known? Is knowing complementary to existence or being, as in wave/particle complementarity? Does the proportion,

knowing:information::being:energy

apply? Are knowing/being and epistemology/ontology possibly dialectic pairs? Or must we conclude that we are trapped in a semantic cul-de-sac, lacking the terms to describe an essential ingredient felt to be present but so far ineffable.

Four basic categories of epistemology have been recognized:

1) The Serpent: The Epistemologies of Sensory Inputs.

These are the epistemologies processed by our senses and our intellects. Properly termed, epistemologies of the head. These lead to our usual philosophical constructs, our metaphysical models. Rooted in both experience and speculation (imagination), they provide ontologies that are a mix of discovery and creativity. For this reason such ontologies are neither fully true nor fully false.

2) The Turtle: The Epistemologies of Number

These are the mathematical imperatives rooted in the nature of number. Their expressions provide an isomorphic map of the structure of the physical portion of the world. The limitations of a mathematical epistemology lie both in its symbolisms and in our ability to interpret them.

3) The Pine or Oak: The Epistemologies of Silence

These are the epistemologies of the "heart", the epistemologies of contemplation, meditation, and emptiness. These epistemologies involve a dedication to openness. Their ontologies transcend the grasp of language, the limitations of logic, and the restrictions imposed by intellect. The world they reveal is not of a physical nature, but has an ineffable

relation to the world of matter.

4) The Egret: The Epistemologies of Recognition

These are epistemologies, not designed by us, but given to us. Recognition (not empiricism) is the way of knowing what is Beauty, what is Love, what is Good, what is True. Through them we know without believing, we understand without articulating, we participate harmoniously without direction. This because when we achieve union, one identity, then identity disappears; for ONE has no-existence.

draft PREFACE TO SCRAPS

Most scraps are unfinished, but this collection is not an unfinished symphony. While the scraps do not come together to create a picture some may be joined to form intriguing patterns. But most patterns are not pictures; pictures are those patterns that are familiar.

If something is repeated often enough it becomes familiar, so our familiar world is the part of the cosmos that repeats itself [and at frequencies compatible with our short lifetimes]

We associate ^{reman} understanding with the familiar [not that we understand the familiar]
 And an explanation is a logical connection to what is understood. So ultimately understanding a phenomenon is making it familiar. If an event or phenomenon is unlinkable to the continent of the familiar, it is ignored.

That which is rare or improbable is unfamiliar and therefore cannot be understood and is excluded from knowledge.

Until we derive additional alternative critical linkages, besides the one we now have—consistency, we will continue to exclude the bulk of the world.

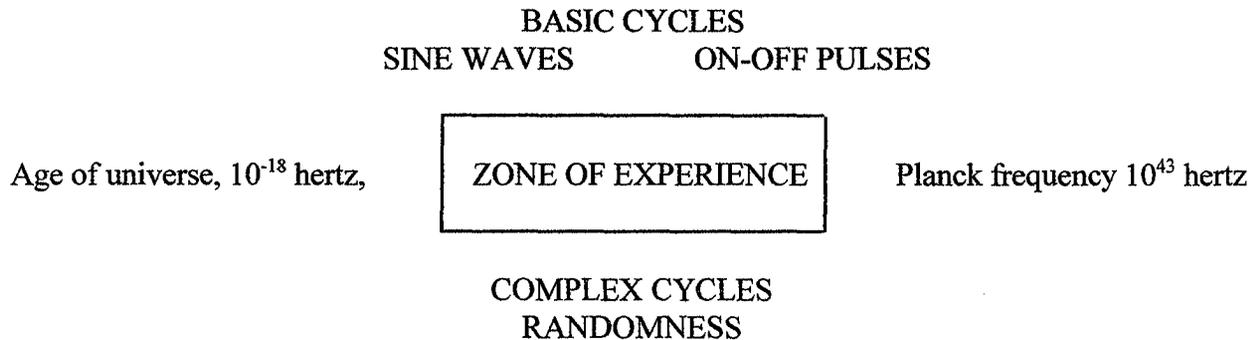
We seem to be able to experience beyond the domain of consistency with the familiar, but choose to ignore its challenge of developing a critical mode of linking.

This copy has been revised

THE ZONE OF EXPERIENCE

The portion of the electromagnetic spectrum to which humans have direct sensory access is limited to a frequency interval of approximately x to y, commonly called red to violet. There is also access to an audible frequency interval, varying largely with individuals, of from about X hertz to Y hertz. In general, human sensory experience is confined to restricted regions of the various spectra of the cycles and oscillations that are the basic ingredients of a vibrating universe. However, over centuries we have been able to push back the boundaries of this direct sensory access zone using various physical instruments and the inferences of mathematical calculations. But our concept of reality still rests on our experience of a very limited "vibration zone".

This zone is defined not only by the ranges of accessible frequencies, but also by their complexity. The interactions of the frequencies—modulations, resonances, reinforcements, cancellations—all effect a complexity that we sweep under the rug, random. A simplified diagram of the zone of experience would look like Figure 1.



Horizontally, the figure extends from the lowest frequencies, the reciprocal of the time since the Big Bang, some 13 billion years ago, to the highest, the planck frequency = $\sqrt{(c^5/G\hbar)}$. Vertically, the figure starts at the simplest wave or cycle forms and goes downward to increasingly complex forms associated with various probability distributions and on to randomness. Knowledge of the extent of the figure derives largely from mathematical extrapolations from measurements made within the Zone of Experience.

Science is based on the repetitive and reproducible; and classical science on the repetitions that occur within the traditional zone of experience. The new challenges to science that arose in the 20th century are how to incorporate the high frequency phenomena of the micro or quantum world and the low frequency phenomena of the mega world into the laws we have found that operate in our meso zone. Are the laws that obtain outside the zone consistent with those we have found within the zone? But more, There is the challenge of the nature of randomness, and the completion of the laws of thermodynamics. What is the source of diversity, and what laws governing change remain to be discovered?

Our Epistemologies

We discover what is real:

We discover who we are:

When we

Contemplate the majesty of mountains or
the protean forms of clouds

When we

Ski down a steep slope or
soar up into the sky

When we

Watch children explore the newness of their world or
Newborn lambs nuzzling their ewe

When we

Hear the fugal power of a great organ or
the timeless call of ancient pipes

When we

Measure the forces within an atom or
analyze the light from a star

When we

Interpret the meanings of a mathematical formula or
view anomalies of an artist's creations

When we

Meditate in the stillness of a garden or
return to the time of an ancient ruin

When we

Gaze into the sleeping face of a loved one or
weep with friends at a passing

These are *Our Epistemologies*,

Our ways of knowing the world and ourselves.

Each reveals to us a facet of reality

Each reveals to us a facet of ourselves

And each gives us a glimpse into those realities

and selves that lie beyond.

AN EPISTEMOLOGY BALLOT

To design (or select) your epistemology, check which of the following you wish to include:

Allowed input channels.

- Sensory data (Positivism)
- Intuitive perceptions (Recognition)
- Mathematical concepts and constructs
- Revelation (Vision)

Preferred probability distribution

- Gaussian (Science)
- Minimum sigma
- Bi-modal
- Disregard probabilities

Priority probability range

- The entire range
- Highest probability portion (repetitive phenomena range)
- A low probability portion
- A Dirac function (probability is either 1 or 0)

Validation method

- Reproducibility
- Logical analysis (consistency)
- Consensus (or majority)
- Authority

Preferred dialectical process

- Question/answer (Socrates)
- Hypothesis formulation/testing (Science)
- Thesis/antithesis → synthesis (Hegel) [Reduce to a dyad and debate]
- Suppress alternatives

Your desired product

- Knowledge
- An ontology (a reality)
- Truth (a belief system)
- Power (dogma)

It must be noted that whatever your selection, it will perpetuate itself. The selection always becomes the selector, and will seek to reaffirm itself by focusing on what it has previously rendered ordinary and familiar,

EBALLOT.WPD

05-05-15

IMPROVING OUR WORLD VIEW

We view the world through the filters of our scientific theories, our religious dogmas, and our cultural worldviews, and superimposed on these are the filters of our personal prejudices. We ask, is there some way to obtain an unfiltered view of the world, seeing it in its full richness free of the astigmatism of our conceptual constructs? For a totally concept-free view, the answer is no, since percepts and concepts are intimately interdependent and there can be no percepts without concepts. But there are some things we can do:

For one, we may select alternative filters and by comparing the results arrive at a somewhat less astigmatic view. On the subjective side, this approach requires a strong measure of skepticism in the accuracy of every filter and a strong measure of belief in the value of all filters. It also requires the maturity to live with the realization that all views are imperfect and the "true view" is a will-o-the-wisp. On the objective side, this approach requires the availability of alternative filters. These are usually in short supply because one of our cultural dogmas is that alternatives are disquieting and should therefore be suppressed. Hence back to the attic to dust off epicycles, phlogiston, caloric, ether, Bohr atoms, cosmological constants, tired photons, and steady state universes. Back to the photo album to look at Gnostics, Monophysites, Arians, Manicheans, Pelagians, and Cathars.

A second endeavor is to try to locate the hidden postulates and assumptions. After an assumption has been made for many years it becomes invisible and is accepted as belonging to the world itself. For example, Hubble took the doppler interpretation of red shifts as an assumption. Today it is dogma.

A third device is to go from linear causal patterns to multi-dimensional patterns. Whereas a missing link may derail a linear argument and block proof, even though pieces may be missing in a multi-dimensional pattern (as in a jig-saw puzzle) the picture may be discernable.

Fourth, look for broad patterns. Widen the field of view even if the resolving power must be reduced. Exceptions should serve to refine a generalization, not to preclude making it.

Fifth, employ the scan, select, zoom techniques of exploration. Technique 1) Select a field, scan it, select a portion of the field, zoom in, iterate. This is known as the reductionist technique. Technique 2) Select a field, scan it, select two (or more) portions, compare their zooms. This is known as the juxtaposition technique. Technique 3) Select a

This is all there is

phenomenon
The technique of patterns in the first data
washed out as data increases

e.g. largest galaxies in clusters

diversification of EO's \Rightarrow \exists a max size

This means \exists a correlation between a parameter in the data
and a parameter in the original selection process.

e.g. the easiest to photograph

5/ Selection ~~and~~ Signification
Interesting ~~to~~ Important

6/ Explore first without a map

All maps may be in error

Do not rush to the library

First, give the item your own
uninfluenced assessment,

then check with what others have done.

Can't find this one

2) The whole contains every part and every part contains the whole. This ancient truth has been discovered in the West by technology through the invention of the hologram. The entire universe exists within each of us as well as each of us existing within the universe. As five hundred years ago it was difficult for people in the Spanish Court to understand that the East could be reached by sailing west, it is difficult for people today to understand that the infinite may be reached through the infinitesimal, by going within, by centering down into the immediate local and present.

FROM S/VRAM01.WPG

02/17/93 # 13

EPISTEM A, WPW

13.

Quantum
Mechanics
affected
the observer
- His world view

On Epistemology

See EP1001, WPW #50-93

An epistemology is a strategy for encountering an unknown (or partially unknown) world. In general its goals are to

represent experience

- Make a map or model or theory that represents that world
- Discover the bounds or limits of the world
- Enumerate the variety of phenomena (species) encountered together with their frequency of occurrence. and relationships

Ratna Sambhara

Amitaba

An epistemological strategy is a dialectical process. That is, it is a process that oscillates between two phases. The typical epistemological dialectic consists of 1) constructing a framework (model, theory, map) to contain all of the data (experience, phenomena, terrain) encountered. And 2) placing the data in the framework. Whenever there is no place for the data in the framework, return to phase 1 and reconstruct the framework. This process is like going forward by walking, moving the left foot then the right foot. Sometimes the frame foot is not moved forward, the data that does not fit is instead ignored or discarded. This limits further movement of the data foot. Sometimes a frame will handle only part of the data, while another frame will take care of other parts. Sometimes several frames are needed, some perhaps overlapping, but no one of which is capable of containing all of the data. There seems to be an **epistemological imperative** that requires reduction of all frames to a single frame.

It must not be assumed that the unknown world is immune from the acts of the explorer or from the consequences of being explored. In the case of the astronomical universe, we assume that our observations of it have no affect on its structure or behavior. However, there are other domains in which our observations and exploration alter their nature. Examples include the anthropological study of native tribes, and the micro quantum world. Hence it is wrong to think of an epistemology as purely a strategy of exploration. Encountering or engaging the unknown world may involve creation, as well as exploration, invention as well as discovery, and teaching as well as learning. The explorer may alter the world he explores. His map may describe himself as well as of the unknown world. The world of mathematics is an example of one in which the boundary between discovery and invention is uncertain. Thus unknown worlds lie in a spectrum that extends from frozen in concrete to be encountered purely by exploration, to amorphous and pliable to be encountered purely through creativity.

or that the explorer is not modified

and alteration

It follows that a more general epistemological strategy must allow for both discovery and invention, for both exploration and creation, for both science and art. How then are the above three goals of an exploration epistemology to be generalized for an exploration-creation epistemology? What are the criteria for discrimination between frozen and pliable domains, between domains for discovery and domains for invention.

The serenity prayer

The story of the stranger who comes to town: "What kind of people does one find around here?" "What kind where you come from?" "That the kind you will find here."

An amplification of the two epistemological levels: *Phases Sw 13-93 EPISTEMA, N, PW*

- The basic problem of scientific explanation is to find the best model that fits the observations.
- The basic problem of ~~applied~~^{basic} mathematics is to provide a smorgasbord of models from which the scientist may select the most suitable.
- The basic problem of philosophy is to supply one or more meta-models which can contain all extant ^{from disk} models.

There seem to be several species of existence: material existence, informational existence, numerical existence, spiritual existence, theo existence (the non-existent existence of God), ... We cannot assert whether these different species of existence are independent or exclusive or affirm in what ways they are interdependent. For example, we have no instances or experience of pure information, information totally detached from matter. Materialists maintain that information is an attribute of matter, others hold that matter is "frozen" information. A proper meta-model allows not only for the possible varieties of existence and also for the conceivable ways in which the varieties may be related or unrelated.

Returning to mathematics, in saying that the basic task of mathematical physics (or biology, ...) is to provide a smorgasbord of models from which the scientist may select the most suitable, mathematics is not "queen of the sciences", but is a chef to the sciences. But mathematics is more than a servant to the sciences. It is itself an independent and alternate approach to understanding. Theories are generally tied to observations at several points, but mathematics may sustain an existence independent of observations, data, and sensory experience. The Pythagorean view is that math does not derive from the sensory, but that it derives from number and that number has a different sort of existence than ^{do} material objects.

also leans views

EPI

ABOUT REVERSE EPISTEMOLOGY

I have in front of me a pile of paper consisting of clippings, notes, essays, cartoons, and scraps on which sketches of ideas have been scribbled. I spread them out on the bed and see if I can come up with some way to organize them so that at least some degree of retrievability can be effected. How nice it would be to have a ready made filing system so refined that a glance at the scrap would immediately inform me into which slot it goes. But these scraps defy filing! No system exists that can order them. They survive in a one category file labeled **miscellaneous**, whose present retrievability value is next to nil.

This is not an unusual problem. We seem to have to live with outgrown filing systems whose miscellaneous category continually expands. We can of course throw out items that don't fit in the file in order to keep the miscellaneous folder thin. In fact we have three choices: 1) Throw away what doesn't fit and thus have a perfect but incomplete file, 2) Keep everything and when an item doesn't fit stuff it in the miscellaneous file and thus have a complete but imperfect file, or 3) Create a filing system that will be both perfect and complete. The last option would be an ongoing and will-o-the-wisp task. It should be noted here that the Austrian mathematician Kurt Gödel proved that a file could never be both complete and perfect*. So the best we can hope for is continual updating, iterating our latest file.

Updating is one task, but starting from scratch with a totally unstructured pile is another task. This is where reverse epistemology comes in. Ordinarily an epistemology contains two aspects or layers. First, an epistemology has an organizing schema, a sort of matrix into which various experiences or items can be placed. Second, an epistemology has a process which identifies where in the matrix each experience or item is to be placed. If we have a set of experiences or items, but no organizing schema, then we must employ 'reverse epistemology'-- create the schema and the process concurrently.

* Actually this is not what Gödel proved. He showed that in any postulatory system (at least as complex as arithmetic) that there exist true theorems that cannot be derived from the postulates. The application of this result to filing systems is valid because the file must include not only the analog of the derivable and non-derivable items but items coming from other completely different postulatory systems. If the Gödel case forbids both simultaneous perfection and completeness, then certainly the case of files does. *case example*

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FIGURE AND GROUND

Figure/Ground constitutes an important sub-class of dyads and four subclasses of figure/ground are identifiable:

- 1) Figure and Ground are dual Fig <---> Grd
- 2) Ground supports Figure Fig <---- Grd
- 3) Figure supports Ground \Rightarrow Fig ----> Grd
- 4) Figure and Ground are independent Fig || Grd

The following are cited as examples:

CLASS	FIGURE	GROUND
1	MATTER/ENERGY	SPACE-TIME
2	BALLS:STATISTICAL MECHANICS	BOXES:STATISTICAL MECHANICS
2	MOTION TIME	DENSITY TIME
2	MEASUREMENT	UNIT
2	AGE	DATE
2	TALL	HIGH
2	SENSATION	STIMULUS
2	SIZE	SCALE
1	PARTICLE	WAVE
2	SIGNAL or FORM	NOISE
1	LIFE	CONSCIOUSNESS
3	MANKIND	GOD
3	EXPERIENCE	EPISTEMOLOGICAL SCHEMA
1	EPISTEMOLOGY	ONTOLOGY
2	L, M, T	h, G, c
?	h, G, c	α, μ, S
2	FAST SYSTEM	SLOW SYSTEM
4	POINTS	LINES, AREAS, OR VOLUMES
2	PERCEPTION	EXISTENCE
3	ENERGY-MATTER	INFORMATION
3	NUCLEI	CELLS

QUESTIONS AND COMMENTS:

- 1] In each case there is always the question, which is the figure, which the ground?
- 2] And to which of the above four sub-classes does a pair belong?
- 3] A figure without the organization and information supplied by the ground is but noise.
- 4] SAT is the ultimate ground, supporting all figures yet having an independent existence. Only that which exists for others without the need of others is SAT.
- 5] SAT is involved in subclasses 2 and 4.
- 6] The sunyata is SAT.
- 7] Only SAT does not require repetition to continue to exist. All non-SAT figures must be continually 'refreshed'.
- 8] The premise adopted here is that not only perception but existence itself hinges on there being two levels, the level of figure and the level of ground. Pythagoras claimed that one (of anything) cannot exist. Eddington held that uniform sameness is the equivalent of non-existence, that is, a uniform or blank ground in the absence of an accompanying figure is neither perceptible nor existent. SAT is the exception to this two level law of existence.
- 9] Measurement is connecting a figure with a ground.
- 10] An example of energy-matter vs information is the Moon Illusion.
- 11] The existence of eigenvalues (or discreteness) in the figure infers finiteness or boundedness of the ground.
- 12] What is the horizontal connectivity of Figure and of Ground? Are figures and grounds continuous or granular? Two granularity constants may be required: Planck's h and superstring theory's α' or $(\alpha')^2$.
- 13] All may be granular. Granularity becomes continuity as scale decreases and becomes repetition as scale increases. It is a matter of resolving power.
- 14] Two Laws of Perception:
 - 1) The Weber-Fechner Law (or some related power law)
 - 2) We perceive only in the Eddington-Whitehead Zone, i.e all phenomena lie in the E-W Zone, all else is noumenal.
- 15] The figure/ground concept is also of use in fractal dimension and in the chain-letter of Amway situation.
- 16] Fractal dimension is a mediator of figure and ground (cf measurement and measure)
- 17] Are other uses of log scales also mediators? Richter, pH, decibels, Weber-Fechner,...
- 18] The Great Dialectic or Antiphon is an example of sub-class one.

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. Urground 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 Urground or SAT.

*THE UNIVERSE CONSISTS OF TWO LEVELS,
A FIGURE AND A GROUND.*

• The Ground is a vast vibratory system, like a complex drum, capable of vibrating in many modes. The spacings of its nodes are determined by the three dimensionless numbers: α , μ , and S where
 α is the fine structure constant = 0.007297353
 μ is the mass ratio proton to electron = 1816.152701
 S is the ratio of the coulomb to the gravitational force,
 = 2.269239×10^{39}

• The Figure is the material universe whose basic modules are action packets [dimensionally = ML^2/T] defined by the fundamental constants: h , c , and G where

h is Planck's constant [ML^2/T] = 1.054573×10^{-27} cgs

c is the velocity of light [L/T] = 2.997925×10^{10} cgs

G is Newton's constant [L^3/MT^2] = 6.672599×10^{-8} cgs

The action packet, sometimes called the Planck particle, has the values:

$m_p = 2.176710 \times 10^{-5}$ grams

$l_p = 1.616050 \times 10^{-33}$ centimeters

$t_p = 5.390560 \times 10^{-44}$ seconds

The interaction of these two levels creates a universe. Many figures are possible with the same Ground. However, what actually occurs depends on the values of the constants h , c , and G . The vibratory system which supports various dynamics may also be alterable, but whatever its structure, it provides the "theme" within whose template all "variations on the theme" take place.

Since material existence occurs at the nodes, the organization of the action modules and their transforms is governed by the locations of the nodes. The largest net of nodes is set by S or \sqrt{S} , giving a "fractal" structure to the universe. Small scale nets are determined by α and μ in various combinations. These several nets of nodes provide many templates by means of which all possible material entities are formed.

The two levels involved are those of the templates and those of the packets. These levels constitute a basic dualism underlying the universe. What can occur is defined by the Ground, what does occur is open but infected with what has already occurred. But beyond the necessity of this dualism lies the question of its sufficiency. Is a third element required to make it happen?

SOME SUPPLEMENTARY INPUTS:

- ▶ A dynamic sub-system of the cosmos evolves so as to maximize its options and potentialities. This evolution is counter to the second law of thermodynamics.
- ▶ The cutting edge of such an evolving system gravitates toward a region rich in alternatives, resulting in existence occurring where the density of alternate possibilities is a maximum. (usually at some interface or interstice) (How does this jibe with matter at nodes?)
- ▶ The universe does not march to the beat of a single drummer. The clock rate at any locality varies inversely with the square root of the local density. Change or evolution is most rapid where the mass density is greatest.

one particular species of frequency $\tau = \sqrt{\frac{L^3}{GM}}$

TEMPSUB.WP6

PARAGRAPHS FROM SUBSCRAPS ON TEMPLATONICS

Date[02-03-97] Number[17

Subj[TEMPLATONICS

Note[Templates must be distinguished from archetypes. Archetypes are primordial and exist SAT. Templates are constructed from archetypes and may be destroyed.

How are templates created, how destroyed?

A sponge will dismember and pass through a silk screen and then reassemble. ==> template
also see sci am. feb 97

It is suspected that all compound things are templates, (see Buddha quote)

It is surmised that alpha, mu, and S are archetypes but that h, c, and G are templates.

Lovejoy's Principle of Plenitude (Great Chain of Being) has all niches filled. That is every template in time will be realized. ==> pre existence of templates.

Are ghosts templates?

	FILES
TEMPLATONICS	TEMPLATI.WP6 1996#65 ✓
FIGURE & GROUND	FIGRUND1.WP6 1996#67 ✓
"	FIGRND1.WP6 1996#40 ✓
"	FIGRND2.WP6 1996#24 ✓
REDUCTIONIS VS. TEMPLATISM	REDUTEMP.WP6 1996#61 ✓
	SIVRAM01.WP6 1997#26 ✓
	SVA SCRAP 17 (ADDY) ✓

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These are the epistemologies processed by our senses and our intellects. Properly termed, epistemologies of the head. These lead to our usual philosophical constructs, our metaphysical models. Rooted in both experience and speculation (imagination), they provide ontologies that are a mix of discovery and creativity. For this reason such ontologies are neither fully true nor fully false.

2) The Turtle: The Epistemologies of Number *[mandala on underside]*

These are the mathematical imperatives rooted in the nature of number. Their expressions provide an isomorphic map of the structure of the physical portion of the world. The limitations of a mathematical epistemology lie both in its symbolisms and in our ability to interpret them.

3) The Pine or Oak: The Epistemologies of Silence

These are the epistemologies of the "heart", the epistemologies of contemplation, meditation, and emptiness. These epistemologies involve a dedication to openness. Their ontologies transcend the grasp of language, the limitations of logic, and the restrictions imposed by intellect. The world they reveal is not of a physical nature, but has an ineffable relation to the world of matter.

4) The Egret: The Epistemologies of Recognition

These are epistemologies, not designed by us, but given to us. Recognition (not empiricism) is the way of knowing what is Beauty, what is Love, what is Good, what is True. Through them we know without believing, we understand without articulating, we participate harmoniously without direction. This because when we achieve union, one identity, then identity disappears; for ONE has no-existence.

EPI

CONTOL01.WPD

SEPTEMBER 8, 1999

COSMOS TO CONSCIOUSNESS

AXIOM 1.

The cosmos is here taken to be the totality of all that in any sense exists. It is all that there is. All parts of this cosmos are interconnected, making the cosmos a unity, a plenum, a continent, no islands. In addition no part of the cosmos exists independently or independent of the other parts. *[This implies that Brahman or whatever existed prior to cosmos did not exist in the same sense that cosmos exists. But that with cosmos now existing, Brahman becomes part of and one with what it may have created.]*

AXIOM 2.

The cosmos may be divided into two parts which we shall call Subject–Object, such as I–Thou, observer–observed, knower–known. However, ^{selector – selected} this dichotomy may be made in many ways. What is included in Subject and what is included in Object depends on the manner in which cosmos is “sliced” into the two parts. But what is not included in Subject is Object, and what is not included in Object belongs to Subject. Here the whole (cosmos) is the sum of the two parts. Further, each division or slice creates a set of ontologies.

AXIOM 3.

A particular “bridge” between the two parts of an ontological set which selects a specific member of the set is called an epistemology. Each epistemology thus describes a specific ontology that belongs to the particular ontological set created by the original Subject–Object slice.

AXIOM 4.

Each division or slice also creates a particular species of consciousness. Thus there are many possible conscious nesses each resulting from a particular dichotomy. And each governing the epistemologies that may be used.

COGNITION AND REALITY

LEVEL			
IMAGINATIVE	CONCEIVED	NOT CONCEIVED	UNCONCEIVABLE
SENSORY	PERCEIVED	NOT PERCEIVED	UNPERCEIVABLE
EPISTEMOLOGICAL	KNOWN	NOT KNOWN	UNKNOWABLE
ONTOLOGICAL	EXISTING	NOT EXISTING	UNEXISTABLE

PROPOSITIONS and QUESTIONS

- 1] The PERCEIVED is a subset of the KNOWN
because there are alternative modes of knowing beside perception, eg intuition, logic, etc
- 2] The KNOWN is a subset of the EXISTING
- 3] We habitually but erroneously assert that existence is tied to perception or
What is not perceived does not exist
- 4] Three reasons for non-perception:
 - 1) Not experienced, i.e. exists but has not been encountered
 - 2) Beyond the limitations of perception (UNPERCEIVABLE)
Some limits: Eddington limit, 1/f noise, Weber-Fechner limit,
Whitehead limit, Pythagoras' limit (some are intrinsic, some escapable)
 - 3) NON EXISTING
- 5] Besides the limitations of perception, there are limitations of knowing
These have to do with the limitations of reason and logic (Gödel),
of computability (Turing), and the nature of the random (Chaitin)
- 6] Is Gödel's incompleteness theorem (cannot be both consistent and complete)
an ontological theorem [cf Ratna Sambhava] as well as an epistemological theorem?
[Note: This theorem puts traditional theistic and monistic notions in question.]
- 7] Is consistency/inconsistency the ontological boundary between existability and non-
existability? [again Ratna Sambhava]
- 8] There must be a sufficient body of consistent {equations-propositions-phenomena} to
qualify as {theory-model-reality} ~ Einstein
- 9] Kant's *phenomena* belong to the set of KNOWN + EXISTING
- 10] Kant's *noumena* belong to the set of EXISTING but NOT KNOWN

APPROACHES TO ONTOLOGICAL MODELING

SPACES

P-SPACE: The spaces of location

First, the space of three spatial dimensions, the space of **entities**. (Events do not exist in this kind of P-SPACE because permanence or long duration in time is required for existence). In this space entities are located with respect to each other by the parameters distance and direction. Note that distance and direction may be considered to be LINKS.

Second, the space of space-time, the space of **events**. Events are located with respect to each other by not only the parameters distance and direction but by instant of occurrence and duration.

H-SPACE: The spaces of form

First, the space of shape or form only

Second, the form space that also allows scale

B-SPACE: The space of linkages, the factors underlying both **events** and **entities**.

First, the space of forces

Second, the space of bonds

Third, the multi-level space of sets of linkages, and sets of sets, etc.

EPISTEMOLOGICAL STRATEGIES (Each of these has its counter part in military strategy).

PENETRATING SINGLE FOCUS

Can advance rapidly, limited territory, fixed goal,
Strip map, Eventual stagnation with encrusted dogma

*lost in
-> details*

BROAD FRONT

Glacial advance, wide territory, receding goal,
Coastal map, Runs out of energy and ossifies

BOUNCING

Rapid movement, local territories, no goals except to keep moving,
No map, Illusion of accomplishment

LINKED SELECTED SECTORS

Moderate advance, territories with gaps, continually redefined goal,
Accurate but partial map, Self energizing

Success in any sector or parameter, attracts energy to that sector, resulting in the neglect or ignoring of alternatives. So LINKED SELECTED SECTORS may transform into PENETRATING SINGLE FOCUS.

→ insight possible

SLICES

THE UNIVERSE MODELED AS A MATRIX

Consider the universe to be an N-dimensional matrix. In this matrix, an entry, $M_{i,j,...,k}$, may represent an **event**; a column may represent a particular type of **entity**, [e.g. an atom], a row may represent a different type of entity [e.g. a photon]. a planar slice may represent a more complex **entity** [e.g. a virus]. Every linear and planar slice represents some simple or complex entity. Thus an **entity** is a particular way of organizing a set of **events**. Even a human being would be a way of organizing a set of events. Further, an **archetype** is a pattern of events that are organized differently from entity type organization, but whose organization has a measure of ubiquity that leads to repetitions.

What we call a world view is a package of slices. This package is not a picture of the whole, but only a *partial* picture of a *part* of the whole. However, we tend to take a particular package of slices as a surrogate for the whole. [e.g. the scientific world view]. Further, as our experience extends the size and dimensions of the matrix, we also tend to restrict the slices. This is an indication that there exist limits to our information processing capacity. Unless we can design some strategy for coordinating multiple world views, our understanding of the universe and of our selves is forever limited.

There are two basic epistemological strategies:

First Enlarging the Matrix. Previous examples include:

- Flat earth to spherical earth as a result of extensions in distance.
- Relativity as a result of extensions in velocity.
- Quantum physics as a result of extensions to non-locality.
- Chaos theory as a result of extensions to non-linearity.
- Complexity as a result of extensions to non-equilibrium.

Yet to be extended:

- Economics 101, extensions beyond self interest
- Aristotelean logic, extensions beyond the law of the excluded middle.
- Randomness, extensions beyond probability theory.
- Theology, extensions beyond anthropocentrism
- Time, extensions beyond past-to-future causality.
- Truth, extensions to beyond one ontology.
- And others

Second, Making Alternate Slices

- Slices that are events
- Slices that are entities
- Slices that are linkages
- Slices that are archetypes
- Slices that are forms
- Slices that are locations

Yet to be fathomed:

- Slices that are essential
- Slices that are choices
- Slices that are selections
- Slices that are creations

Archetype: Event :: Set: element

Entities organize events in one way

Archetypes organize events in a different way

Transmission of an event
through time
through space

An event transmitted through time becomes an entity;
entities can then be transmitted through space.

What would an event be that is first transmitted through space?
an idea? eg independent discovery?
a thought. Spread of an idea

SLICING TRUTH

A slice is rewiring and re-entifying what we know, reorganizing our experience in an alternate manner. Such a restructuring of knowledge is predicated on the belief that **truth** is not a single picture. While there may be a single multidimensional **TRUTH**, [say of 26 dimensions], what we consider to be **truth** is but one slice through **TRUTH**. [say 4 dimensions] It has been said no system can explain itself. How then can we discover basically different ways of viewing the world, and how can we discern our limitations and biases in experiencing and viewing the world? Is it possible to get out of our human ontological box and see the world and ourselves from the outside?

In the past we have used many symbols and metaphors to organize our experiences. Our epistemology has had many elements. There has been myth: stories of the Gods their attributes and actions. There has been philosophy: words, with grammar, and logic on how to put them together. There has been mathematics: mapping the quantitative aspects of the world onto number. There has been music: creating sounds isomorphic to the music of the spheres. There have been games: emulating the contesting forces of nature. There has been dance: attempting to feel the movement implicit in the world in our bodies. There has been art: grasping understanding of creation by creating. And there has been silence: becoming one with the world.

While we are still imprisoned in the box of our own nature, we have learned that we are in a box and that the box has a context, perhaps many contexts. So long as we were unaware of the box, we organized its contents as our knowledge. Now in calling for new slices, what are we attempting? We hope by rewiring and re-entifying to make cracks in the box. Various slices through our box may split the box and open us to the contexts. But rewiring may be the right means for the wrong end. Alternate organizations of the contents may be a proper end in itself. But the possible consequence of opening the box and exposing us to the contexts could prove to be disastrous. Those philosophers, mathematicians, and artists, who have peered out of the box have become insane.

Is the box to protect us from the context? Is it a womb, an egg, from which we will emerge when the time is right? Or is the box a prison to protect the context from us? *Such* ~~Both~~ views have been proposed. Or maybe it is one of many experiments, to see what develops within a box under prescribed conditions and rules. Brahma, the master experimenter, is interested in all the possible variations on his themes. In that case, we would like to be able to see the final report evaluating all the variations and what the recommendations for the next Day of Brahma would be.

BOTTOM UP AND TOP DOWN

Postulate three levels: The input level, the processor level, the stored criteria level.
These levels obtain in many systems: in organs, in organisms, in societies, in cultures.

In the human, the input level constitutes the senses—visual, auditory, olfactory,

PLURALISM AND OPENNESS

To go beyond the practices of religions and their claims to possessing absolute truth, and beyond the practices of science and its claims of a methodology leading to truth, requires in both cases ~~an~~ abandonment of lineages. Pluralism of doctrines, theories, models, and methodologies, while essential, is not sufficient. Full openness goes beyond pluralism. And openness requires freedom from lineages, be they priest lineages or paradigm lineages. The pursuit of all possible and conceivable solutions and models, with tentative entertainment of each alternative, requires the removal of all barriers to admission of candidate models and candidate methodologies. This is what is meant by full openness.

There are two kinds of packaging: Political packaging and productive packaging. Political packaging is made by tradition, by fiat, and for various deviant agendas. Productive packaging is made from the recognition that each input may have something of value to contribute regardless of the source. Every model or theory is a package of selected facts and experiences tied together by selected interpretations. Openness attempts to identify the selections by exposing alternatives. Selections must be conscious^x and justifiable, not automatic and unchallengeable.

The processes of filtering and eliminating must follow collection not precede collection.

Science is built on a succession of revisions and better approximations, requires the abandonment of lineages. A lineage has epistemological blinders whether it is the custodian of an unchanging absolute dogma or of a changing absolute process.

* Conscious here ⇒ explicit criteria for choice

REDUCTEMP
REDUCTEMP.WP6

61a
TemPLATONics
10/18/96

REDUCTIONISM VS. TEMPLATISM

cf 96-65
96-67

For the past three centuries reductionism has been the philosophical basis of Western science. Reductionism consists, not of *post hoc ergo propter hoc* causality, but of bottom up causality. That is the cause and explanation of phenomena are to be sought and found in their component sub-parts. Biological phenomena are to be explained in terms of chemistry, chemical phenomena, in turn in terms of physics. And each level of physical phenomena to be explained in terms of components. Molecules in terms of atoms, atoms in terms of electrons and baryons, these in terms of quarks, It is not certain how far this sequence continuous, whether it ever ends.

A story that ends
but never stops

As an alternative to reductionism it is proposed that there exists a 'template' that manifests itself in the same abstract form, but in different observables, at each level of the ontological scala: sub-atomic, atomic, molecular, cellular,... This view would hold that the sub-systems do not determine the properties of a system, but that both the sub-systems and the system derive their properties by being isomorphic at some level of abstraction to a universal template. This template would be a sort of "code book" that is contained in all material systems, from quarks to Hubble universes. Humans being part of the picture would also possess this same code book. This would explain why we find the universe comprehensible, let alone experiencable.

Several instances point to the possible validity of a template type hypothesis. There is, for example, the fact that von Neumann's construction of the essentials of reproduction in cellular automata are isomorphic to those found in the components of bio-reproduction. (von Neumann made his construction a decade before the work of Watson and Crick.) There is also a basic eight-foldedness that occurs on many levels, from sub-atomic symmetry groups through the periodic table of elements, on up to stellar and galactic types. (One could also throw in diatonic musical scales and the I Ching.)

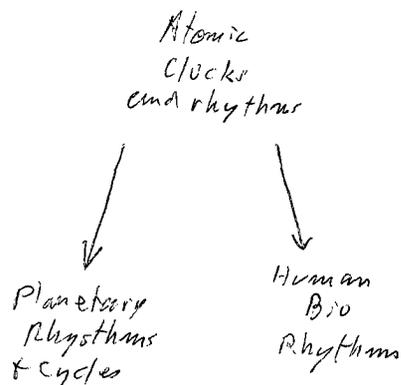
One of the criticisms of reductionism has been its inability to account for emergence. Can templatism do any better? Speculatively, we might answer, yes. Assuming that a portion of the template includes the algorithms for self organization.

As far as determinism goes, templatism would appear to be less deterministic than reductionism. Templatism has both deterministic and open ended aspects. The interface may vary with each level of manifestation.

Templatism would have less demand on temporal sequences of evolution or emergence. Development could be occurring simultaneously on several levels, it not being required that all the bricks be available before construction of the building

MORE on Templatism
DIA LOI.WP6- MIX
TEMP SUB MIX

The form of causality implicit in templatism:



Einstein felt that the next great step forward in physics could be made only after an epistemological revolution

Reductionism → Templatism?

Astrologers postulate an horizontal causal connection between planets + humans.

Templatism avoids this illusion

The template or code book could contain or include a universal clock that provides the drum beat for intra-system and inter-system coherence

Newton was criticized that his work was not explanatory. "Hypothesis non fingo" If an explanation is seeing how something works - Rube Goldberg wise - then mathematics is never an explanation.

Understanding = recognition or familiarity
What is an explanation?
[Many species

TEMPLATONISM

A template is to its realizations as an archetype is to its manifestations

[a template that is the archetype of cosmos(es)

begins. The universal code book would assure in advance that the bricks and the building would merge in a totally compatible way.

Both von Bertalanfy's General Systems Theory and J.G. Bennett's Systematics are predicated on some form of templatism. The search for commonalities in systems is inspired by the idea that at some level there exists a single Platonic archetype that is manifested in each system. The systems may be quite diverse, but on a certain level of abstraction, they are constructed around the same archetype or template. Even the importance of the concept of equivalence in human thought processes stems from the experience of the templated structure of the universe.

The most common realization of templatism is in mathematics itself. That the same equations are so broadly applicable to so many systems infers that these equations are the abstract templates on which multitudes of systems are constructed. The Pythagorean assertion that number is the basis of all extends these mathematical facts to the level of metaphysics.

At some point it becomes necessary to formalize the role of time. We may think of a template as a pattern, a process or both. Usually the idea of a template is static, a spatial description of the organization of a system. But it may also be a pattern in space-time, in which case it includes a dynamic. Or it may be a purely temporal pattern. The same three categories, spatial, temporal, or both, are also present in the concept of archetype. Indeed, the importance of Templatism may be but a reassertion of the fundamental role of archetypes.

In our experience of the world matter and information are never separate. Indeed, they may be inseparable. But until the differences in the kind of existence which matter and information possess can be clarified, we may postulate pure information. That is a separate level for the existence of archetypes-templates. But pure information or not, archetypes and templates require a multilevel world: one level on which archetypes-templates exist and another level for their manifestations. Modern science avoids such a view, choosing to restrict all causes to a single level. Since causality is also viewed as locked into temporal sequences, this approach forces explanations to conform to a linear view of time. The archetype-template view liberates causality and explanations from narrow linearity. It allows both determinism and entelechy.

cf. ^{Buddhist} The story of the dismemberment of the King's chariot

TEMPLATONISM
ABOUT ALGORITHMS
ARCHETYPES ∴ PLATO
TEMPLATES

ALTERNATE CAUSALITIES
ALTERNATE TEMPORAL SEQUENCES

Also Sheldrake
& Gurwara 1995 #23

03-04-15

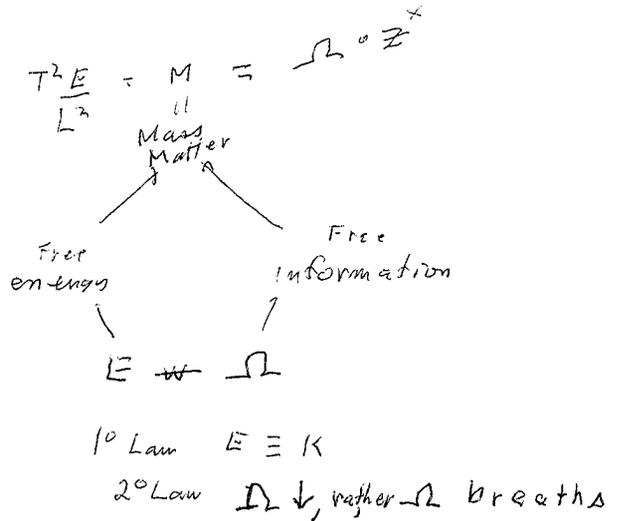
$\Sigma = \text{life forms}$

Death - Extinctions - ----- Radiants
Create potential.

Self-Organizing is the details of this process.

Three tenets of the Action-Option Principle:

- 1) $A \cdot \Omega = \text{const}$
- 2) Sleep
- 3) Death
- 4) ~~Day of Brahma~~ Extinction



The rate at which hardening is present is inverse to the remaining time of survival!

The more \leftarrow the shorter the life
 The more \leftarrow the longer the life

Both E and Ω can be crystallized, E as Mass (P-SPACE)
 Ω as Form (H-SPACE)

2^o Law "Update" \rightarrow

Ω is renewed by sleep, death, extinction

Ω is destroyed by action [in P-SPACE]

Trade off between action and Ω

Those individuals, systems, cultures, species, that are **open** live.

Closedness \rightarrow stagnation
 Openness \rightarrow extinction
 \rightarrow CHAIM

And as far as Brahma is concerned, Stagnation is a form of Extinction.

2 kinds of Action

All action \sim selection
 Selection 1) occupies Potential
 2) loses access [Quantum Mechanical to Potential]

- 1) Law of Hardening: Action \rightarrow procrastination limit
- 2) Principle of Plenitude \rightarrow Homogenization, Cancer/Cell

For the past few months I have required fewer and fewer inputs - both food and information.

I am inundated in things that need to be output.

My need is to give - I cannot acquire.

Except that I long for the oneness of my fellow humans, my dear friends, and the birds, the trees, the clouds, and the rocks.

We are all one in mutual support.

Humans must seek to belong - not to control.

Eat of the Tree of Life, not of the Tree of Control (Knowledge is Power, Control).

Latin Greek
 Unity \leftrightarrow Homogenization
 The organism of the set multiplicity

$\frac{E}{\Omega}$

$v \rightarrow 0, \Omega \uparrow$

IF $v=0, \Omega \geq 2\pi$

$M \times \Omega = ?$

IF $M \geq 0$ and $v > 0$
 $\Omega \geq 4\pi$

IF $M \geq 0$, can $v \neq 0$?

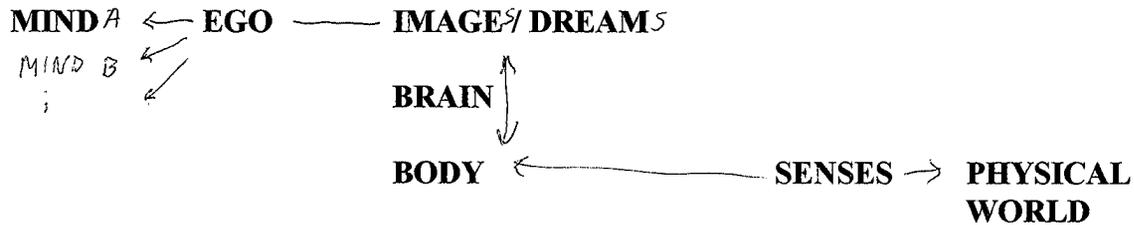
Sunday, April 13, 2003
Palm Drive Hospital, Sebastopol
9:00 am

Rev 03-04-15

Four Realms

Physical Body	strongly interact and
Associated "Images"	mutually influence
External Physical World	
{ External Mental World }	

The external mental world can act on the image only through a channel controlled by a conscious valve called the "ego".



WILL (The part of the system that articulates or "knows" this.)

Healing is ultimately a matter of LOVE.

LIFE and DEATH are the same. It is LOVE (GOD) and Ego that are different.

We sleep to recreate potential, to stop and enlarge the menu of options.

Action in the day reduces options.

Sleep at night generates options.

The same with Death.

Living reduces options.

Death restores, generates options.

This is why sacrifices are made – to restore potential.

All
Our action is driven by the law of hardening to the destruction of options and potential.

i.e., action depletes options

cf ONTEXREL EX.105) May 19 1986

ONTEXREL.P51 DISK: EPIONTOLOGY APRIL 6, 1987

SOME NOTES ON ONTOLOGY, REALITY, AND EXISTENCE

I. The First Canon of Ontology

In traditional Western thinking it is logical to associate nowhere with non-existence and to associate everywhere with existence. This seems so fundamental it needs no comment. But the famous British astrophysicist, Sir Arthur Stanley Eddington asserted that "Absolute uniformity is the ontological equivalent of non-existence." Which is to say that sameness, invariance and changelessness are the proper logical associates of non-existence while difference, variation and change are the roots of existence. Nothingness is non-existent, not because it is nothing but because it is uniform and changeless. It is not difficult to adopt Eddington's view if we substitute perceptibility for existence. Any substance which possesses absolute uniformity, all of whose properties are invariant throughout space and time, would be undetectable by our senses and its existence would escape our notice. Something must be here but not there or now but not later in order to be perceived. We can agree that perceptibility requires there be change in space or time or both, but does it follow that if something is not perceivable in any way that it does not exist? We might go even further and agree that if something is not experiencable in any way then it does not exist. But is all experience reducible to perception? Are there not other modes of experience, other inputs to our minds than sensory inputs? Or does all experience rest ultimately on percepts alone? What about imagination? Before we can completely agree with Eddington we must answer these questions.

If, as is customary, we assert that that which cannot be perceived or experienced is for all material purposes non-existent, then we may conclude that change must be a necessary condition for existence. We may thus formulate the First Canon of Ontology:
efore

UNIFORMITY-UBIQUITY <=====> NON-EXISTENCE
CHANGE <=====> EXISTENCE

Immanuel Kant postulated two ontological domains into which the world could be divided: The phenomenal world was the perceptible or experiencible world, the noumenal world was the world that lay forever beyond perception or experience. According to the First Canon the noumenal world does not exist because it is imperceptible. Nonetheless, it is useful to postulate a domain beyond our usual powers of perception or experiencibility, a domain in which there is no change, no here or there, no now or then, where x,y,z,t frameworks are meaningless; A domain of everywhere and nowhere, of forever and never, a domain without variables or whose variables are hidden.

We may speculate on the nature of this non-existent world. Since it is uniform and without change, existence/non-existence is a dichotomy without meaning. The essential dichotomy seems to be that of everywhere/nowhere. But it is possible that this too is meaningless and everywhere = nowhere and forever = never. Or there may be some sort of binary switching between the two states of everywhere/nowhere which display themselves on the interface with our domain of existence as the laws of probability. It is interesting that humans have spent great time and energy in attempts to explore the noumenal world. Theologians, philosophers, physicists, occultists all have their views of this non-existent domain.

Lest we succumb to a semantic trap, we must avoid generalizing the concept of existence beyond its attributes given in the First Canon. We may meaningfully discourse on ontological domains that do not exist so long as existence is associated with experiencability in accord with conventional modes of perception. That is to say, an ontological domain may exist in accord with the most general use of the term exist, but not in accord with the definition of existence requiring the presence of change.

The role of
imagination
in all this
do - det

ON PERCEPTABILITY, ACUITY, AND AWARENESS

It is important to recognize the relationships between change and perceptibility. Perception does not automatically occur when change occurs, perception may occur only when the change occurs at certain rates. There is the well documented experiment of frog boiling. If a frog is suddenly immersed in very hot water it will immediately jump out, but if the frog is immersed in tepid water which is slowly heated, it will remain in the water and even boil to death. Perception has to do with acuity or sensitivity to rate of change. Thus the phenomenal world is the world filtered to us not simply by the binary changing/unchanging dichotomy, but by our acuities to change rates. Rates of change are called 'second derivatives' by mathematicians and physicists. It is not surprising that the basic equations describing the world of classical physics are for the most part equations involving second derivatives. Our mathematical descriptions of the world reflect our perceptive filters.

II. The Second Canon of Ontology

Chang Tsu, the Chinese sage tells of his dream of being a butterfly. When he awakened he puzzled over his confusion between his dream condition and his wakeful condition. "Am I a man dreaming I am a butterfly or am I a butterfly somehow dreaming I am a man?" If when we fell asleep and dreamed our dream would always begin where it left off when we awoke, just as our wakeful existence always begins where we left it when we went to sleep, then we certainly could not distinguish between our dream and wake states. The factor that makes the wake state more real than the dream state is continuity. We may thus hold that at root of what we call reality is continuity.

FRONTIERS OF EPISTEMOLOGY

THE UNIVERSE IS SO CONSTRUCTED THAT IT SETS ASIDE PART OF ITSELF TO OBSERVE AND REFERENCE THE WHOLE.

1 → 2

I. The observing portion involves "States of Consciousness"

- A. Each state of consciousness has its own science, i.e its own epistemology.
- B. Or each "level" has its own epistemology.
 - 1. Cf. navigation on land and navigation at sea.

II. An epistemological system

- A. Experiencer or collector
- B. Sorter, comparer
- C. Organizer ...

III. ~~Information Spaces~~ COGNITIVE SPACES

A. Reality and the nets used to explore it. The experiences collected by the net reflect the nature of the net as well as the nature of reality.

IV. Changing net mesh

*One mesh size is called, "objectivity" **

- A. One way to view this is as changing the state of consciousness. Each state reveals a different aspect or reality.
- B. What are the devices which may be used to move from one state of consciousness to another?
 - 1. Drugs
 - 2. Meditation
 - 3....

What is objectivity?

*It is a community consensus overruling individual opinions and assertions, requiring communicability on a lowest common level
∴ requiring repeatability and ubiquity*

** objectivity ≠ truth*

V. How is information transferred from one state to another? or what is the nature of inter-state communication?

A. Can information be transferred? Is information in state A information in state B?

B. Each state has its own code book.

C. ^{Exterior} Trans-state languages and intra-state languages.

1. Trans-state devices

a. pharmaceuticals

b. music (a trans-state language?)

c. mysticism

d. dreams?

2. Intra-state languages

a. vernaculars

b. programming languages

c. mathematics

VI. Meta-epistemology

A. Do there exist epistemological principles which are applicable in all states of consciousness?

1. More out than in?

2. Prediction?

VII. Epistemology $\langle = = = \rangle$ Ontology

A. While there are appropriate epistemologies for each state, each epistemology in the set of state epistemologies generates an ontology or sub-reality in that state.

B. An ontology has a characteristic topology and logic.

C. Archetypes are the essential "geometric" properties associated with a particular topology.

VIII. Two categories of epistemologies

A. An epistemology for creating a framework *OR VESSEL*

B. An epistemology for placing experience in a *THE VESSEL* framework. *FILTERS*

IX. Attributes of an Epistemology

A. Experience in, knowledge out

B.

X. Learning I and Learning II

A. Preparing to encounter totally alien worlds.

AN EPISTEMOLOGICAL SYSTEM

1. DESIGNATE or DELIMIT THE DATA AREA

The data area is the domain from which data is to be taken. For example, in astronomy, the basic data area is the ^{entire} sky, itself. In archeology, say, the Mayan culture in Northern Yucatan.

2. SIGNIFICATE THE DATA AREA

Earmark special sub-areas for focus. For example, in astronomy, the nearby galaxies, M31, M32, NGC205; in archeology, tools, and utensils, ^{or inscriptions}

2..1. THE 'WHY' OF SIGNIFICATION

Signification is needed because of the limited band-pass of the human mind. It is generally impossible to operate with any data area in its entirety. Therefore we select or significate.

2..2. THE 'HOW' OF SIGNIFICATION

Signification is done on the basis of emphasis → and focus on what has been selected with the denial or ignoring of what has not been selected.

2..3. THE BASES OF THE 'WHAT' IN SIGNIFICATION

2..3..1. SELECTION FROM INTEREST

Selection from interest is ^{an} a priori selection. It may be done without any previous experience or knowledge of the data area. Interest involves the question of 'to whom'. Interest in general is a psychological, and therefore an individual parameter.

2..3..1..1. THAT WHICH IS CHANGING

Especially at certain critical rates. e.g. Lava Lamps, the obverse of frog boiling.

2..3..1..2. PATTERNS

Regularities, ^{symmetric} simple or aesthetic patterns in space or time.

2..3..1..3. ANOMOLIES or THE DIFFERENT

This requires sufficient familiarity with the data area to recognize something as being unusual.

2..3..1..4. RECOGNITION

Even without previous experience in a data area, from time to time a piece of data may be significated on the basis of some sort of deja vu insight. This may ^{arise} through analogy or something ~~more~~ paranormal.

the basis of interest
or importance
what has worked
i.e. what has
proven valid

2..3..2. SELECTION FROM IMPORTANCE

Selection from importance is based on past experience with the data area and its relations to other areas. Importance is primarily a societal parameter, a matter of consensus among members of the social order.

2..3..2..1. RECOGNITION

Memory or knowledge of history is involved. A previously established pattern or archetype of importance is seen to be unfolding.

2..3..2..2. ATTITUDE and VALUE

Traditional attitudes or values, (whether valid or not), may be the basis of selections.

3. COLLECT DATA *-laundry list*

4. ORGANIZE DATA *- laws of information exchange*

We may recognize structure or impose structure on our data. If our structures conform to more than their inputs, then we conclude they are 'real' or 'natural' and that we have organized correctly.

4..1. FOR ECONOMY *Purposes*

4..2. FOR PREDICTION

4..3. FOR MNEMONICS

5. DISPLAY DATA

6. DISSEMINATE DATA

7.

A tool is the organization of data

iterated significations what "fits"

Can this be mapped onto the five tathagatas?

Post Signification = Scaling

Pre Signification

Non-Signification - the useless

Speculations of Automated research

Point telescopes... print paper in Ap J

space exploration

cognition spaces

Death – Extinctions – ----- Radiants

Create potential.

Self-Organizing is the details of this process.

Three tenets of the Action-Option Principle:

- 1) = const
- 2) Sleep
- 3) Death

The rate at which hardening is present is inverse to the remaining time of survival!

The more	the shorter the life
The more	the longer the life

Those individuals, systems, cultures, species, that are open live.

Closedness	stagnation
Openness	extinction

And as far as Brahma is concerned, Stagnation is a form of Extinction.

For the past few months I have required fewer and fewer inputs – both food and information.

I am inundated in things that need to be output.

My need is to give – I cannot acquire.

Except that I long for the oneness of my fellow humans, my dear friends, and the birds, the trees, the clouds, and the rocks.

We are all one in mutual support.

Humans must seek to belong – not to control.

Eat of the Tree of Life, not of the Tree of Control (Knowledge is Power, Control).

Sunday, April 13, 2003
Palm Drive Hospital, Sebastopol
9:00 am

Four Realms

Physical Body	strongly interact and
Associated "Images"	mutually influence
External Physical World	
External Mental World	

The external mental world can act on the image only through a channel controlled by a conscious valve called the "ego".

MIND	EGO	IMAGE / DREAM		
		BRAIN		
		BODY	SENSES	PHYSICAL WORLD

WILL (The part of the system that articulates or "knows" this.)

Healing is ultimately a matter of LOVE.

LIFE and DEATH are the same. It is LOVE (GOD) and Ego that are different.

We sleep to recreate potential, to stop and enlarge the menu of options.

Action in the day reduces options.

Sleep at night generates options.

The same with Death.

Living reduces options.

Death restores, generates options.

This is why sacrifices are made – to restore potential.

Our action is driven by the law of hardening to the destruction of options and potential.

KNOWLEDGE AND UNDERSTANDING

The framework or schema is the bottle
The experiences are the wine
The understanding is the taste

Knowledge

Derives from communication
(a special limited kind of
experience) Is inculcated and
truncated by verbal and
symbolic communication

Head centered

Involves memory and
recollection and the creation
of a code book

Usually requires repetition to
gain significance.

Organization of Knowledge
Requires an epistemology
First, the creation of a
schema or matrix for
organizing inputs, then the
proper placing of the inputs.

theott2.wp6

Understanding

Derives from direct experience
and deep involvement
May be symbolized usually in
ritual

Heart centered

Involves recognition and an
indigenous "code book"
Where is this code book?
In the collective unconscious?
In past experience?
Outside of time?

May involve only a single
occurrence.

Organization of Understanding
Experiences into stories
Stories into archetypes
Archetypes back to Myths

Since understanding involves
recognition and we can
recognize ourselves and our
experiences best through
stories, the story is the
module of understanding.
[story=anecdote=parable=myth]

April 5, 1995

Today there is much knowledge and little understanding. This is because understanding derives from direct experience while much of our culture lies beyond everyone's direct experience. For our culture to function we are forced to depend on indirect experience, schooling, books, lectures, for the transmission into each head of somebody else's primary experience. Secondary or transmitted experience rarely carries with it an adequate measure of understanding. The case of the astronauts illustrates this effectively. Russell Schweickart reported that

"...having spent ten days in weightlessness, orbiting our beautiful home planet, the overwhelming experience was that of a new relationship. The experience was not intellectual...[it was] the unavoidable and awesome personal relationship, suddenly realized, with all life on this amazing planet...Earth, our home." "What the experience of seeing this amazing planet for space does is to take it beyond the intellectual and into the personal." from The Home Planet

Understanding involves recognition and it appears that what is at root in recognition is relationship. A relationship with something beyond and bigger than ourselves. What we recognize is what we are related to and we recognize only because we are related. Those who share recognitions are related not only to each other but to some common invisible source, indeed their relation to each other comes through and from this common source. This source need not be genetic, but is parental in the sense of its begetting from the same image. And begetting is the right word, for the begetting source empowers those whom it begets to become begetters.

But beyond Knowledge and Understanding

*Knowledge ≠ Understanding ≠ Realization ≠ Liberation
Mindfulness Enlightenment Transformation*

The moods of verbs may be used as a template for exploring the relationships that obtain among certain traditional Western ontological concepts. At some point in the development of a language the various types of reality recognized by the users of the language must by some device be made accessible to discourse. Whereas the temporal relations obtaining within the physical world were organized through the **tenses** of verbs, the ontological relations between worlds or realities seems to have been organized through the **moods** of verbs. Consequently the properties of the moods provide clues to historical (and pre-historical) notions of the metaphysical structure of the world. Curiously the moods appear to map a broader spectrum of realities than our current worldviews support, except for the recent contributions to ontology by quantum mechanics and importations from some traditional Eastern views. For reference, the usual moods assigned to verbs in most Western languages are given in Table 1.

MOOD NAME	ASPECT OF REFERENCE
INDICATIVE	The objective and the factual
SUBJUNCTIVE	The contingent and the possible
OPTATIVE	The desired and the hoped for
IMPERATIVE or	Commands, entreaties, exhortations
INJUNCTIVE	Prohibitive commands <i>[why restrict, i.e. why use this definition?]</i>
INFINITIVE	Reflexive, self referential
INTERJECTIVE	Exclamatory, interruptive

The indicative mood governs the material world, the world of physical existence. It is descriptive of what is, and to the extent that deterministic causality is the governing principle, it is descriptive of what was and what will be.

The subjunctive mood governs alternative worlds. Worlds that could be, should be, or even might be. It also speaks to the past and future of such worlds, what might have been, what might yet be. A sub-class of the subjunctive is the optative which focuses on hopes and preferences, what we desire and wish for. It is most interesting that in modern times the subjunctive is disappearing from usage. This is not so much from people no longer having hopes or desires, but from increasing inability to discriminate the is from the ought. Translated into cybernetic terminology, the error signal is lost and navigation becomes impossible.

If the indicative mood governs the domain of is, and the subjunctive mood governs the domain of ought, then we may say that the imperative mood governs the domain of do and make and its sub-class, the injunctive, governs the negatives, don't and unmake. These are the domains of process and algorithm, the domains of becoming and creation. "Let there be light". These are the domains of conversion of ought into is, of the possible into the actual, and the transformation of 'subjunctive worlds' into the 'indicative world'.

alter this definition of domain

The infinitive mood is much more subtle. It appears to retain but a vestige of a metaphysical view that has all but disappeared from the Western way of thinking and perceiving. But its very name suggests that it was once concerned with much more than we now assign to it. Today, the only remaining use of the infinitive is the transformation of a verb into a noun, but in a deeper sense this reflects the transformation of the world of process into the world of things. The infinitive and the gerund thus allow us to give the same concreteness to processes that we customarily project onto rocks and tables. If we think of the material or physical level as horizontal, then the infinitive introduces us to the vertical. It affords us access to other levels by a special type of self-referencing. Becoming may be brought down and substituted for being, world-lines replacing objects and events replacing places.

Finally, no schema should be considered complete without a means of breaking out of it. Every system must have an escape hatch, some way to interrupt it and reset it. We must be able to laugh at it, to mock it, as well as to operate it and maintain it. It is known that transformation and innovation for any system must come from its context, from outside the system. The interjective or exclamatory mood allow us not only escape, but allow us to affirm that there is an outside, a context. No matter how great our system of worlds, there is always an "other" lying beyond on the outside--I'll be damned!

THE SUBJUNCTIVE CREATES POTENTIALITY
THE INJUNCTIVE CREATES REALITY
THE INDICATIVE DESCRIBES REALITY
THE INFINITIVE ENTIFIES PROCESS

Stories are devices to put the other modes into the indicative. To make real, to give life and vitality. For it is an attribute of the indicative that it is alive.

Memory Make - Mead

REFERENCE: SN: 01/13/90, p19 Representation, Symbol,
Sign, Icon

Signals, Symbols, and Scent

I cannot let your designation of honeybee signaling as "symbolic" communication go unchallenged ("New Dancer in the Hive", SN: 10/28/89, p282). Denotation is not a sufficient criterion to label a signal a symbol. The relationship between the signal's form and what it denotes must be noniconic.

Honeybee signaling, however complex, still exhibits a necessary identity between the activity constituting the signal (body wagging and orientation) and what it denotes (food source distance and direction). Therefore, it can only be considered an iconic, or nonsymbolic, form of communication.

John Rhoades
Associate Professor of Anthropology
St. John Fisher College
Rochester, N.Y.

*iconic ~~to~~ symbolic
denotation ~~to~~ conotation*

"TALL SKINNY BOX" REVISITED

Models are constructed as analogues, as metaphors, out of words, out of symbols, out of equations, out of archetypes,...

A model is a bridge between human understanding and a cosmos. A cosmos is multi-faceted, it can accept many projections, i.e. be modeled in many ways. Examples are the spiritual world, the Great Pyramid, both can accept many projections. Humans as finite creatures must select facets to serve as the total, it is our finiteness that underlies our requirement of consistency.*

In selecting a cosmos and a model for it, we are trying to understand ourselves for we are also a cosmos. Thus a model is a device to match four cosmoses. Man and World, Material and Spiritual.

cosmoses?

The value of a model is measured basically by three parameters:

- Comprehensiveness or Inclusiveness (how many fits) i.e. the extent of the domain or range of phenomena fitted.
- Precision or Accuracy (how good the fits) i.e. the degree of closeness of fit
- Simplicity or Succinctness (how straight the edges) i.e. the number of axioms ("epicycles") in the model; the number of inputs, of arbitrary constants, etc.

There is also the matter of consistency, of which there are two kinds, self or internal and consistency with other models. (This is the domain of Ratna Sambhava). The criterion of consistency

is related to the value of monism, the goal of total unity within the one. However, sometimes unity is a synonym for simplicity.

Other values, such as utility, range of applicability, or elegance are in large measure determined by the above three.

If we imagine a "cognition space" of three dimensions along whose axes are the measures of the above three parameters, then the value of a model is measured by the volume of the model in such a space. However, the reciprocal of simplicity must be used as the third axis.

In such a space we used to say the the notion of God, as a model or explanation, was like a tall skinny box. The inclusiveness was almost unlimited, the simplicity was in one sense ultimate, but the precision was almost entirely lacking, in that no predictions could be made with the model. A replacement hypothesis or model in modern times is the notion of 'Chance'. Its volume, like God's is very large in IP/S space. Its inclusiveness is somewhat less, its simplicity is about the same, but its precision is much greater. In any event at the present, the two models with the greatest volume are God and Chance.

The approach of Karl Popper is to look at the negations of the parameters: What is the extent of non-fits or contradictions of the model, what is the extent of precision. Negation either delimits the inclusiveness or stretches the precision.

** There is really no such thing as inconsistency
only there are different views
of a more profound whole.*

*What is the plural of cosmos? - a word for which it a plural
of universe?*

BOORSTIN.P51

01/25/93

In the following paragraph taken from *The Discoverers* by Daniel J. Boorstin (p295), are enumerated the epistemological parameters of a scientific theory:

To understand the paradoxical beginnings of modern science, we must recall that this beautiful symmetrical scheme, much ridiculed in the modern classroom, actually served very well for both astronomer and layman. 1) Accuracy It described the heavens precisely as they looked and fitted the observations and calculations made with the naked eye. The scheme's 2) Simplicity simplicity, symmetry, and common sense made it seem to confirm 3) Comprehensiveness countless axioms of philosophy, theology, and religion. And it actually performed some functions 4) Explanation of a scientific explanation. For it fitted the available facts, was a reasonably satisfactory device for 5) Prediction prediction, and harmonized with the accepted view of the rest of nature. In addition, 6) Economy it aided the astronomer's memory with a convenient coherent model, replacing the list of miscellaneous facts then known about the heavens. More than that, while this much maligned geocentric, or "Ptolemaic," scheme provided the layman with a clear picture to carry around in his head, 7) Usefulness it helped the astronomer reach out to the unknown. Even for the adventurous sailor and the navigator it served well enough, as Columbus proved. The modern advance 8) Stepping Stone to Copernicus' heliocentric system would be hard to imagine if the geocentric system had not been there available for revision. Copernicus would not change the shape of the system, he simply changed the location of the bodies.

Of course the traditional geocentric system of Aristotle and Ptolemy and so many others over centuries had its own weaknesses. For example, the system did not explain the irregularities observed in the motions of the planets. But the layman hardly noticed these irregularities, and anyway they seemed adequately described by the supposed movement of each planet within its own special ethereal sphere. Astronomers were adept at explaining away what seemed only minor problems by a variety of complicated epicycles, deferents, equants, and eccentrics, which gave them a heavy vested interest in the whole scheme. **The more copious this peripheral literature became, the more difficult it became to retreat to fundamentals.** If the central scheme was not correct, surely so many learned men would not have bothered to offer their many subtle corrections.

We see the same archetype being repeated in modern cosmology.

My italics (underlining)

cf. MODELS01.P51

1992 (1)

cf. Tall, Skinny, Box

DICHOTOMIC SETS

(Dyads)

A dichotomic set is a set consisting of two species of elements which are not interchangeable. Such a set exists on two levels in the sense that every element of one species bears a control, contain or represent relation to elements of the second species. Examples include 1) the ensembles used in statistical mechanics consisting of the two species balls and boxes or particles and cells; 2) the keys on a computer keyboard consisting of the two species shift-keys and character-keys.

address + content

Some Definitions

MESSAGES will be defined as sequences of symbols. A sequence may be either spatial or temporal, but in either case is one dimensional. A SYMBOL is a spatial pattern or array of one or more dimensions made up of CHARACTERS. CHARACTERS are themselves symbols made up of MONADS. A MONAD is a binary element having two values, 0 or 1.

Construction of Messages

A monad is constructed by pressing a key or not pressing a key. A character is constructed by creating a multidimensional array of monads. The dimensions may be the spatial dimensions x,y, and z, the temporal dimension t, the color dimension c, the intensity dimension m, Symbols are hierarchically or self-referentially organized characters. Messages are linearly organized symbols.

This differs from dyads such as 0/1 true/false which are not binary i.e. one level

Knowledge begins with anecdotes or stories. Anecdotes and stories refer to the possible or to the potential, not to the actual. We may use a set of anecdotes, however, as clues to construct a body of systematized knowledge. (which is what we associate with 'actual') But whether a set of anecdotes is systemizable or not, the anecdotes or stories are themselves a body of knowledge. They are thus derivative from some epistemology, since associated with every body of knowledge is an epistemology.

anecdotal evidence

23-82

COSTATE INFORMATION CENTER

The CIC is a tool to support the activities of the Stewards of the Costate. It is to employ state of the art techniques to collect, significate, organize and disseminate data. Its facilities will include libraries, databases, computers, graphics, publishing, and other such hardware and software necessary to perform these functions. It is also to contain audiovisual data display equipment of various types, electronic, film, optical, etc. for both research and data dissemination. It is to create and/or join international nets and networks to abet collection, research and dissemination of all types of data. It is charged with the development of evaluation criteria, and effective processes and strategies for successful operations in each area of responsibility.

At the present time no paradigm for the Costate Information Center exists. However, the 'World Game' of Bucky Fuller, various operations used by Stewart Brant in assembling the Whole Earth Catalogue and CoEvolution Quarterly, and certain departments of various think tanks, such as the Rand Corporation, all include aspects of the visualized center. But basically its mission lies in unexplored territory, and in the broadest sense its mission is the development of an institution to carry on the global cultural responsibilities early borne by the Mystery Schools, later by the Academies, then by the monasteries, and most recently by the universities.

Human proclivity for collection has dominated the other phases of information processing, resulting in storehouses filled with unorganized and mostly unretrievable data. (Example, the International Geophysical Year.) While many excellent and valuable collections exist (e.g. Manas) which have yet to be converted into databases, currently much fundamental data is being put into magnetic format, and CDROMs are beginning to make this data available to thousands of computers across the nation. But the processing process itself, given any number of CDROMs, is still not available. This is because the processing of data in its fullest scope, properly called "The Epistemological Process", has never been adequately articulated. Hence, one of the first tasks of the CIC will be to perform the self-referencing operation of articulating the epistemological system, spelling out step by step how we convert experience into culture.

ie. the creation of tools

*Try Just off
You Just On*

Charles Lames' Studio

COSINFCR.WP1

DISK J

04/22/87

@FONT TAYL10B;

COSTATE INFORMATION CENTER

@FONT TAYL9;

The CIC is a tool to support the activities of the Stewards of the Costate. It is to employ state of the art techniques to collect, significate, organize and disseminate data. Its facilities will include libraries, databases, computers, graphics, publishing, and other such hardware and software necessary to perform these functions. It is also to contain audiovisual data display equipment of various types, electronic, film, optical, etc. for both research and data dissemination. It is to create and/or join international nets and networks to abet collection, research and dissemination of all types of data. It is charged with the development of evaluation criteria, and effective processes and strategies for successful operations in each area of responsibility.

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Search + Replace dissemination

DECODING AND RE-ENCODING

The product of human exploration of the world is an encoding of our interactions with the world in a code that attempts to be communicable to all humans. We call this encoding of experience: knowledge. From an anthropocentric view, the universe is already encoded and our task is to decode and re-encode it. This is particularly the task of science: the decoding of the world from its natural symbols into a new code consisting of a set of human created symbols (usually linguistic) that we hope will be isomorphic with the original. How faithful our recoding is to the original is an unknown, but it is the best we can do not having possession of the original code book. The fact that our encoded representation of the world seems successfully to reflect in large part the original code has encouraged us to adopt this process. However, we must be aware that from time to time we must revise our code book and on occasions scrap it.

But there are those who hold that this method of decoding and recoding will never give but a dim and approximate view of the original code. It is the mystics who will argue that we, as part of the world, have already been given a copy of the original code book. It resides within us. To observe the outer world, in order to decode it and then to re-encode in terms of an inadequate set of ad hoc symbols, is to the mystic a round-a-bout path to understanding, and one with low probability of coming to the correct code. Better to study and internalize the original code book itself which is in our possession. This would be a more direct path to understanding.

03/08/94

We encode iteratively. This is done linguistically when a single word comes to stand for the paragraph required to define it on a more elemental level.

Instead of a linear encoding 01100...1100
or an encoding where the special word is {110111001001}

We could use {?} to signify 2⁰ order code, {?} {?} etc.
or what is usually done.

We decode, the elemental message
using code book 1.

re-encode using code book 2

decode using code book 2

re-encode using code book 3
.....

It is this iterated process of decoding
creating a new code book and re-encoding
that compacts information.

Iteration requires a 3⁰ symbol 0, 1, -
to designate 2⁰ and higher level encoding

e.g. 01101101-01110011-01101111
2⁰ level code

Better 4 symbols 0, 1, {, }

so we know beginning and end

THE JIGSAW PUZZLE AS METAPHOR

also do the Cube
and Conway's Life
as metaphors

Energy assumes many forms: Potential, Kinetic, Electrical, Chemical, Atomic, Light, Heat, etc. Similarly, Information can assume many forms: Frozen in matter, stored in a memory, flowing in a wire or through space, encoded and stored symbolically. Information tends to liberate itself from all incarnations into matter in which in may be found and return to some purely informational domain--The Informational Valhalla. Its incarnation into matter is manifested by structure, order, definiteness. It is the Second Law of Thermodynamics that informs us that information is always seeking to free itself from matter and depart. Every node, i.e. every energy-matter center thus constantly radiates information. A star radiates, not because of some imperative of energetics, but because of the great informational imperative of the Second Law. Perhaps the Second Law is just telling us that matter and information repel one another.

If this be so we must ask, how then does information get into the physical universe in the first place? Its incarnation seems always seems to be the result of an act of will. Perhaps, what we call Will is the process dual to the Second Law. The Second Law of Thermodynamics is the imperative that separates information from the physical world, Will or Telos is the process that incarnates information into the physical world. (Have we here tacitly assumed that there exists for information something like the first law of thermodynamics, that information can neither be created nor destroyed? This is probably not the case.) However, when we perform an experiment, make an observation, make a choice, answer a question as true or false, thus seemingly increasing the information in our possession, are we not really decreasing the information content of the universe, i.e. increasing entropy? But these are all acts of will. This is a paradox.

From Plato's Cave to Bohm's Explicate and Implicate Orders, humans have had the recurring insight that the physical world is but part, and perhaps a very small part, of the Universe with upper case U. The other world has been called the spiritual world. Today perhaps we may think of the other world as the informational Valhalla (TIV) referred to above. But without equating the other world with TIV, what we say about information seems to have many parallels to what mystics and others have had to say about spirit.

MEDITATIONS ON JIGSAW PUZZLES

At this point I would like to introduce the metaphor of jigsaw puzzles.

The jigsaw puzzle contains information in two modes. First the information 'incarnated' into the matter in the shapes and forms of the various pieces and second the information contained in the colors and patterns of the picture. Solving the puzzle requires that we go back and forth between imaging a pattern and fitting pieces. The first is a 'vertical' operation going between the level of the pieces of the puzzle and our image of what the picture might be. The second is a 'horizontal' operation working on the consistency or fit of the pieces. It is the operation of logic, constrained by consistency. As the second operation proceeds we are repeatedly forced to revise our image of the picture. Metaphorically this describes the growth of human knowledge and the growth of scientific knowledge in particular. However, the dichotomy of vertical and horizontal is not identical to the dichotomy of concept and percept or the dichotomy of theoretical and empirical. The vertical always involves the imaging of some complete picture. Concepts and theories cover but parts.

As we attempt to solve a jigsaw puzzle, we use our two basic cognitive operations of noting commonalities and making discriminations. We collect pieces of similar color or pattern and we discriminate them by their shape. Finding a commonality is a form of abstraction. That is, while two or more things may not be identical, if

Meditation Will, Making a Jigsaw Puzzle

JIGSAW

we can find some attribute(s) in which they are alike, such attribute(s) are an abstraction from the whole. In the jigsaw puzzle the colors, the patterns, the picture are the guides to commonalities. Thus it is through the process of abstraction that we proceed toward the picture. Here is another paradox. We think of abstraction as departure from the concrete, yet abstraction is the process to the definitive picture.

MILKING THE METAPHOR

So far our metaphor has employed a the attributes of a conventional jigsaw puzzle. But let us introduce the Second Law of Thermodynamics. The pieces gradually lose the incarnated information, that is their shapes lose their uniqueness and all tend to become squares of equal size. The picture, on the other hand may either be independently preserved or may now become alterable since the constraint of consistency has been greatly relaxed..

An Hypothesis is the formulation of a question so that it may be answered: True or False

But we have not seen the total picture,
~~But~~ we can only image from the pieces we have experienced and
have so far succeeded in joining.

The bigger of joined portion, the more confidence
we place in our image of the picture

However, there remain piles of "where do they go?" pieces untouched
These are the experiences ignored - denied by our ^{present} image of the picture
The Heretics don't get know when they fit

At this point in human history we have discovered a new pattern
or an enlargement possible to an old pattern
Say - we have found where the green pieces go

In the entropic jigsaw
Perhaps the pieces may be shaped by the player

Does Gödel say I pieces that will never fit?

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19. Peterson, Ivars, **THE MATHEMATICAL TOURIST** (Freeman, 1988), p27
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*Gödel & Jung: The Twilight of Rational Consciousness? - Robin Robertson
Psychological Perspectives Fall 1987 p 304*

GÖDEL

Notes:

The semitechnical references give brief and moderately understandable descriptions of Gödel's incompleteness theorems and their implications. Especially worth reading is Doug Hofstadter's essay in reference 2. It is a summary of the concepts in his book, **Gödel Escher Bach**, which though not listed above is perhaps the most complete discussion anywhere of the paradoxes of self-reference.

The technical references go into the ideas of mathematical formalism and its violation by Gödel. Most of Gödel's original paper is in reference 8, while the other references reproduce his proofs with explanatory comments. Especially thorough is reference 10.

The popular references are given to show the widespread acknowledgement by writers in many different fields of the revolutionary and seminal nature of Gödel's results. The implications and applications of his work are only beginning to be understood. His basic paper was published in 1931, but only in the 1980's did the ideas really begin to spread beyond narrow mathematical circles.

One of the best popular summaries of Gödel's reasoning and its import is contained in a paper by Robin Robertson entitled "Gödel and Jung" in the Fall 1987 issue of *Psychological Perspectives* (Vol 18, No 2, p304-318). (This journal is published semi-annually by the C.G. Jung Institute of Los Angeles, 10349 West Pico Boulevard, Los Angeles, California 90064.)

Here are ten ways in which the essence of Gödel's results have been stated:

consistency is anti-facetism

1. "If arithmetic is consistent, then it is incomplete" Ref 10: p1694
a "0" statement used in the proof
2. "Any branch of mathematics sufficiently complex as to be of interest (e.g. arithmetic, geometry, etc.) will be either inconsistent or incomplete." Ref 18: p158
3. "The consistency of arithmetic cannot be established by any meta-mathematical reasoning which can be represented within the formalism of arithmetic." Ref 10: p1694
4. "No finitely describable theory can codify all mathematical truth." Ref 11: p176
5. "For any given finite system there is a truth that the finite system in question cannot recognize as true." Ref 11: p165
established
6. "Gödel showed that there exist undecidable propositions in axiomatic systems of sufficient richness." Ref 6: p295
7. "No matter how comprehensive we think we have been, there will always be some propositions which escape the net." Ref 7: p108
8. "Any system of knowledge about the world is, and must remain, fundamentally incomplete, eternally subject to revision." Ref 11: p173
9. "Rational thought can never penetrate to final, ultimate truth." Ref 11: p177-8
10. "There are things the mind can do that a brain cannot." --Gödel

11. From the above statements in the order given, it appears that the implications of Gödel's results are being generalized far beyond what was proved in his initial paper which involved only arithmetic. But the way the proof was constructed the requirement was that the logical systems involved be at least as rich or complex as arithmetic in order to map a more complex system (in the original case, a set of meta-mathematical propositions) onto the natural numbers. Hence the above statements while being substantive generalizations are yet but special cases of the theorem.

Paradox

Any finite logical system such as a file which can be encoded by the natural numbers will encounter the limitations predicted by Gödel's theorems. Thus in the case of a simple file, there will always be items whose position in the file will be undecidable. Hence the miscellaneous category. If these undecidable items are rejected, making the file self consistent, then it will be incomplete. Anyone with experience with files knows, without going through Gödel's rigorous proof, that consistency is not possible without incompleteness, i.e. that there will always be items that belong in the file but for which there is no suitable category.

11. "Gödel's theorem demonstrates that no algorithm that demonstrates a mathematical proof can also prove its own validity. In order to provide such a proof, a larger and more embracing algorithm is required which, in turn, cannot prove its own validity, and so on p4 #21"

*=> The Cosmos - being complete - cannot be consistent
cannot be represented by one theory, one model,
one orthodoxy, one God*

Gödel precludes Montheism

Only an incomplete cosmos can be consistent

Since the 20's of the present century, the ontological foundations of the basic philosophy of the western world -- rationalism/materialism, have been seriously undermined by the findings of both physics and mathematics. The assumptions of materialism have been brought into question by the experimental results of quantum mechanics, while those of rationalism have been overthrown by the work of the Austrian mathematician, Kurt Gödel.

In brief what Gödel did was to develop a proof that any logical system, at least as 'rich' as arithmetic, must be either incomplete or inconsistent. Formal axiomatic systems are considered 'complete' if every true statement which can be made pertaining to the system can be derived from the definitions, axioms and operations of the system. A logical system is said to be 'consistent' if it is not possible to derive both a statement and its opposite from its set of definitions, axioms and operations. Hence logical thinking will either not be able to acquire and prove everything that is true in its domain or it will contain paradoxes and implicit contradictions.

Since arithmetic is the basis of all higher mathematics and since mathematics is the language of science, Gödel's results imply that with the tools of logic and rational thinking we are limited, and our knowledge of the world must depend on other sources. If we trust exclusively in the rational then there will either be true propositions that are missing or we will be plagued with statements that can be simultaneously both true and false. However, the implications of this for the epistemology of science are not necessarily devastating, since the real source of ideas is not logic, but intuition. However, we shall have to face the reality that if we pursue completeness there will be 'islands' of knowledge that are forever unbridgeable by logic. Or if we opt for monism, monotheism, ..etc in any of its forms, we are forever forbidden access to the whole. It is paradoxical that such generalizations of Gödel's original results are but special cases of his theorems.

(An example of a statement that is simultaneously both true and false, is given by the 'Barber Paradox': In a certain village the barber shaves every male villager if and only if the villager does not shave himself. Does the barber shave himself?)

A theorem with the property that

A generalization is a special case of itself.

cf Hofstadter's strange loops e.g. Jeffersonian people
and some poems

Opting for any ^{mono}mono-structure closes ^{off} access to the whole.
e.g. consistency

→ There comes a point when opting for more structure →
closes access to the whole

FOR ARCHETYPES

SUPERCEDED

FESERP3.WP1

DISK ESSAYS1

8/11/87

ALL FETHSERP.WP1
DISK: ESSAYS1

8/11/87

ON PROPHECY

Contemporary usage has equated 'prophecy' with 'prediction' and a prophet with a forecaster of the future. But prediction is only one minor meaning of prophecy. In its deeper meaning, 'to prophesy' is to make manifest or reveal something that is hidden. Since the future is hidden, a particular interpretation of 'to prophesy' has come to be 'to predict' or reveal that which is to take place, which is but a special case of stripping away the veil that hides the hidden or covers the unknown. For there is much that is hidden and unknown beside the future.

One of the most important roles of prophecy is to describe and interpret archetypes. This role of prophecy also associates it with time and prediction because of the relation between archetypes and time. But before we can explore this, we must first find out what archetypes are.

It was Plato who first emphasized the importance of archetypes. As in the Allegory of the Cave, Plato would have that archetypes are patterns that throw those shadows which we call phenomena onto the wall of the cave which we call reality. But archetypes exist apart from the cave though we can know them only through the shadows they cast.

Next to emphasize the central importance of archetypes was C.G. Jung, picking up on Plato two thousand years later. Jung gave a name to the domain in which the archetypes exist--the collective unconscious. And archetypes are those templates imprinted in the collective unconscious that surface in the phenomenological world (Plato's Cave) as patterns of behavior. How the archetypes originated or got imprinted, neither Plato nor Jung say.

Employing the language of systems theory, we might say that archetypes are structures of 'pure information' which exist independently of any material or substantive embodiment. Like photons, archetypes are experienced only through their interaction with matter. They are like scripts which may be acted out on many different stages by many different actors in many different costumes, but whose theme is recognizable in each case. Those scripts that have played sufficiently often to become readily recognized even acquire names. An archetype may be of long or short duration, limited or universal, cyclical or irregular. Of particular interest in the present situation are the class of cyclical archetypes, those that repeat at regular intervals of time.

Prediction means foretelling the occurrence of an archetype. In the case of a cyclical archetype, prediction is simply a matter of the proper measurement of time. In the case of an irregular archetype the prediction of occurrence depends on recognition of other archetypes which may customarily precede it or depends on recognizing the archetype at its earliest stage of unfolding.

The archetypes of the Maya are cyclical archetypes and their onset may be predicted by scrutiny of the cycles and rhythms of their tzolkin and haab. The millennialists are at a disadvantage in this respect because the prophecies believed to be held by the Biblical Book of Apocalypse, contain no cycles or calculable dates. Thus the prediction of a second coming of Quetzalcoatl is a matter of calculation, while a prediction of the second coming of the Lamb of God is speculative and dependent on the nigh impossible task of correctly interpreting historic events in the terms of the archetypal pattern. I believe that one of the explanations for the energized response to the Harmonic Convergence is due to the definiteness possible in dating. There is a large pool of hapless humanity out there waiting for Scotty to beam them up. The Harmonic Convergences have stolen the Millennialists thunder and following by having a definite date for a definite occurrence. And Jose Arguelles proposal of a transformation to higher consciousness is more appealing and less threatening than the risky business of being snatched up a split second before the first nukes go off. I would say the score is Arguelles 1, Falwell 0, at this point. I would also say that neither of them are saying anything about either Quetzalcoatl or the Lamb. What they do seem to have in common, however, is the mystical number of the 144,000.

The archetype and its manifestations exist in two different worlds. The archetype itself dwells in the primordial (Eliade) timeless world of pure spirit (or pure information). Its manifestations are incarnated into time and matter, into the world of our common sense experience. It is not surprising that two languages have evolved for the description of archetypes. The archetype itself is most frequently described in the language of myth but sometimes in the language of poetry and art, its manifestations are described in the records of history, science, and psychology.

Finally, it should be noted that the temporal sequences which we attribute to causal relationships are but projections of the structure of an archetype. There is no imperative causality in the material world.

causal imperative

because of similar points

ONTOLOGY

ARCHTYPE.WP1 IBM DISK ESSAYS 07/27/87

See later version
of this
in FETHSERP.WP1

ON ARCHETYPES

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See
Psychological Perspectives
on Archetypes
in *Archetypes*
by Rossi
Jung's definition
of Archetype
See *Psyche*
Fall 1987 p. 309
or
Jung vol 9/1 p. 142
1950

Employing the language of systems theory, we might say that archetypes are structures of 'pure information' which manifest themselves in the physical/psychic world as patterns in space/time with sufficient frequency to gain recognition and be labeled.

AMPLIFICATION

An archetype is an informational pattern which is manifested in the physical world as a pattern in time. Archetypes may be thought of as "pure information" existing independently of any material or substantive embodiment. Like photons, archetypes are experienced by us only through their interaction with matter. They are like scripts which may be acted out on many different stages by many different actors in many different costumes. Whereas all physical activity may be the playing out of such scripts, only those actions or behaviors which have reoccurred sufficiently often have been recognized and labeled as archetypes. But even so, the recognition of an archetype requires a facility in abstracting, the ability to perceive that at a certain level the patterns in ^{the} diverse specifics are the same.

various Manifestations

The ontological questions related to the "independent existence of pure information" may be unresolvable, but it is helpful to model archetypes as patterns on an informational level whose projections onto the physical level manifest as the behavior of societies, individuals, animals, plants, planets, stars, galaxies, or even the universe itself. According to such a model the most common and ubiquitous archetypes are those whose projections we interpret as natural law. These archetypes are fundamental to all behavior. Other archetypes appear to affect more restricted domains of space and time and sometimes only those entities possessing a higher level of consciousness. Stones, animals, and men are subject to the archetype whose

ARCHETYPE

projection we call gravity, only humans seem to be involved in such archetypes as the "hero's journey".

The multiplicity and individuality of archetypes permits a resolution of the problem of determinism versus freedom which arises from the viewpoint of those on the physical level. Within the period of space and time occupied by the projection of an archetype events are frozen and if the archetype is recognized, the outcome may be predicted. Between archetypes, however, behavioral patterns may be 'uninformed' and freedom may exist. Such periods have been called "singular points", and contain the possibility of choice and branching.

THE ARCHETYPAL THEORY OF CHANGE

Change may be considered as consisting of deterministic 'strips' or patterns in time called archetypes. Archetypes are connected at their beginnings and ends to other archetypes by "breakpoints" or singular points of exit and entry. If we were to think of the deterministic strips as a railroad track along which the train of time runs between two places, then those sections of track between switches are archetypes. The length of an archetype may be short or long, finite or global. (An example of a global archetype is what we call a natural law). Some archetypes may exit into themselves or loop repeatedly. Those patterns which have repeated themselves often enough to become familiar have been given names.

It is useful to consider systems as consisting of an energy component and an informational component. The energy component is the source that effects motion and change. The informational component, on the other hand, is the source which determines the pattern of motion or change, i.e. the structure of the channel in which the energy flows. Archetypes are abstract informational components and are independent of the substance in which the pattern is preserved or stored. An archetype is thus a 'pure' informational system. Real systems are mixes of energy and information. At one end of the information/energy spectrum are the archetypes, at the other end is raw energy.

Every system is characterized by the 'food' it consumes as input, where 'food' is the structured energy which the system is capable of processing. Thus in a very general sense, like the food chain in the bio world, there exists an informational 'chain' or hierarchy of structured energy that is necessary for the existence of sophisticated systems. Some archetypes cannot come into existence until there are others upon which they can feed or some archetypes cannot be experienced until the incarnated creature reaches a certain level of development.

Some Notes on Buddhist Ontology

"The more we reference the self, the more the idea of the self arises"

This notion is related to the Persian Adage regarding the two types of truth: One type of truth is true only if reference to it is continually repeated, the other type of truth is SAT. It is also related to Whitehead's proposition that only that which recurs is available to awareness.

We must compare this also with the Taoist idea of reality and continuity (Chuang Tzu), and that repetition is a form of continuity.

If the Aksobyia operation of self-reference requires repetition to assure existence, then the ontological dyad is SAT and continual self-reference.

But self-reference is more like iteration than repetition. It is a snow ball, ever growing with each occurrence. The 'most real' is that which occurs most frequently.

Does it follow that anything that is not referenced becomes non-existent? If so, this explains the striving for immortality through fame. It accounts for the power of the historian. ["History is what I write it to be"--Joseph Stalin.] As reference becomes more infrequent, the referent passes into oblivion.

That which contains implicit cyclicity, e.g. atoms, the earth, perhaps the universe itself, [The universe will die unless it is cyclical.] possesses auto-self-reference and hence extended existence.

Rather than say all except SAT is illusion, it is better to say that all except SAT passes away as its repetition fades.

What remains when repetition ceases is SAT.

In getting off of the wheel, do we cease to exist or do we become SAT? SAT = NON-EXISTENCE ?

What then, if anything, is SAT? SUCHNESS

i.e. SAT

In the above we are clearly talking about awareness, but are we also talking about objective existence? To investigate this we must go into the triad, O, E, and P as given in the metaphor of the face on the cliff.

THE 5 DYANI BUDDHAS ARE SAT

DYAD

SAT and NOT SAT

CYCLICAL . . . IN TIME AND IN EXISTENCE

TO EXISTENCE MEANS TO BE IN TIME

I can remember what I dreamt last night
but in a dream I can never dream what
I had for lunch yesterday
EUT

SAT is bootstrap - self sustaining
requiring no repetitive feeding
of praise, worship, or information
(my entropy)
The Godhead is SAT
God must be praised

GROWTH
EVOLUTION/ADAPTATION
EMERGENCE/TRANSFORMATION
EXISTING-----TRUE
REALIZED-----VALID
ORGANIZED-----IMPORTANT
ENERGIZED-----INTERESTING

Those who attain the twin-mirror wisdom
of Vairacōna-Akōśhya need not supply
of information from the outside. They
become "bootstrap".

Where is the source of the excess that can be
given to all sentient beings

ENTERING A NEW WORLD

The meta-problem of life and beyond life is the problem of how to encounter a new world. Most religions focus on the aspects of this problem as it relates to the present world. We enter bio-life unfamiliar with both who we are and what the world is. We continually test the world and ourselves to find the limits. We ultimately decide on who we are and what the world is by the results of our testing and interactions. But this is a false answer. We have learned only about the relation between ourselves and the world, not who we are nor what the world is. Both we and the world are much more than the intersect of our interactions. But for the purposes of a lifetime we and the world are defined by these interactions.

The interface between ourselves and the world is located at the boundary of what is changeable through our will and efforts and what is not. This boundary evolves. It evolves from birth through childhood, through youth, maturity, and old age. It also evolves with the growth and decay of civilizations and cultures. Ultimately we are defined by what we can change in the world and by what we cannot change. Thus the prayer (ascribed to Paul Tillich):

Serenity Prayer

God grant me the serenity to accept things I cannot change, the courage to change things I can, and the wisdom to know the difference.

Niebuhr

cf analect of Kung Fu Tze *

is for help in reaching the central goal of life. [Provided we also pray for the wisdom to know what and how to change what we are able to change.] Thus from a transcendent perspective the real dichotomy is not that between ourselves and the world, but that between what cannot be changed and what can be changed. Or more generally between what has already been created and what can yet be created.

cf. Honganmyo (living in the effort) and Hongim myo (living in the cause)

It is from this perspective, not from hypothetical theologies, that Vajrayana Buddhism approaches the questions of life. It predicates that this world and our passage through it is but a special case of a process of changing worlds within changing worlds. The process of creation. The Tibetan Book of the Dead describes this process in terms of the way to enter and encounter new and unknown worlds. What we experience after leaving this world is, in process, similar to our experience in passing through this world.

conditioned
to
unconditioned
- Bennett

* Wisdom is "when you know a thing, recognize you know it;
when you do not know a thing, recognize that you do not know it."
Kung Fu Tze

for ONTOLOGY

Only interactions exist. Neither we nor the world exist independently. It is the interaction that creates both.

Thus the first creation is two-fold: Uairachana - Akisobyg

thus we exist at the interface of two realms of time: the past and the future; The actual and the potential

All existence occurs at an interface between two worlds
e.g. galaxies on the surface of "bubbles" ^{faces}
To find what I am, I must interact with many worlds
From the {interactions} I shall be able to discriminate what is I from not I. or to "defacetize" the interactions / scenes (face) to construct the quintessence. { } = set

MORE ON EXPLORATION

of UNKNOWN, RGN 7-93
UNKNOWN.WPN
December 9, 1993

DUMATCH1.WPW

DISK: EPIONTOLOGY

SOME ADVENT THOUGHTS

THERE SEEM TO BE TWO VARIETIES OF EXPLORATION: 1) THE SEARCH FOR THE COMMON, THE GENERAL, THE UBIQUITOUS, THE REPETITIVE, THE REPRODUCIBLE, AND THE UNIVERSAL; AND 2) THE SEARCH FOR THE INDIVIDUAL, THE UNIQUE, THE SPECIAL, THE RARE, THE MIRACULOUS, AND THE POSSIBLE.

We usually associate science with the first type of exploration. But science is also concerned with such matters as the varieties of organisms, rocks, stars, atoms, particles etc. But science collects "2)" in order to do "1)" that is, science's ultimate focus is on the unity underlying diversity.

Basically "2)" is a matter of knowledge while the construction of a framework to bind together either "1)" or "2)" requires imagination. Einstein said that imagination is more important than knowledge, and Feynman said that too much knowledge is paralyzing. Both of these statements infer that the construction of unifying frameworks is held to be the essence of science.

THE SACRED

But is it important to find a framework for binding together the unique? Is it not more important to savor the uniqueness than to try to classify it? Sometimes a scientist focusing on "2)" does so not to build a framework nor to find ultimate unity, but to relish uniqueness for its own sake. Here the work of Loren Eiseley comes to mind. But delving into uniqueness in the manner of Eiseley is not regarded as science. It departs from the purely objective and focuses on what happens to the observer in making the observation. Quantum mechanics tells us we cannot make an observation without affecting what is observed. Is it not also true that we cannot make an observation without affecting the observer? In this sense, in exploring the world we are recreating it, and not only the world, but we are recreating ourselves. I would conclude that exploration which focuses on savoring the unique is an act akin to what has been traditionally called worship. Science can become a spiritual path when we are willing to let our explorations change us.

Here we come upon the interface between exploration and creation and the interface between science and religion.

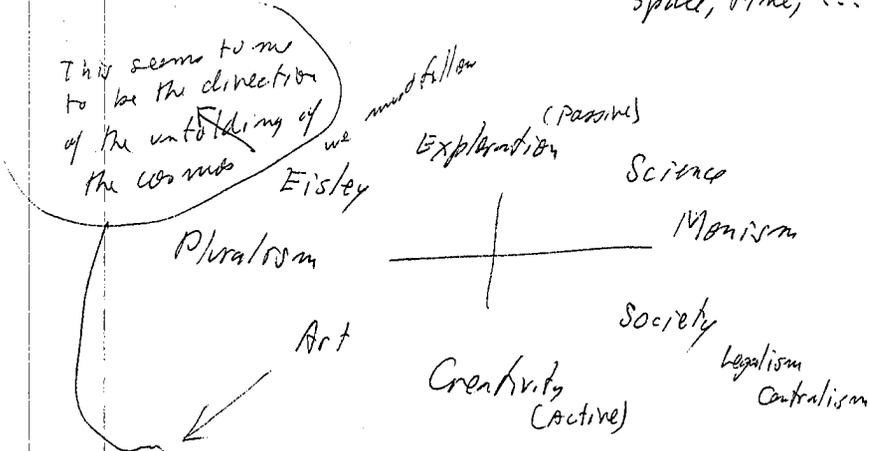
Framework building is for the purpose of grasping experience and compressing it into our limited informational processing capacities.

Heaven than Science or Religion

We have the dyad:

- o Search for general frameworks drive to homogenization
- usually monistic drang nach einheit
- e Search for the essence in uniqueness → 1
celebrate uniqueness
The place, the moment
Contemplate what is possible

We are missing something in ignoring the uniqueness in space, time, ...



The explore/create dyad is related to the Great Dialectic

E Pluribus Unum
 Wholes + Parts

EXPLORATION AND CREATION

TWO VARIETIES OF EXPLORATION:

- 1) The Search for the Common, the General, the Ubiquitous, the Repetitive, the Reproducible, and the Universal;
- 2) The Search for the Individual, the Unique, the Special, the Rare, the Miraculous, and the Possible.

We usually associate science with exploration and usually with type 1) exploration. But science is also concerned with such matters as the varieties of organisms, rocks, stars, atoms, particles etc. and in that sense is doing exploration of type 2). But science collects "2)" in order to do "1)" that is, science's ultimate focus is on the unity underlying diversity.

In order to develop a unity underlying diversity, we proceed by constructing an infrastructure or organizing schema. While this is essential for 1), it is also useful, but difficult for 2). Ofttimes 2) must remain a "miscellany file" for a lack of sufficient elements to suggest a schema. Two levels are involved: The collection level, and the organization level. The collection level gives us facts and data, the organization level gives us information and interpretation, i.e. what we call knowledge. An organization schema is derived from the data with the help of imagination, afterwards facts are interpreted with the help of the schema and are not solo, but become associated with interpretations. The schema becomes a 'ground' against which the figure of facts are perceived. Since the schema is a construct from our experience, it does not have the same validity as do its contents.

The construction of a schema requires imagination. Einstein said that imagination is more important than knowledge (data), and Feynman said that too much knowledge is paralyzing. Both of these statements infer that the construction of unifying frameworks is held to be the essence of scientific creativity. It is often asked how much of our knowledge is from the world and how much of it is projected on the world. A component of the answer to that question is that the data is from the world, while the schema is projected onto the world. Exploration is determining what is already there, creation is giving it an organizing framework.

Returning to 2), is it important or possible to find a framework for organizing the unique? Is it not more important to savor the uniqueness than to try to classify it? Sometimes a scientist focusing on "2)" does so not to build a framework nor to find ultimate unity, but to relish uniqueness for its own sake. Here the work of Loren Eiseley comes to mind. But delving into uniqueness in the manner of Eiseley is not regarded as science. It departs from the purely objective and focuses on what happens to the observer in making the observation. Quantum mechanics tells us we cannot make an observation without affecting what is observed. Is it not also true that we cannot make an observation without affecting the observer? In this sense, in exploring the world we are recreating it, and not only the world, but we are recreating ourselves. I would conclude that exploration which focuses on savoring the unique is an act akin to what has been traditionally called worship. Science can become a spiritual path when we are willing to let our exploration change us. The interface between exploring and creating, collecting and organizing, knowing and imagining, defining and evaluating, may be the same interface as that between recollecting and recognizing, between intellect and spirit.

INTO THE UNKNOWN

Explored territory remains terra incognita until the explorer returns and reports the results of the exploration. America was not discovered when Columbus landed in the Bahamas. It was discovered only when the report was taken back to Spain.

I have been voyaging for many years through unknown waters, viewing mysterious scapes of mind and spirit that continually lure me on and on. I had heard no reports of these regions before starting out, but they seem to have been visited before by some who were also lured on and on, and who never bothered to report back. I too have not bothered to report back, to effect a discovery. In a sense it seems wrong not to report back, but then why? These realms do exist and any who will sail out in a particular direction, will find them. Perhaps it is more important to give instructions how to reach these places than to attempt their description. Is this really not what the great teachers such as Guatama, Plato, and Jesus did, told how to find the realms, not what they contained.

and please

Science demands that experience be repeatable if it is to be accepted. ^{as a scientific} But once a domain becomes repeatable, its potential is cut off and it is frozen in the prison of actuality. Let us therefore be unscientific and only point the direction to go and permit each who go forth to find their own unlimited and unfrozen possibilities.

*The repeatable
The measurable
Sub set*

02/17/93

For some their proper task is to climb a mountain. For this they need guides and experts with climbing skills
For others their proper task is to learn all about the techniques needed for climbing mountains and to develop skills. ^{as guides.}
^{But then} For a third group, ^{with} the only need is to have a mountain pointed out to them -- it exists. They are then motivated to find it, learn how to climb, and finally to climb it.

This is like the old Chinese adage:
You can feed a person a fish, that is only one meal.
You can teach them how to fish, that is many meals.
But we must add:
You can tell them that such and such is food, and they have more available to them than just fish.

JULY 28, 1987

ON ENTERING AN UNKNOWN WORLD

(This essay was written about 3:30 a.m. on 7/6/87, one day before the beginning of the testimony of Lt. Colonel Oliver North before the IRAN-CONTRA committee.)

A PARADOX

It is an ontological truth that reality is selected or elected and becomes generally accepted through a tacit consensus. As the validity of this truth is internalized, two things happen: First, is the realization of the power that selection gives beyond merely 'effecting' reality, and the Second is that with the realization of this power comes the loss of desire to exercise it. Which is to say that awareness of the arbitrary nature of reality and the illusion of its absoluteness carries with it the question of to what purpose is any attempt to manipulate the outcome of events.

Those who are most secure in their belief in an absolute "out there" reality have the greatest desire to influence and direct its evolution, while those whose awareness questions absoluteness suspect that more meaningful endeavor lies elsewhere. Those who believe in a single absolute reality, whether its directing dynamic is some form of causal determinism, Divine Providence or blind chance, infer that a single reality has a single destiny. And while the reality itself has certainty, its destiny is uncertain and therein can be found a role and a meaning for human existence. But those who can image multiple realities infer multiple destinies and see little reason to bend a particular "experiment" to a particular outcome. Meaning comes in the comparing of all the multi-experiments. There is thus a trade-off between realizability and understanding. This means that the purpose, the "point" to it all, is selected by the one and same mind that selects reality--our own mind. Hence there is no one in charge except us, there is no one responsible except us. A fact whose assimilation will dissolve all hubris.

But herein we may glimpse the nature of the Creator's ground rules for the cosmos which He has created. He has delegated to his creatures both the freedom to select a theater and the freedom to write a script. If we are aware that there are many theaters we will tend to become critics rather than playwrights or actors. But has the role of critic also been delegated to us? The ground rules seem to be that any role within the grasp of our thought He will sanction for us. But whatever our level whatever our role, the most fundamental ground rule of all remains: our accountability is proportional to our awareness.

as first learned in the garden

EPISTEMOLOGICAL
ESSAYS

~~THE~~ EPISTEMOLOGY^{IES}
^{for}
SPACE EXPLORATION

Albert G. Wilson

*Where we had thought to travel outward,
We shall come to the center of our own existence.
And where we had thought to be alone,
We shall be with all the world.*

Joseph Campbell

ZEN AND THE ART OF SPACE EXPLORATION
A. G. Wilson
September 19, 1979

When I first proposed "Zen and the Art of Space Exploration" as a title for my remarks today, I was informed that it was not far enough out for this audience. It was explained that this is a really far out group which only touched base with earth from time to time. Nothing you could say would impress them as far out. This took me back somewhat. I had always prided myself on being among the farthest-out, and felt that I could say I was farther-out than thou to almost anyone.

However, I must confess that it is becoming more and more difficult to maintain one's home base on the distant horizons of far-outedness. I first encountered this challenge some 25 years ago when I was consulting with one of the studios on some space flight science fiction films. They told me this was their last space picture and they were going to give up since reality had outstripped imagination. Anything that they came up with for a scenario was either old stuff or would be outdated by the time the film was completed.

Reality has indeed outstripped imagination. We do not imagine and design the future we want, we just respond as best we can to the sweeping tides of change created by our past investments. Our culture lacks the compass of guiding images to successfully navigate the future. Herman Kahn has gone even further and maintains that reality has outstripped experience and we all living in worlds of illusion where our social, economic and political models and icons have little to do with physical reality. We have not assimilated the new realities surrounding us and continue to think in ways that are increasingly losing validity.

Illusion brings us to the subject of Zen, a strategy to enable us to escape from illusion, which is predicated on the proposition that all is illusion. Miyamoto Musashi, the great 17th century samurai Kendo master said, "In strategy it is important to see distant things as if they were close and to take a distant view of close things." This audience is well practiced in the first part of Musashi's aphorism, but today I would like to venture some remarks applicable to the second part. To take a distant view of close things is important to re-examine 'what every schoolboy knows as true'. Some of the most important advances in history have resulted from a purview of ideas everyone has accepted, for example, Einstein's re-examination of the basic Galilean concepts of relative motion.

Now every schoolboy knows what we mean by exploration, but let's take another look at it. We may start by trying to define 'exploration'. But this is not easy. Better to start by characterizing 'exploration'. The difference between definition and characterization is that the first is closed and complete, the second open and partial--an important discrimination to which we shall need to return to repeatedly. For example, in the exploration of space we may be asked 'what is life?'. We quickly realize that we cannot define life, we at best can only characterize it. Some characterizations of life are:

- o Life is capable of local decrease in entropy.
- o Life adheres to the principle of plenitude, i.e, replication, proliferation, environmental modification to its advantage.
- o Life locally reduces deterministic causalism (exercises freedom)
- o Life is capable of energy and information storage and transformation.
- o etc.

Also we may be asked, 'what is intelligence?' Some characterizations are:

- o Ability to read certain types of messages, to receive and decode certain types of signals, absorb certain levels of information.
- o Ability to generate messages and signals with a certain level of informational content.
- o Can make arrangements for modifying and freezing messages.
- o Possession of certain self-referential capabilities.
- o Ability to structure images.
- o Can create and exercise options.
- o etc.

Sometimes a 'trial definition' is used as a surrogate for a definition. The trial definition is composed of a subset taken from the list of characterizations.

attributes

*outstripped
imagination
of experience,
assimilation
of experience*

undopen

*i.e. listing is
attributes*

March 5, 1993

For several decades there have been afoot projects designed to search for extra-terrestrial intelligence. Most of these are predicated on the premise that what we are looking for is very much like us, derived from an anthropocentric notion of intelligence. The logic says, We belong to the class Intelligent, Those who belong to this class must therefore belong to the class human-like. This is of course nonsense. The class intelligent is bigger than the class humans and human-like. We cannot say that all that lies within the class intelligent must also lie within the class human-like.

In practice, the SETI (Search for Extraterrestrial Intelligence) people are not looking for alien intelligence, they are looking for alien radio engineers. Further, there are alien intelligences here on earth. These range from plant life to teenagers. We would do well to encounter and communicate with the local aliens before searching for extra-terrestrials.

What are some general clues to use in a search for extraterrestrial intelligence (as contrasted with such anthropocentric specifics as they will use the 21cm band).

- global intelligence = GOD*
- 1 Whereas the cosmos itself may be intelligent, we are looking for local intelligences. This means we are looking for local anomalies, departures from structures and processes that seem to be global, which we call the laws of nature. We are looking for the existence of local complexities (or simplicities) that appear to be at variance with natural or global phenomena. For example, we are looking for localities where the Second Law of Thermodynamics seems to be subverted. Or since the natural order appears to be built on the infrastructure of 1/f noise. Local departures from 1/f patterns either in the direction of simplicity or complexity could suggest the presence of local intelligence, something besides nature alone operating.
 - 1 Higher forms and complexity seem to occur along the interfaces of two regimes. On the surface of density discontinuities, along fault lines, along sea shores, wherever two diverse domains juxtapose. We should therefore expect anomalies such as life and intelligence to occur in the interstices.

THE EPISTEMOLOGY OF JUXTAPOSITION

Astronomers invented a device which they call a "blink microscope" which enables them to compare two plates of the same region of the sky taken at two different times. The two plates are adjusted so that the principal stars are in the same position on both photographs and when viewed alternatively in rapid succession show no change. However if there is an object either on one plate ^{and} not the other or which moves or changes in brightness from one plate to the other, the blink microscope immediately reveals the change. The device has been successful for studying variable stars, picking up comets, asteroids and high proper motion stars. In fact it can be used to detect many types of change. The basic idea is to put into juxtaposition two views of a phenomena bypassing their commonalities and revealing their differences.

I recall once seeing a poster which showed about 24 jet fighter planes all presented in the same orientation and appearing of identical size. All but two differed in some minor detail. The task was to find the two that were identical in all details. Here a blink microscope could be used by testing all 276 combinations until the pair showing no change showed up. It would, however, be useful also to have a "dual" of the blink microscope which would bypass all differences and reveal the commonalities.

Another example of the use of juxtaposition was during the Vietnam days when Simon and Garfinkle had a Christmas number called "The Seven O'clock News". In this, while Silent Night was played in the background, an announcer gave a typical evening news broadcast recounting the day's destruction and violence and ending with the body count score of the number of GI's and Viet Cong killed that day. This, to use a phrase of the times, blew people's minds. It generated a great deal of resentment on the part of many. We must never violate the compartments into which we have stored our various experiences.

Sir Isaac Newton, consciously or unconsciously, used the methodology of juxtaposition when he was working toward the law of universal gravitation. By putting two motions, that of a falling apple and a revolving moon, in juxtaposition and looking for the commonalities, he was able to cut through the morass of classical prejudice concerning the perfect domain of heaven with circular motion and the profane domain of earth with linear motion.

Perhaps the greatest value in the principle of juxtaposition is that it can create a liberating experience if we are able to endure ^{the} risk of disbelieving what we know. Will Rogers once said, "Our troubles don't come from what we don't know, they come from what we know that ain't so".

~~The methodology of juxtaposition~~
~~In all of the cases juxtaposition frequently demands that~~
 Juxtaposition involves placing a bridge where there may have been a fence.
 Traditionally we start with chalk circles i.e. fences
 the ritual of the

of William Irwin Thompson's books for exercises of juxtaposition

BRIDGING TWO WORLDS

A person becomes effective and interesting only when they have mastered two disciplines. Only when one's scope spans two worlds can he/she begin to utilize the power of juxtaposition. This is because germination and action occur only in the interstices, in the gaps between the tectonic plates. Those who live by the seashore, living exposed to two worlds, or living in a city such as Denver, in the interstice of mountains and plains, have a decided worldview advantage over those who live in the midlands. For one thing, they realize that alternatives are possible. For another they are led to a deeper parameterization of life than is possible in a mono-world. Those who possess two backgrounds discover the importance of complementarity (facetism) in the order of things.

The same is true of those professions that span two areas of learning. I think particularly of architecture where knowledge of both art and engineering are essential. It is not surprising that some of the most insightful concepts come from the experience of architects. If your profession is monolithic, then acquire a second, so that you may discover the secret power of the dialectic of juxtaposition. While philosophy pretends to span all disciplines, a philosopher is of no worth until he/she has mastered at least two disciplines in depth. It really matters little what the disciplines are, because the important arena that cannot exist in a one discipline mind is the interstice.

While any two disciplines can create an effective dialectic, such pairs as law and economics, history and politics, are far less powerful than those disciplines with greater contrast, painting and geology, music and psychology, physics and religion, mathematics and mysticism.

But I have to repeat that you can't satisfy an artistic challenge without taking into account the technological requirements of a project. Science and technology play as much a role in architecture as does art. The architect has to combine both disciplines.

I.M. Pei

THE ARCHITECT AS THERAPIST

Now I find it limiting for me to design buildings for social good only. Today I'm interested in architecture as art, which can also serve humans. People enjoy art at the level of the soul. I want to affect the physical environment in a way that takes humans beyond their everyday motions such as eating, sleeping, and worrying about money. At one level my goal is simply to give people pleasure in being in a space and walking around in it. But I also think architecture can reach a level where it influences people to want to do something more with their lives. That is the challenge that I find most interesting.

Ieoh Ming Pei

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 Teohuatican, 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.

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.

To get a glimpse of what's involved in this wholesale revamping of our concepts of physical reality, there's no better place to start than with the familiar parlor game of twenty questions.

A common form of the twenty-questions game involves a group of people who send one of their number out of the room to act as the questioner. The group then decides upon a target word and the banished party is asked to return. It is then the task of the questioner to identify the target word using at most twenty questions, such as "Is it alive?" or "Is it liquid?" The winner of the game is that questioner who identifies the target word using the smallest number of questions, under the stringent condition of having only one chance at actually guessing what the word is.

The physicist J. A. Wheeler likes to tell of the time he played an interesting variant of the game following a dinner party at the home of physicist Lothar Nordheirn. According to Wheeler, he was sent from the room for what seemed an inordinate length of time. Returning to the room, he saw a smile on everyone's face a sure sign that some sort of mischief was afoot. He then started his questioning with the customary sweeping queries: "Is it animal?" No. "Is it mineral?" No. "Is it alive?" No. But as the questioning went on, Wheeler noted that the answers were slower and slower in coming, with the person being questioned thinking for a long time before responding with a simple yes or no. Finally Wheeler felt he had narrowed the possibilities down to the point where he was ready to take the plunge. "Is the word 'cloud'?" he asked. At which point everyone broke out laughing and told him he was correct. It seemed that while he'd been out of the room the others had agreed that they would not select any word, but rather would let some word emerge as a consequence of Wheeler's questioning. The agreement was that the parties being questioned could respond with either a yes or a no, the only constraint being that whichever response they gave, they would have to have a definite word in mind that would be consistent with all the preceding responses. So the game was at least

as difficult for the others as it was for Wheeler!

The point Wheeler makes when recounting his twenty-questions story is that the game serves as a metaphor for two competing versions of what constitutes physical reality. Let's call them *objective and contextual reality*. Objective reality corresponds to the standard form of the game in which the word is preselected. This is just our old friend Newtonian reality again. The things (words) of this world exist and have real properties independent of human observers or measuring devices. Wheeler's game corresponds to a contextual reality, and involves a world that is literally created by the way in which it is probed by the observer. Just as there was no definite word but only potential words when Wheeler (the observer) entered the room, no stage is out there waiting for us to step forward and read our lines either. This situation calls to mind Gertrude Stein's withering assessment of Oakland: "There's no 'there' there." Actually, there are only potential "theres," and the stage of reality is constructed in real time as we proceed to act out our roles as observer/participants. So is Wheeler's word really there or isn't it? Is there an honest-to-god objective reality underlying the surface appearance of things? Or is it necessary to introduce some kind of observer as the creator/constructor of what we think of as being "real"? Shakespeare, Newton, and my barber say yes, the world really is "there"; the modern quantum physicist tells us maybe not. To see why, as well as to understand the many senses in which Wheeler's word and our world might not really be out there at all, we must set out on an all-too-brief tour of a few prominent landmarks in the wonderfully weird world of the quantum.

January 28, 1995

SPIRIT

THE WORLD OF TIME AND THE WORLD OF LOVE

If I take time for shopping, I have less time for lunch. If I spend time watching TV, I have less time for sleep. If I store furniture in the garage, I have less space for the shop. If I pave a patio, I have less space for the garden. Abundance here always creates scarcity there. It appears that both time and space have the properties of a "zero-sum-game". If A wins, then B loses. The world of matter and things is a highly competitive world, filled with the struggle for time, space, energy, and money.

On the other hand, if I love my oldest child, that enhances my ability to love my other children. The more love I give, the more I seem to have to give. And the more I give the more that is given back to me. Where there is beauty, more beauty is inspired and created. Abundance anywhere increases abundance elsewhere. Both Love and Beauty seem to have the properties of a "non-zero-sum-game". The more A has, the more B is able to have, and the more all can have. The world of the spirit functions so that to those who give more is given and those who retain lose what they would keep.

This difference between zero-sum in the world of time and space and non-zero-sum in the world of love and beauty shows that spiritual quantities exist outside and beyond time and space, and are not subject to the same processes that govern the physical world. We conclude that while that which exists in time and space must follow the physical laws of growth and decay, that which exists outside time, may never decay nor die.

The fact that we experience one set of rules for material things, and another for spiritual things, implies humans possess two kinds of existence. Our physical component obeying the laws of the world of space and time, our non-physical component obeying the laws of the spirit.

A basic question arises: ^{Into} From the closed world of matter, with zero-sum space and time, how do we ^{bring in} enter the eternal non-zero-sum world of Love and Beauty?

UPDATING PLATO'S SHADOWS ON THE
CAVE WALL

FROM
JOYONT1.WPW

JOYONT1.WS4

DISK:JOURNEYEAR00

12/03/87

DISK: EPIONTOLOGY

April 4, 1993

A few years ago I took a camping trip with my sons and grandson on Lake Powell on the Colorado River. We rented a boat and explored many of the inlets and side canyons, some not much wider than the boat, with sandstone cliffs stretching vertically upwards from the water for several hundred feet. One evening we pitched our camp on a large flat rock on the south shore of the lake. Across the lake we could see the red stone cliffs rising above the northern bank. As the sun dropped low in the sky, and the shadows lengthened, suddenly a huge face, strongly resembling that of an indian chief emerged from the cliff. The likeness was striking, the features were strong and stern, yet quite handsome, and constituted a powerful presence that dominated the entire lake. We stood transfixed and watched as the face slowly disappeared in the dissolving shadows of twilight. All the next day, no face was to be seen, although there were several interesting patterns appearing and disappearing on the cliff as the sun went across the sky. Then at evening as the shadows lengthened, the face re-emerged and again held us prisoners in its stern gaze until sunset.

There is more to the story, but for now I want to make a metaphorical point. What we call reality corresponds to the face seen on the cliff. There are three ingredients behind this appearance: the actual indentions and protuberances on the rock cliff; the source and direction of the light which illuminates the cliff; and a set of patterns in the observer's code book. The sunlight interacts with the rock shapes to create patterns of reflected light and shadow, these patterns are perceived by an observer who makes note of them only in the event they suggest something already familiar.

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 corresponds to what we shall term an "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?"

Mem yet a better word

O
E
P

To break out of a given reality, the reality of our culture, one must break with the conventional times and live by a different clock, move to a different place where the perspective is altered, and live in a different configuration including even what one eats. These are the prerequisites to unlearning and restructuring (perestroika). Only when these changes have been made will the light cast different shadows and a different facet of the world be revealed. *ontolog*

The Pagan world was not wrong, the Christian world was not wrong, the Scientific world is not wrong, all are but facets of an ontolog, each revealed through the adoption of a particular epistemology. We must not view the historical sequence as progress, rather we must view the different worldviews as different facets of the basic ontolog which underlies all of our realities. Progress is not in the sequence, nor in the exchange of one worldview for another, but lies in the accumulation and integration of the facets, from which we can begin to perceive the nature of the Ontolog itself.

PHILOSOPHICAL PREFACE TO SACRED SPACE AND SACRED TIME

There is the objective world out there and there is the subjective world within, and there is the bridge or relation between the two. Only the relation is graspable. The 'out there' and the 'in here' are given existence through the relation. An out there does not exist except in relation to a knower. But who is the knower? The knower is a set of experiences or relations with the out there and a set of self-referential experiences within. Subject and Object are the two ends of the relation. At the subjective end are attitudes and at the objective end are things. The mapping is not one to one. For one thing there can be many attitudes and there can be one attitude for many things. And there are some items which cannot definitely be assigned to either out there or in here. Is time out there or is it but a way we order things? Is space out there or is it but a way we organize things? Or do time and space themselves exist in both realms, being bridges and relations between knower and known?

If we consider time and space to be out there, then we can agree with the physicist that every instant of time and every point of space are the same. But if time and space are subjective, then experience says the quality of time and quality of space can vary. In the objective view quality of time and space is meaningless. In the subjective view we may experience quality as attributes of time and space. Thus any specialness of time or space is determined by the subjective, by the frame of mind, by attitude. Yet experience is that certain forms and certain sequences invoke certain feelings in us. Certain forms give (subjective) quality to space and certain sequences give quality to time. The forms are out there and the sequences involve the out there. What then are the connections between forms and space and between sequences and time? Should forms be equated to space and sequences to time? Some philosophers (e.g. Leibniz) have maintained space is but the gestalt property of forms. In this case space is purely out there and its qualities are transmitted to us through forms. The issue is then centered on the subjective qualities of forms and we may forget about space. Similarly with time. We need only be concerned with the subjective propertiew of sequences and forget about time and what it is. On the other hand, others have viewed space as having absolute independent existence. In this case we have the above questions concerning the relations between space and form to answer.

With this background, we leave the philosophical level and explore the feelings and attitudes invoked in us by our experience of forms and sequences.

The role of ^{TIME}thought in sentient systems:

Numerous examples have been given in the literature of the effects of positive or negative thoughts on the functioning and the structure of sentient systems. The spectrum of the effects of thought on living matter range from hypochondria through placebos to Christian Science. It is thus reasonable to surmise that those findings of physics and chemistry which have been found applicable to all physical systems, in the special case of sentient systems, must be supplemented with the effects on their functions played by the action of thought. In those sciences which focus on being 'objective' these subjective effects have naturally been either overlooked or ignored.

Model: All physical systems exist in three spatial dimensions. All physical systems also exist in the dimension of sequential time. Living systems, particularly those systems that experience subjective time, also exist in a second temporal dimension in which the 'velocity of the now' moves at variable speeds. Which is to say that if a system experiences a varying velocity of the 'now' (or the present), then that system also exists within a second temporal dimension, which can in distinction be called subjective time. Hence inanimate systems are one dimensional in time, and living, or at least sentient systems, exist in two temporal dimensions.

In the worldview of this model it becomes essential to consider sentient systems as not operating under the laws of ordinary 'objective' physics and chemistry, but under the laws of 'thought-modified' chemistry and physics. These laws are at present not formalized nor well understood. However, their differences from the laws of objective chemistry and physics are explicit in countless anecdotes and in the inferences of many experiments with bio-systems.

The linear time used in objective chemistry and physics ignores the interior of the cycles of which time is composed. It generally restricts itself merely to the counting of the number of cycles involved in phenomena. But if the interior details of the changes in temporal quality within a cycle play a role, as with circadian rhythms, for example, the bio-system must have access to these fluctuations of quality. This is achieved by altering the temporal resolving power, 'zooming' in or out, in effect slowing or speeding the rate of the flow of time with respect to the system. The total count of integral cycles, however, remains the same over a period of linear time as for ^{with} objective systems.

Whether it is proper to call the power to expand and contract time a second dimension of time is not the question. What is significant is that the ability to expand and contract time infers the existence of a second temporal dimension, just as the ability to introduce curvature between two fixed points on a line infers the existence of more than one spatial dimension. While expansion and contraction of time can be considered analogous to and mappable onto curvature, we may further take the view that expansion/contraction forces displacement into higher temporal dimensions in which are located the attributes which manifest themselves as the quality of time.

O N P A T T E R N S

A pattern is a distribution in space of a set of nodes. If viewed with low resolving power, the various linkages connecting the nodes are invisible, and even more invisible are the various traffics that flow along the linkages from node to node. If viewed with high resolving power, the pattern may not be perceived at all, and its existence demonstrated only by a step by step process, node by node.

The recognition of pattern is a fundamental cognitive operation, where the key word is 'recognition'. In order for a pattern--whether static or dynamic--to be recognized it must belong to the class of previously perceived and remembered patterns. But perception of a pattern does not automatically take place in response to the occurrence of the pattern. Only certain patterns are perceived or remembered. Which ones? Generally, in order to be remembered the pattern must either possess a simple structure or a high frequency of occurrence. That is to say that the greater the information content of the pattern the more repetitions are required for its perception and registration in memory.

How does a pattern cross over the threshold to perception and recognition? We tautologically say we recognize the familiar. What makes something familiar? One thing is frequency of occurrence. The more common and ubiquitous a pattern, the more likely we are to encounter it and the more readily become familiar with it. Certain simple patterns, linear patterns like triangles and squares and patterns possessing symmetries like circles are most apt to be recognized. Do we recognize them because they are simple or do we label them simple because they are so common and hence familiar?

Complex, subtle, and shimmering patterns are usually unperceived or ignored as useless. Only simple and universal patterns are accepted because these are the species of pattern that are accessible to all. These are the patterns recognized by the epistemology of science--which emphasizes repeatability and ubiquity. But the ease of perception or recognition of a pattern may have little to do with its basic importance or significance. Science may assume that the more ubiquitous the pattern, the more important, but we may take the occurrence of genius in human populations as a counter example. The deepest effects may result from complex shimmering patterns that only momentarily "tune in" but set up brief and powerful resonances with far reaching consequences. No statistical tests would convince us of their importance or even of their existence. These patterns lie beyond the ken of the scientific method.

Our mode of interacting with the world may be described as the search for, and the creation of, patterns. The patterns we discern in nature and the patterns we create constitute a multi-dimensional spectrum with a twilight zone wherein we are unsure which patterns we have perceived and are indigenous to the world and which patterns we have ourselves constructed and projected onto the world.

At one extreme there is a school that holds all patterns are of our own construction. The world is a great void capable of receiving and incorporating whatever we project on it. At the other extreme is the obverse school that holds the world is a great smorgasbord from which we select all patterns. It consists of myriads of patterns only a small subset of which we can recognize and assimilate. This school holds we create nothing only select what preexists.

In his *Accent on Form* L. L. Whyte regards pattern as the dynamic idea of the science of the future, just as number, space, time, atom, energy, organism, mind, unconscious mind, historical process and statistics have each in turn been the dynamic ideas of the past, serving as he says, "directly as instruments for understanding the universe. To understand anything, one must penetrate sufficiently deeply towards the ultimate pattern. Only a new scientific doctrine of structure and form, i.e. pattern, can suggest the crucial experiments which can lead to the solution of the master problems of matter, life and mind."

See Diagram by Keith Albarn and Jenny Miall Smith p137

davsont.w52

"Do not look upon the world as reality but as the message that is sent to us by reality." David Spangler

We think of our senses as the transmitters of an outer reality to our consciousness, but the senses are only the final link of a long process -- the face of the TV tube so to speak--consisting of transmitters, expanses of transmission by space, wire and cable, circuits antennae-, receivers--all of which codify the reality and send it on its way to us. How we interpret the message depends on what code book we possess. But there is also the danger of confusing what is on the face of the tube with reality. (The modern version of Plato's cave.)

ONORGNZ P51 DISK:IDEACONTROL October 31, 1990
02/04/87, 10/22/87, 01/03/90 (orig ONORGNZ.WS4)

*cf 2 dimensional
book*

Spread out on the table in front of me are many stacks of papers. Each stack has a slip of pink paper giving it some kind of label. The stacks are in no order, nor do they have any logical relation to each other. What the stacks represent are my personal "nodes of interest", i.e. notes, memos, clippings, drafts covering the miscellany of topics which I personally find interesting. But these nodes are not sharply defined, they are quite fuzzy and it is oftentimes difficult to decide whether a note, memo, etc should be assigned to a given stack, and which stack or whether a new stack and new label should be created.

As for linking the various stacks, i.e. creating a framework relating the stacks, the task appears to be overwhelming. I cannot visualize a matrix, of any number of dimensions for ordering these stacks, nor does a tree seem possible. The stacks are manifestations, incarnations, realizations, selections from a much vaster body called experience. They are my personal selection, representing one particular way to "slice" the universe. Thus they are a facet of experience. At this point what holds them together is not any frame work of my design, but structure they inherit from the body from which they have been extracted. So far I have not imposed a structure on the body of experience, I have only made a selection from it. But any links that I now create to join the stacks will be imposed by me, though they may also be implicit in the selection. What I have ended up with is a "net" of nodes (stacks) and here and there some links, with some stacks standing alone, "islands" unlinked to the "continental" net. This net is an interface between a knower (selector) and his body of experience.

Each knower creates his own net, and we spend our lives communicating, comparing, and contrasting our nets. What filters through the collective selection process being common to all (or most) nets is accepted as reality. We have voted on what is interesting, what is important, what is valid, what is true, and by agreement in effect have voted on what is. But in truth what we have done is selected a domain from the meet or intersection of individual interests. Reality is the structure created by this operation.

What if, instead of the intersect, we were to take the join or union of the individual nets. This would result in a net more closely approximating the "Body of Reality" from which all experience derives, each slice or net being a facet of the whole. But this process would overload the capacity of our individual informational channels. We have yet no methodology for taking the union and "defacetizing" it to get a glimpse of Reality.

NATURAL SELECTION AS META-LOGIC

Assumptions:

1. There exists a set of elements to be combined into systems.
2. There exists criteria which each system seeks to optimize.
3. There exists a process for the combining and testing of the resulting systems.
4. There exists a meta-process which selects which combinations to try and test.

The Species of Meta-processes:

1. Trial and error, random selection with retention of latest result.
2. Systematic execution and testing of all possible combinations with a final analysis and comparison.
3. Natural Selection.
4. Reason (Anticipation).

THE GENETIC ALGORITHM APPROACH [SN Nov 25, 1989, p346ff]

The Genetic Algorithm is a refined trial and error approach.

There exist in the set a total number of possible combinations and permutations. The object is to find a path through these to an optimum configuration by having to test a minimum number of combinations. There are two

levels of optimization involved, the first involves fit to the criteria each configuration is to be tested against, the second involves the path through the totality of combinations.

The genetic algorithm is an analogue of natural selection. The first optimization criteria is not known for natural selection, its existence is even denied. But if the analog is correct there must be something to be optimized in the bio-natural-selection process. The second optimization is implicit in the natural selection process itself. How optimum it is can only be surmized when alternative search algorithms which do not have to look through the total number of possibilities are known for comparison.

The point is made that mutation plays a minor role in the process of natural selection. It is only important when the path reaches some plateau. The inference of this is that every organic species is a dead end. The process is released from its cul de sac per a mutation or some intervention from a different level, i.e. mutation is a supplement which does not create new possible combinations but which allows already existing (but untried) combinations to be accessed.

What is of deeper interest here is natural selection as one of a number of possible path choosing algorithms. How does it compare with simple trial and error, with reason or logic (termed anticipation by Platt), and where does it fit in the determinist-random spectrum of chaos theory?

REMODELARIZATION

BACKFRNT.WP5 DISK: EPIONTOLOGY 08/06/89

REMODELARIZATION

RETHINKING

THE BACK FRONTIER

Crossing the frontier that lies within.

THE REFINER TANK

The exploration of the well known.

The re-examination of the obvious.

Will Rogers Quote

The search for what has already been found.

The gleaning of harvested fields.

The mining of well worked veins.

Examples:

- The Analemma
- Genesis, Chapter 1
- Kepler's Third Law
- The Universe in Natural Units*

In his review of the book Hierarchical Structures, Whyte, Wilson, Wilson (Eds), In Main Currents of Modern Thought vol 27, No. 1., Sept-Oct 1970, Ervin Laszlo says:

"I should like to emphasize a remarkable assertion by Gerard which could be the key word for the entire volume and for all others like it:

'Entitation is vastly more important than quantitation.' (p219) As he explains,

'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.' (pp219-220) What this volume has tried to accomplish, it seems to me, is to look at various aspects of the universe in terms of some new kind of entity, and in terms of how such units combine into new units and relate to one another. Given the complexity of organization in all realms of nature, prolonged inquiry is bound to come up with concepts describing or explaining how the units, which the investigator had the imagination to discern and the courage to follow up. combine with one another and yield superordinate units which, in their holistic coordinate functioning, exercise constraints on the subunits which are not readily (or perhaps not at all) explicable on their own level."

answer to the Quedahnt Chariot

DIONYSUS AND APOLLO

Mythic wisdom tells us that Dionysus is always escaping the forms that Apollo creates for him, which is to say the human spirit is always escaping the models that the intellect creates. Today our sciences, religions, institutions, have all imprisoned us, barring us from those loftier regions of mind and spirit which we know are attainable. We live today between two worlds: one that is dying, another trying to be born. We live at one of the singular points of history when what has been actualized forces release to new potential. The time has again come for the serpent of wisdom to shed its skin.

**In its prime each system is a
triumphant success,
in its decay it is an
obstructive nuisance.**

Alfred North Whitehead

However, there is much ambivalence, an unwillingness to seize the singular moment, a preference to hold to the status quo. We feel that so much of what we have achieved is too valuable to put at risk, which is the price to be paid for going forward. The situation is like that of solving Rubik's Cube. After much work we have succeeded in bringing one face of the cube to the same color. But to go on and solve the second, third, ... faces, we must destroy what we have achieved. We cannot save our result, the face of one color, we can only save the algorithms we have learned for achieving the result. Similarly, we cannot save any of our present models, theories, worldviews; we can only save what we have learned about how to process our experience to produce new models, theories, and worldviews.

The most difficult decision we are called to make at this time is: are we willing to question our religions, our constitutions, our customs, our sacred cows? Are we willing to pay the price of putting at risk our entire culture and its worldview in order to go to a better world? If not, there is also a price. We shall stagnate or even quite possibly become extinct.

IMPROVING OUR WORLD VIEW

We view the world through the filters of our scientific theories, our religious dogmas, and our cultural worldviews, and superimposed on these are the filters of our personal prejudices. We ask, is there some way to obtain an unfiltered view of the world, seeing it in its full richness free of the astigmatism of our conceptual constructs? For a totally concept-free view, the answer is no, since percepts and concepts are intimately interdependent and there can be no percepts without concepts. But there are some things we can do:

For one, we may select alternative filters and by comparing the results arrive at a somewhat less astigmatic view. On the subjective side, this approach requires a strong measure of skepticism in the accuracy of every filter and a strong measure of belief in the value of all filters. It also requires the maturity to live with the realization that all views are imperfect and the "true view" is a will-o-the-wisp. On the objective side, this approach requires the availability of alternative filters. These are usually in short supply because one of our cultural dogmas is that alternatives are disquieting and should therefore be suppressed. Hence back to the attic to dust off epicycles, phlogiston, caloric, ether, Bohr atoms, cosmological constants, tired photons, and steady state universes. Back to the photo album to look at Gnostics, Monophysites, Arians, Manicheans, Pelagians, and Cathars.

A second endeavor is to try to locate the hidden postulates and assumptions. After an assumption has been made for many years it becomes invisible and is accepted as belonging to the world itself. For example, Hubble took the doppler interpretation of red shifts as an assumption. Today it is dogma.

A third device is to go from linear causal patterns to multi-dimensional patterns. Whereas a missing link may derail a linear argument and block proof, even though pieces may be missing in a multi-dimensional pattern (as in a jig-saw puzzle) the picture may be discernable.

Fourth, look for broad patterns. Widen the field of view even if the resolving power must be reduced. Exceptions should serve to refine a generalization, not to preclude making it.

Fifth, employ the scan, select, zoom techniques of exploration. Technique 1) Select a field, scan it, select a portion of the field, zoom in, iterate. This is known as the reductionist technique. Technique 2) Select a field, scan it, select two (or more) portions, compare their zooms. This is known as the juxtaposition technique. Technique 3) Select a

POWER AND REPETITION

Apart from recurrence, knowledge would be impossible; for nothing could be referred to our past experience.
Only that which reoccurs is marked in human awareness.

Whitehead

Reality is a function of continuity. Repetition is continuity in its discrete form. Therefore induction, rather than deduction, is the basis of conviction and acceptance, the basis for what is valid and real. The more common the experience, the more often repeated, the more real. An experience must occur twice even to be recognized, that is there is no basis for recognition unless there has been at least one previous occurrence. It is therefore doubtful that a **unique** experience can be recognized, even though it is remembered in case of future reoccurrence. This means that a recorded unique event must have occurred at least twice. (cf Pythagoras' assertion that neither ordinal one nor cardinal one exist.) All so-called miracles have occurred more than once. The Resurrection would not have been noticed had it not occurred at least once before. (Perhaps this is the reason for the resurrection of Lazarus a few days before the resurrection of Jesus.)

It is important to note that all of science validates by the canon of repeatability. If the experiment or observation cannot be repeated, it is rejected.

and reproducibility

and measurability

Uniform Sameness is philosophically *indistinguishable from* equivalent to non-existence.

Eddington

what becomes ubiquitous becomes invisible

However, there is the other end of the spectrum, as pointed out by Eddington. When repetition becomes so frequent as to effect sameness, then the experience again escapes recognition.

We ~~do not~~ ^{never} hear the music of the spheres because ^{we hear it} it is ~~present~~ present all the time.

Hermes Trismegistus

This limit, together with the necessity of occurrence at least twice, bounds the domain of human recognition and hence what we experience as reality.

The argument was not convincing, but its repetition was. ✗

Li Kiang

The more common, the more often repeated, the more real.

*but the power of some event lies in their rarity
repetition reduces their power Persian Adage
(entropy)*

esp power for transformation

The Unique ~ change of levels

The repetition ~ stasis on 1 level

*Its not possible unless it happens more than once.
Eddington effect -> invisibility & MW
Weber - Fochman Law*

see	ONTAPH 1 . WP5	EPIONTOLOGY	03/02/90
	EDWHITE 1 . P51	"	12/12/91
	ONPATERN . P51	"	10/22/87
	PATERNO3 . P51	"	11/13/92
	ONTULOGA WPW		03/11/93

ON PERCEPTION

We have pushed back the boundaries of the sensory world by augmenting and extending our senses with instruments such as telescopes and microscopes, IR and UV detectors, etc. We have cognitively stumbled into other aspects of the world by indirection and now incorporate magnetic and other phenomena in our familiar cognitive maps of the world. Is it not worthwhile to explore whether we can also extend the boundaries of our world by noting the fundamental limits and constraints of our perceptions?

On a fundamental level, perception depends on being between the Eddington and Whitehead limits. That is an event must be different enough from the ground to stand out (sufficient acuity) and common enough (or repeated enough) to be noted (remembered). Perception may also depend on a transcendental attribute which we call recognition, which may have nothing to do with either intensity or recurrence. Thus our world lies between the extremes of endless sameness and total randomness, between maximum entropy and complexity transcending our capacities.

Familiarity, the offspring of recurrence, defines our zone of credibility, and distance from the familiar measures what we call strangeness. But uniqueness is not the same as strangeness. Hynek constructed a "strangeness-credibility diagram" for plotting UFO observations.

The followint outline is taken from CODEX2.WP5 ON DISK:IDEACONTROL

A. THE SPECIES OF BLINDNESS (NON-PERCEPTION)*

1. The Eddington Lemma: Endless Sameness
is the same as non-existence, or rather
the same as non-perceptability.
 - a. Frog Boiling, Acuity too low
2. The Whitehead Lemma: Recurrence is
essential to retention and incorporation.
Non repetitive or unique events must be
extremely strange or intense to be perceived.
3. We perceive only what we expect, what is
congruent with our belief system.
4. We incorporate only what is signficated.
Signification is needed to detect the signal
from the noise. Only the signficated is signal.
5. Not experienced and inexperience.
 - a. Hasn't crossed my desk
 - b. Haven't gotten to it
6. Perceived but Ignored because
 - a. Can't understand it
 - b. Counter to belief system
 - c. Does not fit the schema
 - d. Is threatening therefore opposed
 - e. Under signficated

ONTOLOGY - EXPERIENCE

The primary will be taken as experience or sets of experience.

First is the question: What are the modules of experience?

History is a symbolization of a module of experience

What constitutes a single experience? This question, the module of experience, underlies such notions as causality, determinism, free will, archetypes, etc. Continuity enters into the question of modularity. Perhaps all of life is but one experience, or perhaps the module depends on a certain temporal resolving power of a subjective nature. [cf. the moon illusion]

Second is the question: What are the types or categories of experience?

A. J. Souza

We recognize sensory experience, thought, feeling, intuition. Each of these categories has many sub species. Sensory experience is sight, hearing, taste, smell, and touch. There is also the experience of inertia, which may be considered more as cellular than sense organ in origin. Mental experiences of thought and feelings may be sense related, but they also may be independent or autonomous, it is not certain. There are many species of feelings--esthetic, altruistic, ecstatic and many species of emotion-- anxiety, fear, anger, etc. And intuition is possibly a complex interplay of sensory and mental functions, or may also be independent.

*Sense
2nd hand
Rec. Page
Instinct
of Giffman*

Third is the question: In what ways do we organize experience?

What frameworks do we use? What selection criteria for inclusion or exclusion of experience do we use?

contained

- What influence does frequency of commonness of experiences have?*
- What influence does intensity of experience have?*
- What are the effects of communication and communicability of experience on its retention or preservation in an organization?*
- What is remembered, recorded and why?*
- What is not remembered nor recorded and why?*
- What effect does a NV have on recording and evaluation of experience?*

What experience can our hardware "run"?

For change to be perceived there must be two ingredients: First a ground or unchanging component, and second a memory or record of previous states. Previous states (i.e. the past) must exist in some sense for the awareness of change to be possible. Existence in record or memory may be a different sort of existence than the existence of the present but it must nonetheless be. There must also be some 'device' or 'agent' which compares or contrasts the record with the present state. (This is beginning to look like the cybernetic is-ought-error triad.) The present-past-difference triad not only is necessary for awareness without it, there is no existence. When difference goes to zero, existence ceases.

Elsewhere we have noted that continuity, reference, non-sameness, and recurrence are essential for existence. (The contributions of Chang Tzu, Aksobya, Eddington, and Whitehead respectively.) While both fast and slow change are required for there to be any change. (The contributions of Herakleidos and Parmenides, respectively.)

Herakleidos noted that everything is changing, change is the fundamental essence of all existence, "You can never step into the same river twice." Parmenides recognized the need for an unchanging infrastructure for there to be existence. "As it was in the beginning it is now and forever shall be." Today we would say that there must be both the changing and the relatively unchanging or that there must be a slow component and a fast component to existence.

Fast and slow change lead to the notion of slow associated with a framework (ground) such as space and fast being associated with elements such as physical objects (figure) e.g. photons, atoms, etc. We thus have the basic dyad of statistical mechanics, the box or cell and the particle it contains. From various statistics we can derive many of the laws of physics.

Memory is a special case of reference. There are other kinds of reference. But for an entity to exist it must possess at least one reference. Nor can a reference alone exist. Reference and referent either both be or neither exist. And what about the agent who sustains existence by placing in juxtaposition referent and reference? The agent has been called the Adi Buddha or by the Tibetans, Dorje Chang. Dorje Chang keeps a record book of all which is chosen to exist. But since referents perish, their references would also cease to exist unless there were more than one, and these must be cross referenced. This need has been noted in Western philosophy with our existence assured by our being referenced in the mind of God.

To exist outside of time \Rightarrow a reference other than memory
 Memory is time's reference

If \nexists memory or record in time, the referent can no longer exist in time.

Our existence in the present is different. It is self-referenced
 It does not depend on memory (a does it?)

multi-referenced?

LEV-ONT

inequality, $a \leq b$. Among the bounds so far discovered and believed to be universal are:

- The Einstein Bound $v < c$
- The Heisenberg Bound $E.T \geq h$
- The Schwarzschild Bound $M/R \leq c^2/G$
- The Bell Inequality

These bounds govern what is possible or not possible in the cosmos.

It is difficult at this point to causally order the fundamental concepts. Some items are independent, some are the results of others. What belongs to SAT, to primary dynamic principles, to resulting forms and structures remains to be discriminated. This study must be done by "successive approximations".

HIERARCHIES

Hierarchies consist of sets of levels where levels are discrete categories usually separated by existential voids or gaps. Levels may usually be indexed according to values of a single parameter, such as scale. Several classes of hierarchies may be distinguished:

REGRESSIONS

Regressions are hierarchies characterized by inclusion or containment. Commonly a regression is a set of systems within systems within systems,... say in the manner of nested Russian dolls. Usually the members of a regression at all levels are similar in that they differ only with respect to the value of a single parameter such as size. Fractals are an example of a regression.

MODULAR HIERARCHIES

Whenever a hierarchy is a containment hierarchy in which the levels are not similar, it is usually referred to as a modular hierarchy. An example is the observed astronomical universe consisting of stars contained in galaxies contained in clusters contained in super clusters,..

MODULATION

Modulation is a type of hierarchy in which a set of similar operations act between the levels. The most common form is a two level system in which the amplitude or frequency of one wave is modulated i.e. modified according to the properties of second wave. This process could be carried on beyond two levels.

STABILITY

Configurations equipped to resist the dialectics of change; perhaps in some sense possessing orthogonality to most dialectic vectors. Or possessing internal clocks that operate much more slowly than the clocks of "proper time". [Orthogonal to prevalent zeitgebers?]

June 20, 1997

Some of the concepts that appear to be basically involved in exploring the structure of the world:

SYMMETRY

As defined by Herman Weyl: A structure that remains unchanged after the performance of a certain operation is symmetric with respect to that operation. Symmetry is thus associated with invariance, and consequently with conservation principles. It refers to an attribute that is changeless within change. [Therefore ~ SAT, the eternal. Symmetry provides a clue to the extra-temporal or is a bridge between the temporal and extra-temporal] cf 1995#65, re "perfect symmetry"

DIALECTICS

These are the forces of change, oftentimes being adversarial pairs obeying Newton's Third Law, "to every force there is an equal and opposite reaction". At other times dialectical forces may be mutually supportive in which case they are temporally multiplexed thus avoiding Newton's third law. In the case of opposing forces novelty occurs at the interface, in the case of supportive forces, the action is in effect an "engine" producing some form of change.

ORTHOGONALITY

Independence and interdependence are determined by orthogonality. Orthogonal forces or parameters operate independently of one another. However, orthogonal instruments must at some time and place intersect. Non-orthogonal parameters, on the other hand, are interdependent with a modification in one parameter effecting modifications in other parameters. The orthogonals intersect one another; the non-orthogonals modify one another. Orthogonal parameters are parameters that cannot be expressed in terms of one another. Orthogonality is the essence of dimensionality. Examples are the x,y,z dimensions of geometric space and the physicists' Mass, Extension, and Time. Parallelism is a special case of non-orthogonality in which there is independence without intersection. [quadric diagram: orthogonal:non-orthogonal::intersect:modify] [also skew instruments]; [zones of immunity to interaction, e.g. light cones]

LIMITS

Infinity is an illusion. In nature bounds are placed on all parameters. Bounds are discriminated from limits in that bounds are contextual while limits are internal. Bounds and limits take one of two forms: Cyclical or wall-like, [Kreisgrenze oder Mauergrenze]. The conditions of open or closed refer to the existence of intrinsic or self-imposed limits within systems. Open and closed have no meaning with respect to bounds which are SAT. A bound or limit is usually expressed mathematically by an

ORTHOGONALITY

$$\frac{y}{x} = \tan \theta$$

$$\theta = \tan^{-1} \frac{y}{x}$$

$$0 \leftarrow \frac{y}{x} \rightarrow \infty, 0 \leftarrow \tan \theta \rightarrow \infty, 0 \leq \theta \rightarrow 90^\circ \quad \theta_0 \leq \frac{\pi}{2}$$

99/09/13

SEMI-ORTHOGONALITY

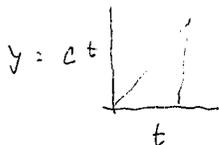
$$\frac{y}{t} = v = \tan \psi$$

$$\psi = \tan^{-1} \frac{y}{t}$$

$$0 \leftarrow \frac{y}{t} \rightarrow c$$

$$\psi_0 = \tan^{-1} c$$

$$cf \quad \psi_0 \text{ and } \theta_0 = \frac{\pi}{2}$$



$$\text{Another } y \text{ is } \frac{GM}{c^2}$$

OBJECTIVE AND CONTEXTUAL REALITY

To get a glimpse of what's involved in this wholesale revamping of our concepts of physical reality, there's no better place to start than with the familiar parlor game of twenty questions.

A common form of the twenty-questions game involves a group of people who send one of their number out of the room to act as the questioner. The group then decides upon a target word and the banished party is asked to return. It is then the task of the questioner to identify the target word using at most twenty questions, such as "Is it alive?" or "Is it liquid?" The winner of the game is that questioner who identifies the target word using the smallest number of questions, under the stringent condition of having only one chance at actually guessing what the word is.

The physicist J. A. Wheeler likes to tell of the time he played an interesting variant of the game following a dinner party at the home of physicist Lothar Nordheim. According to Wheeler, he was sent from the room for what seemed an inordinate length of time. Returning to the room, he saw a smile on everyone's face a sure sign that some sort of mischief was afoot. He then started his questioning with the customary sweeping queries: "Is it animal?" No. "Is it mineral?" No. "Is it alive?" No. But as the questioning went on, Wheeler noted that the answers were slower and slower in coming, with the person being questioned thinking for a long time before responding with a simple yes or no. Finally Wheeler felt he had narrowed the possibilities down to the point where he was ready to take the plunge. "Is the word 'cloud'?" he asked. At which point everyone broke out laughing and told him he was correct. It seemed that while he'd been out of the room the others had agreed that they would not select any word, but rather would let some word emerge as a consequence of Wheeler's questioning. The agreement was that the parties being questioned could respond with either a yes or a no, the only constraint being that whichever response they gave, they would have to have a definite word in mind that would be consistent with all the preceding responses. So the game was at least

as difficult for the others as it was for Wheeler!

The point Wheeler makes when recounting his twenty-questions story is that the game serves as a metaphor for two competing versions of what constitutes physical reality. Let's call them *objective and contextual reality*. Objective reality corresponds to the standard form of the game in which the word is preselected. This is just our old friend Newtonian reality again. The things (words) of this world exist and have real properties independent of human observers or measuring devices. Wheeler's game corresponds to a contextual reality, and involves a world that is literally created by the way in which it is probed by the observer. Just as there was no definite word but only potential words when Wheeler (the observer) entered the room, no stage is out there waiting for us to step forward and read our lines either. This situation calls to mind Gertrude Stein's withering assessment of Oakland: "There's no 'there' there." Actually, there are only potential "theres," and the stage of reality is constructed in real time as we proceed to act out our roles as observer/participants. So is Wheeler's word really there or isn't it? Is there an honest-to-god objective reality underlying the surface appearance of things! Or is it necessary to introduce some kind of observer as the creator/constructor of what we think of as being "real"? Shakespeare, Newton, and my barber say yes, the world really is "there"; the modern quantum physicist tells us maybe not. To see why, as well as to understand the many senses in which Wheeler's word and our world might not really be out there at all, we must set out on an all-too-brief tour of a few prominent landmarks in the wonderfully weird world of the quantum.

MORE ONTOLOGIES

In comparing two types of the game "20 Questions", Wheeler proposes two kinds of reality which he labels 'OBJECTIVE' and 'CONTEXTUAL'. Objective reality is plain old fashion Newtonian reality which postulates an 'absolute' world out there that exists independently of being observed by ourselves or any other conscious creature. This is the common sense as well as the traditional scientific view of reality. It corresponds metaphorically to the classical form of the 20 question game. Contextual reality, on the other hand, postulates a critical role for the observer. The observer creates reality through the process of observation. This is a counter intuitive and quantum mechanical view of reality. It corresponds metaphorically to the modified game of 20 questions. (For a description of these games see Casti, Paradigms Lost p416, or Scraps 1995#27). The difference: A Newtonian objective reality is to be explored; a Wheeler contextual reality is to be created.

Whenever given two systems that appear contradictory in the framework of Aristotelean logic, my rule is: assume both are correct, put them in juxtaposition, and find a meta-system in which both may be consistently imbedded or coherently subsumed.

In this case one result of applying this process is an ontology, which may be called 'SELECTION' reality. Begin by noting that in the game of 20 questions there exists in advance an available set of words from which the target word is 1) chosen by the group in the objective case or 2) evolved by the group plus the questioner in the contextual case. In both cases a prior reality, namely a set of candidate words, pre-exists. It is only the processes by which the selection takes place that differ. It follows that both OBJECTIVE and CONTEXTUAL realities are special cases of a SELECTION reality.

[Throwing out the 20 question metaphor there may still be a true Wheeler creation type ontology. But within the framework of the metaphor the Wheeler ontology is a type of selection ontology.]

How best to describe a SELECTION ontology?

One way is to look upon reality as a two dimensional terrain with human experience taking a one dimensional path through that terrain: the path being the portion of the map humans call reality. (Or with more sophistication, think of Reality as an n dimensional hyperspace with human experience selecting an (n-r) sub-space reality, where $r < n$.) In this ontology are we creating or are we exploring? Neither. We are not creating because what we encounter already exists. Nor are we exploring because we are limited to a one-dimensional path, and exploring mandates freedom to survey every portion of the terrain. What we are doing is selecting.

May 94

COGFEST2.WPD

The metaphoric wisdom of myth tells us that Dionysus is always escaping the forms that Apollo is building for him. One way of saying that the human spirit refuses to be contained in the prisons created by its intellect. The history of science illustrates this well. The usual perception of science is Apollonian. Scientists are ever seeking to bring order to experience, building models to organize the observations, constructing theories to explain how the world works. All the worship of Apollo. But after a time it becomes tiresome to be shackled to explanations which keep repeating "This is nothing but...", "nothing more than..." whatever. The Dionysian feelings begin to stir: is there more in this than we have thought?; aren't we overlooking some possibility?; isn't there some alternative way of looking at this? All Dionysian urges for alternatives, for liberating the imagination, for reopening the door to greater potential. All scientists are apollonians, but the great scientists are also dionsysians. The work of apollonian scientists, most of us, is the masonry of adding brick upon brick to existing edifices. The dionysian scientists, Copernicus, Kepler, Einstein, to name some of the more prominent, are the architects whose work leads to more coherent and comprehensive structures. My thesis on the occasion of the 100th anniversary of the founding of the Lowell Observatory is that Percival Lowell belonged to the company of important dionysians and that the Lowell Observatory, which he founded, was an outstanding temple of Dionysus.

FOUR GATES TO UNDERSTANDING THE COSMOS

GATE I THE LAWS OF SYMMETRY

These are the laws that establish and maintain equilibrium and balance
These are the unchanging Parmenidean Principles
These are conservation principles such as the conservation of energy.
movement to equilibrium

GATE II THE LAWS OF AGGREGATION

These are the laws governing modules and their structures
The species of organizations, and principles of organizing
These are modularization principles such as hierarchy
movement to optimizations

GATE III THE LAWS OF CHANGE

These are the laws governing growth and decay, evolution and emergence
These are such principles as the maximization of diversity and openness
These are diachronic principles such as the second law of thermodynamics
movement to limits

GATE IV THE DIALECTICAL LAWS

These are the laws that govern the interactions between the other three classes
These are species of bridges between time and space
These are oscillatory principles such as departure and return
movement to dis-equilibrate

FIVE FUNDAMENTAL WORLD VIEWS

- 1) Nature is an enemy to be subdued
 - The Challenge: to control, to win
 - The Elites: rulers and warriors
 - The Attitudes: arrogance and fear
 - The Virtues: persistence and courage
 - Style of Thinking: black/white, us/them
 - The Diachronic/Synchronic Index is 2

- 2) Nature is a Bank Account for making deposits and withdrawals
 - The Challenge: Sustainment
 - The Elites: providers of sustenance and healing
 - The Attitudes are protection and balance
 - The virtues are equity and justice
 - Style of Thinking: associative, literal
 - The Diachronic/Synchronic Index is 4

- 3) Nature is an exemplar for creativity
 - The Challenge: Innovation
 - The Elites: artists and inventors
 - The Attitudes: perfection and pride
 - The Virtues: imagination and originality
 - Style of Thinking: poetic, amorphous
 - The Diachronic/Synchronic Index is 6

- 4) Nature is a mystery to be explored
 - The Challenge: Understanding
 - The Elites: scientists and philosophers
 - The Attitudes: curiosity and wonder
 - The Virtues: persistence and openness
 - Style of Thinking: logical, abstract
 - The Diachronic/Synchronic Index is 8

- 5) Nature is a symphony to be heard
 - The Challenge: Transcendence
 - The Elites: no elites
 - The Attitudes: peace and joy
 - The Virtues: inclusiveness and compassion
 - Style of Thinking: parables, metaphors
 - The Diachronic/Synchronic Index is 10

REDUCTIONISM VS. TEMPLATISM

For the past three centuries reductionism has been the philosophical basis of Western science. Reductionism consists, not of *post hoc ergo propter hoc* causality, but of bottom up causality. That is the cause and explanation of phenomena are to be sought and found in their component sub-parts. Biological phenomena are to be explained in terms of chemistry, chemical phenomena, in turn in terms of physics. And each level of physical phenomena to be explained in terms of components. Molecules in terms of atoms, atoms in terms of electrons and baryons, these in terms of quarks, It is not certain how far this sequence continuous, whether it ever ends.

As an alternative to reductionism it is proposed that there exists a 'template' that manifests itself in the same abstract form, but in different observables, at each level of the ontological scala: sub-atomic, atomic, molecular, cellular,... This view would hold that the sub-systems do not determine the properties of a system, but that both the sub-systems and the system derive their properties by being isomorphic at some level of abstraction to a universal template. This template would be a sort of "code book" that is contained in all material systems, from quarks to Hubble universes. Humans being part of the picture would also possess this same code book. This would explain why we find the universe comprehensible, let alone experiencable.

Several instances point to the possible validity of a template type hypothesis. There is, for example, the fact that von Neumann's construction of the essentials of reproduction in cellular automata are isomorphic to those found in the components of bio-reproduction. (von Neumann made his construction a decade before the work of Watson and Crick.) There is also a basic eight-foldedness that occurs on many levels, from sub-atomic symmetry groups through the periodic table of elements, on up to stellar and galactic types. (One could also throw in diatonic musical scales and the I Ching.)

One of the criticisms of reductionism has been its inability to account for emergence. Can templatism do any better? Speculatively, we might answer, yes. Assuming that a portion of the template includes the algorithms for self organization.

As far as determinism goes, templatism would appear to be less deterministic than reductionism. Templatism has both deterministic and open ended aspects. The interface may vary with each level of manifestation.

Templatism would have less demand on temporal sequences of evolution or emergence. Development could be occurring simultaneously on several levels, it not being required that all the bricks be available before construction of the building

begins. The universal code book would assure in advance that the bricks and the building would merge in a totally compatible way.

Both von Bertalanfy's General Systems Theory and J.G. Bennett's Systematics are predicated on some form of templatism. The search for commonalities in systems is inspired by the idea that at some level there exists a single Platonic archetype that is manifested in each system. The systems may be quite diverse, but on a certain level of abstraction, they are constructed around the same archetype or template. Even the importance of the concept of equivalence in human thought processes stems from the experience of the templated structure of the universe.

The most common realization of templatism is in mathematics itself. That the same equations are so broadly applicable to so many systems infers that these equations are the abstract templates on which multitudes of systems are constructed. The Pythagorean assertion that number is the basis of all extends these mathematical facts to the level of metaphysics.

At some point it becomes necessary to formalize the role of time. We may think of a template as a pattern, a process or both. Usually the idea of a template is static, a spatial description of the organization of a system. But it may also be a pattern in space-time, in which case it includes a dynamic. Or it may be a purely temporal pattern. The same three categories, spatial, temporal, or both, are also present in the concept of archetype. Indeed, the importance of Templatism may be but a reassertion of the fundamental role of archetypes.

In our experience of the world matter and information are never separate. Indeed, they may be inseparable. But until the differences in the kind of existence which matter and information possess can be clarified, we may postulate pure information. That is a separate level for the existence of archetypes-templates. But pure information or not, archetypes and templates require a multilevel world: one level on which archetypes-templates exist and another level for their manifestations. Modern science avoids such a view, choosing to restrict all causes to a single level. Since causality is also viewed as locked into temporal sequences, this approach forces explanations to conform to a linear view of time. The archetype-template view liberates causality and explanations from narrow linearity. It allows both determinism and entelechy.

TEMPLATONICS

INTRODUCTION

Basically the subject of causality is about linkages, with the usual notion being that causality is about a particular kind of linkage, viz., about uni-directional linkages. [cf graph theory] But the usual notion of a linkage is a linear one. So contemporary views of causality are restrictive in being both linear and uni-directional. These restrictions limit applications to infrastructures or grounds that are either chain-like or tree-like. Linear, uni-directional linkages are not readily applicable to more complex networks or to interactions between network and ground (vertical interactions). This has resulted in a third restriction, all causalities must be horizontal or one level. [These notions may be traced to John Locke's three restrictions to critical thinking or modeling: What is earlier is primary, what is smaller is primary, and what is visible is primary. id est, causality is from past to future, from small to large (reductionism), and does not need to consider the infrastructure, only the horizontal context.]

Computer simulation is revealing the severe limitation of these 18th century views which have been absorbed into modern thinking. Parallel computing allows computations to involve several evolving processes simultaneously, freeing from "Lockean causality". [see James Bailey's book, After Thought]. But simultaneous processing is not total liberation from linear uni-directional thinking. An entirely new paradigm for both figure and ground is needed. An attempt at this is what is here labeled, TEMPLATONICS.

OVERVIEW

The term templatronics is appropriate since the central idea involved is that of a template. But the fortuitous occurrence of PLATO within the word is also appropriate, for the idea of template is closely related to Plato's concept of archetype. What we shall here refer to as a template is an informational pattern, either static or dynamic, that governs the form(s) that matter and/or energy may assume. Plato's archetypes were also patterns or scenarios of an abstract nature that manifested themselves from time to time on the material level. Manifestations could vary considerably in setting and personae, but the plot would always be the same. Until we have better understanding of the relation between information and energy, we assume that templates or archetypes exist on an "informational level" which is the source of the information that governs all material structures. (Whether the templates/archetypes are "pure information" is for the present unanswerable.) In assuming the existence of (at least) two cosmological levels, we are not making a radical departure from present views which posit fields, forces, and other representations that disregard Locke's insistence on visibility. The principal advantage of the template/archetype model is that it divorces causality and time, allowing not only past-future, future-past, and bi-directional causalities, but also *sine-temporum* causality. However, instead of Plato's pre-existence of the archetypes, the templates may pre-exist, evolve, or be created and governed by some "meta-template".

REPETITION AND REALITY

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

-George Santayana

Reality is acquired solely through repetitionthe man of a traditional culture sees himself as real only to the extent that he ceases to be himself and is satisfied with imitating and repeating the actions and gestures of others.

-Mircea Eliade

Truth is of two kinds--one manifest and self evident; the other demanding incessantly repeated demonstrations and proofs.

-Old Persian adage

An error can never become true, however many times you repeat it. The truth can never be wrong, even if no one hears it

-Gandhi

ghghghghghghghgh

call a whip head

For humans reality is based on the repetitive, and especially on what is most frequently repeated. It is based on the cycles of our biological clocks, getting hungry, being sleepy, ...and on the cycles of terrestrial clocks, day and night, the seasons... and science bases its reality on what is repeatedly observed and reproducible. It seems that it has become psychologically ingrained to hold that what is repeating is real and what is repeated is true.

And now come the spinmeisters who, using this psychological attribute, create "reality" and "truth" by repeating over and over whatever they want people to believe.

But is reality only what is repeated and repeatable?

Is repetition what we call truth?

ONTOLOGICAL MUSINGS

Reality is a way of organizing experience, making constructs out of entities and links¹.

Parameters are links

Our various senses give us a set of parameters, sight, sound, inertia, etc. by which we organize experience to construct "reality"

Sensory Reality:

We create "entities" [primarily by vision] and attempt to see their relationships to one another. The basic sensory link we emphasize is contiguity. The physicists' discovery of "non-locality", inferring non-contiguous connections is "counter intuitive", it violates our particular way of organizing the world. We see a similar temporal relationship in the continuity of entities and posit an invisible temporal connection labeled, causality.

But breaking out of the box will involve not only detecting new linkages but will involve re-entifying, taking common entities apart and reconstructing them in different ways. We must discover and create both alternative entities and connections. We then complete the organization making labels for the entities and links. And assume that the grammars and logics of our traditional languages will work properly for the new labels. [A dangerous assumption] Physicists have selected a set of parameters by which they organize phenomena. The basic ones are Mass, Space, and Time. These are related through the use of a selected set of "fundamental constants", usually, c , G , and h , using a set of rules called "dimensional analysis"

This brings us to an "ontological set theory". The construction of a reality can be done as an exercise in applying the concepts of set theory. Set membership is by itself a linkage, but vague and general. However successive intersects of sets tighten the connections between members as with moving from gas, to liquid, to solid.

The problem of retrieval or reconstruction. Reality must be repeatable, reproducible, therefore retrievable. [Retrieval is a form of reproducible.] This infers the need for a medium of retrieval. Human memory, recollection, is one. But then we make records [re cord, = tie together into a package or reality] Now we have data bases which allow new multi-dimensional ways to retrieve, this will demolish the concept of **a single reality**. The end of linear records. There will be many realities, depending on the selections. [Archeologists seek to reconstruct or retrieve ancient realities]

¹Like Tinker Toys, disks and rods. But with tinker toys both the entities (disks) and the connections (rods) are visible and contiguity is preserved. But contiguity is fading out as the primary connection. The internet is eroding the importance of geographic contiguity. It spells the end of the nation state.

Reality must be capable of reconstruction. This is part of its essence of repetition and reproducibility.

Our sensory reality is a set of selected frequencies. Over limited ranges. We have been able to extend the ranges in our given sense spectra but have not discovered additional spectra.

We may control the figure, the domain of choice, of free will, but we have no control over the Parmedidean ground, the infrastructure which both limits and enables all figures. Existence is located at the intersect or verge of figure and ground.

There may be an infinite regressions of grounds. of infrastructures, of Brahmanas.

The figure is synchronic, the ground is diachronic.

The visible, radio, IR, X-rays, γ -rays, were found to be but different values of a single spectrum.

There are unlabeled essences floating in our minds. It may take centuries to tie them down and give them names. Energy was not netted until the 19th century, Information until the 20th century. And there are many essences still floating out there. The hippies caught one in the 60's they called "vibes", but it escaped the net. The Chinese have long been struggling with one which has not been captured, they call Feng Shui. It may be that making a label helps to capture an essence, but it is not sufficient.

Science is based on the repetitive and reproducible, and hence the retrievable. Repetition infers some sort of frequency and the ranges of frequencies with which science deals are limited. We infer that science produces a very special case reality, one limited by repetition and frequency of repetition. Whitehead adds the limitation of regularity in repetition.

Retrieval is connected to the six interrogative pronouns. Each pronoun refers to a set. Their intersects lead to the retrieval of a specific. Another key to out of the box is additional interrogative pronouns.

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
- 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

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,

FROM
JOYONT1.WPW
JOYONT2.WP6

JOYONT1.WS4
DISK: EPIONTOLOGY

DISK: JOURNEYEAR00
12/03/87
April 4, 1993
July 9, 1994

A few years ago I took a camping trip with my sons and grandson on Lake Powell on the Colorado River. We rented a boat and explored many of the inlets and side canyons, some not much wider than the boat, with sandstone cliffs stretching vertically upwards from the water for several hundred feet. One evening we pitched our camp on a large flat rock on the south shore of the lake. Across the lake we could see the red stone cliffs rising above the northern bank. ^{of the lake} As the sun dropped low in the sky, and the shadows lengthened, suddenly a huge face, strongly resembling that of an Indian chief emerged from the cliff. The likeness was striking, the features were strong and stern, yet quite handsome, and constituted a powerful presence that dominated the entire lake. We stood transfixed and watched as the face slowly disappeared in the dissolving shadows of twilight. All the next day, no face was to be seen, although there were several interesting patterns appearing and disappearing on the cliff as the sun went across the sky. Then at evening as the shadows lengthened, the face re-emerged and again held us prisoners in its stern gaze until sunset.

^{no} There is more to the ^{to} story, but for now I want to make ^{some} a metaphorical point. ^{of} What we call reality corresponds to the face seen on the cliff. There are three ingredients behind this appearance: the actual indentions and protuberances on the rock cliff; the source and direction of the light which illuminates ^{and is reflected from} the cliff; and a set of ^{incomparable} patterns in the observer's code book. The sunlight interacts with the rock shapes to create patterns of reflected light and shadow, these patterns are perceived by an observer who makes ^{distinct} note of them only in the event they suggest something ^{that is} already familiar. ^{Or perhaps strikingly different from anything before encountered}

^{to} 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 corresponds to what we shall term an "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?"

*Pluto
and the
observer
stands*

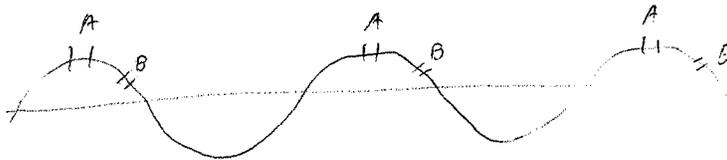
*to
Here
no shall be*

To break out of a given reality, the reality of our culture, one must break with the conventional times and live by a different clock, move to a different place where the perspective is altered, and live in a different configuration including even what one eats. These are the prerequisites to unlearning and restructuring (perestroika). Only when these changes have been made will the light cast different shadows and a different facet of the world be revealed.

The Pagan world was not wrong, the Christian world was not wrong, the Scientific world is not wrong, all are but facets of an ontolog, each revealed through the adoption of a particular epistemology. We must not view the historical sequence as progress, rather we must view the different worldviews as different facets of the basic ontolog which underlies all of our realities. Progress is not in the sequence, nor in the exchange of one worldview for another, but lies in the accumulation and integration of the facets, from which we can begin to perceive the nature of the Ontolog itself.

There are six ways to consider the three elements, Ontolog, Epistem, and Code or Pattern: O, E, and P. These approaches lead to several classical and historic ontological views.

CHOICE OF "MOMENT OF REALITY": A or B or ...



Phase, Amplitude, Code, Frequency, Timbre (form),
Moment

Are phase and moment the same?

THE SPECIES
OF MULTIPLEXING

TIME
FREQ
PLACE
CODE

HOW DOES THE FALSE SELF
FIT WITH THE CLIFF METAPHOR?
A CODE BOOK CHANGE?
A POSITION CHANGE?

In the 1968 Huntington Beach conference on Hierarchical Structures, Ralph Gerard made the remarkable assertion that in encountering the world 'Entitation is vastly more important than quantitation'. He held that our breakthroughs come from looking at the universe in terms of some new kinds of entities, new kinds of units, new kinds of modules. Gerard felt we did not need new experience or new data so much as we needed to look at what is already at our disposal in different ways, to take a different 'slice' through the universe of experience. We needed new entities and a new way of combining entities or modules. **Remodularizing** leads in turn to new modules, to new units and to a new view at a superordinate level.

The notion of **infrastructure**, taken here to mean a selection and arrangement of primary experiential or conceptual entities, is one approach to Gerard's challenge to look at the world anew by remodularizing. An infrastructure becomes itself a new entity or module, to be incorporated in turn into the definition and characterization of those more complex entities or modules we call **worldviews** and **cultures**. An infrastructure is ordinarily not synonymous with a worldview. Most worldviews consist of a set of infrastructures each playing either a dominant or minor role. Similarly a worldview is not synonymous with a culture. Cultures adopt and evolve certain worldviews, dominant and minor, each with their set of infrastructures. Most closely, the notion of infrastructure is related to Kuhn's idea of a **paradigm**. Sometimes an infrastructure consists of a single paradigm, often of a combination of paradigms, as in the infrastructure of modern physics.

Infrastructures result from the emphasis of certain experiences to the down-playing or even denial of others. Individuals as well as cultures get caught up in particular infrastructures, coming to hold their favorite to be both necessary and sufficient for explaining and encountering the world. We see extreme cases of this in religious zealots such as Jehovah's Witnesses, political zealots such as communists or nazis, or epistemological zealots such as logical positivists. What characterizes each of these is fastening onto some particular concept or aspect of experience and blowing it into a plenum. While some such mono-infrastructureal approaches may give a lot of mileage, in general a single infrastructure in exclusion of others is a dead end.

Infrastructures are characterized by **A)** A set of primaries, i.e. a set of experiences, phenomena, concepts or values serving as a foundation upon which all else can be built. Since this is very much like an axiomatic system in mathematics we must conclude from Gödel's Incompleteness Theorem that no infrastructure is sufficient for encompassing all experience. and by **B)** A characteristic way of thinking, a system of logic, a way of symbolizing, a grammar or syntax, including a jargon or even a special language or code for encoding meaning. Infrastructures are made competitive by zealots, but by nature are complementary. They are 'slices' of the universe, each slice leading to some different reality. This suggests that alternate infrastructures are like altered states of consciousness, in part true but only to the extent that both lead to different perspectives and models of the world.

aspects of

ON ENTITATION

Ralph Gerard Quote

This morning all is covered with frost. On the porch is a clean plane of smooth even frost. But from this 'ground' of frost emerges a 'figure' of glistening particles. These figure highlights form patterns, like the constellations formed by the stars in the night sky. Like the constellations, these patterns in the frost have only an apparent reality, for when I move slightly to a new position, the patterns disappear and new ones emerge. These patterns force themselves on us, not because of any intrinsic significance, but because our eye is caught by their brightness. This is a case in which the 'world' which emerges from the sunyata of the frost is filtered by our eye, selected by our mind.

A new world comes from moving your head. from metamoria

but isn't there the pre-system of recognition

If it is true that our minds select a particular world [pattern] from a plethora of possible worlds [patterns], then does our particular selection have any special cosmic significance? Rather than worry about the answer to that question, it seems more important to explore the set of patterns available to us. Then from that set we may begin to see something of the nature of the cosmos itself. So the question becomes, how do we find the members of the set available to us.

All is ground until experience, an interaction with the sunyata [frost plane] generates (or selects) a figure. Using a sonic metaphor, all is noise until experience generates (or selects) a signal. What then, leads to the emergence of figure? The sources of figure seem be sensory contrast (as the glisten patterns in the frost), relative motion, and recognition. (~ something familiar is re-collected)

In the case of the patterns in the sky, at first significance was attributed to the different constellations. But when it was realized that the pattern depended on the position of the observer, these significances disappeared. Then it was realized that some patterns might have some significance after all. Close groupings of stars, e.g. the Pleiades, might indicate a entity more 'real' than just a two-dimensional high density area in the sky. The problem of the reality of clusters was only settled when an additional observational parameter also displayed clustering. (Usually spectral type or line of sight velocity.) Thus significance, and hence entification, came to be built on the number of sensory or observational parameters that were detectable. We must add then to the three above mentioned sources of figure, the enhancement of figure by multi-parameter correlation.

There is a sense that a creative person has to have at least two frames of reference. If you are completely devoid of this, your chances of humor are slim.

Kenneth Craik
(Prof at Berkeley)

Right Left Forward Back
East West North South
Exteriority
Past + Future

long, lat, elev, time

Now

We like 4-fold frames

ENTITATION IS VASTLY MORE IMPORTANT
THAN QUANTITATION

RALPH GERARD

p 219-220

Hierarchical Structures

THE CALL FOR RE-ENTIFICATION

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 units or modules, or at some new ways of combining them.

Ralph Gerard, Hierarchical Structures p218

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.

The call for re-entification is the intellectual counterpart of the call for spiritual transformation.

*Quantity is usually a one parameter concept
Quality is multi-parameter*

EP!

FOURWISD.WPD

FEBRUARY 4, 2001

FOUR SOURCES

There are four "Scriptures" or sources of human knowledge and wisdom:

1) **Nature:** The domain of the Hunter.

What is the purpose of our understanding nature and its processes unless it is to accept nature as an exemplar to guide us in our actions and creations. However, we have used our knowledge of the workings of nature to fabricate tools and weapons for dominance and destruction rather than taking it as a credential for inclusion in the Council of Cosmic Destiny.

2) **The Distilled Experience of the Past:** The domain of the Leader

For the most part recorded in such books as the Bible or Koran. However each of these books has been mutilated in redaction for communication, in translations and in interpretations, and worst of all exploited for human agendas. And these distortions have given us anachronistic guideposts such as the Biblical injunctions to subdue the earth or to be fruitful and multiply. Injunctions, that if now obeyed, would ultimately lead to our extinction.

3) **The Wisdom in Nonsense and Absurdity:** The domain of the Clown

When we laugh at our selves and our "wisdom" we are taking the first step toward escaping the box which we have built with our intellects. Our arrogance has entrapped us in this box, but when we ridicule ourselves, for a brief moment we are out of the box, and lose our haughtiness. As G.K.Chesterton has said, "Nonsense is a way of looking at existence that is akin to religious humility and wonder." Honor your errors.

4) **Inner Knowledge:** The domain of the Shaman, the Mystic

In this approach all that is said above is transcended. However this wisdom is ineffable. It cannot be articulated or communicated. While the Kingdom of Wisdom is within, within each of us, it is only available to those who dedicate themselves to its disciplined path, and then only to those who are able to *recognize* it.

It is well to note that what we call the world, the world that we experience, is a uroborus, a loop. We experience the world and in the act of experiencing recreate the world. The empirical involves both passive observation and active participation through re-creation. And the rational, our reason and logic, is an abstraction from our experience of this world that we have selected and created. While we should not maintain that the empirical and rational are wrong, we must recognize that both are but special ways of dealing with a special case. It comes to a matter of validity rather than truth. Our rational facilities work and are valid in this particular world that they have participated in building, but are hardly a scaffold for exploring the multiple facets of reality and potentiality of which the world of our perceptions and conceptions is but a special case.

On Epistemology

An epistemology is a strategy for encountering an unknown, or partially known, world. In general its goals are to:

- Make a map or model or theory that represents that world
- Discover the bounds or limits of the world
- Enumerate the variety of phenomena (species) encountered together with relationships and frequency of occurrence.

An epistemological strategy is a dialectical process. That is, it is a process that oscillates between two phases. The typical epistemological dialectic consists of 1) constructing a framework (model, theory, map) to contain all of the data (experience, phenomena, terrain) encountered. And 2) placing the data in the framework. Whenever there is no place for the data in the framework, return to phase 1 and reconstruct the framework. This process is like going forward by walking, moving the left foot then the right foot. Sometimes the frame foot is not moved forward, the data that does not fit is instead ignored or discarded. This limits further movement of the data foot. Sometimes a frame will handle only part of the data, while another frame will take care of other parts. Sometimes several frames are needed, some perhaps overlapping, but no one of which is capable of containing all of the data. There seems to be an **epistemological imperative** that requires reduction of all frames to a single frame.

It must not be assumed that the unknown world is immune from the acts of the explorer or from the consequences of being explored, nor that the explorer is not modified. In the case of the astronomical universe, we assume that our observations of it have no affect on its structure or behavior. However, there are other domains in which our observations and exploration alter their nature. Examples include the anthropological study of native tribes, and the micro quantum world. Hence it is wrong to think of an epistemology as purely a strategy of exploration. Encountering or engaging the unknown world may involve creation and alteration as well as exploration, invention as well as discovery, and teaching as well as learning. The explorer may alter the world he explores. His map may describe himself as well as the unknown world. The world of mathematics is an example of one in which the boundary between discovery and invention is uncertain. Thus unknown worlds lie in a spectrum that extends from frozen in concrete to be encountered purely by exploration, to amorphous and pliable to be encountered purely through creativity.

It follows that a more general epistemological strategy must allow for both discovery and invention, for both exploration and creation, for both science and art. How then are the above three goals of an exploration epistemology to be generalized for an exploration-creation epistemology? What are the criteria for discrimination between frozen and pliable domains, between domains for discovery and domains for invention.

EPI

1996 #42
1996 #45

LIBERATION EPISTEMOLOGY

Paul Feyerabend, the *bête noire* of the philosophy of science, in his book, **Against Method**, says we must have liberation epistemology as well as liberation theology. We must have separation of state and science as well as separation of state and church. This philosophical anarchist holds that "the idea of truth is concealed and even perverted by the processes that are meant to establish it". He further believes that it is most important to consult the non-expert as well as the expert in any endeavor for they often know more than the expert. But his basic thesis is that *"the events, procedures and results that constitute the sciences have no common structure"*. He concludes that scientific successes cannot be explained in a simple way. There is no straight forward step 1, step 2, step 3 ,... procedure for doing scientific research. An important inference of this is *"the success of science cannot be used as an argument for treating as yet unsolved problems in a standardized way"*. But most revolutionary is his conclusion that *"non-scientific procedures cannot be pushed aside by argument"*. And *"the public can participate in the discussion without disturbing existing roads to success"*, and the public should participate whenever the research bears on their interests.

Some of the salient points that Feyerabend makes in his book:

- > Science is essentially an anarchic enterprise: theoretical anarchism is more humanitarian and more likely to encourage progress than its law and order alternatives.
 - {[We usually think of Apollo as the god of order and creativity, but Feyerabend recognizes the role in creativity played by Dionysus.
- > The only principle that does not inhibit progress is: anything goes.
- > We may use hypotheses that contradict well confirmed theories and/or well established experimental results. We may advance science by proceeding counterinductively.
- > The consistency condition which demands that new hypotheses agree with accepted theories is unreasonable because it preserves the older theory and not the better theory.
- > There is no idea, however ancient ^{or} and absurd, that is not capable of improving our knowledge.

EPI

OUTER AND INNER EPISTEMOLOGIES

Apodictically human experience is dualistically divided into sensory and non-sensory categories. However, the dominant Western worldview for the past few centuries has emphasized the sensory aspects of existence to the extent that the thrust of its inquiry is toward reducing all experience and phenomena to a sensory and materialistic base. This non-dualistic dogma found extreme expression in the thirties and following decades in the views of the Logical Positivists. While the cutting front of scientific inquiry recognizes that pure objectivity is unsustainable and no longer adheres to the positivist dogma that what is non-sensory is nonsense, the residue of positivism still pervades Western thought and research. It asks where in the body or brain is the mind located. It cannot sustain, even hypothetically, the alternative ~~non-~~dualistic question, where in mind does the body exist.

the ontological arguments of
 Postponing, ~~arguing~~ dualism vs. monism, ~~ontologically~~, it is clear that dualism must be predicated epistemologically. That is to say that those epistemologies, such as the scientific, which have proved successful in exploring the world of sensory experience are not suited to exploring the so-called inner world. An extensive collection of inner epistemologies do exist and have proven successful over millennia for exploring inner or mystical experience. Had the positivists been willing to utilize an inner epistemology, they would have become aware of a world that their external epistemologies could never reveal much less explore. It must repeatedly be emphasized that the inner world cannot be explored scientifically and to try to adapt the epistemologies of science to its exploration goes nowhere.

However, The general proposition that an ontology is the product of an epistemology not only ~~maintains~~ ^{exists} for the sensory world but appears also to hold for the inner world. The "practice" that is adopted for inner exploration determines the nature of the inner experiences encountered, much as the instruments and techniques used in exploring the material world determine the physical phenomena encountered. In both the inner and outer cases each epistemology reveals but a **facet** of their respective worlds. The ontological questions arise through the differences in the facets and whether the inner and outer worlds themselves are also but facets of one World. Since no one epistemology is all encompassing we can only know the total World by applying multiple epistemologies, studying their overlaps and stitching together their results. To expect the product to be seamless is expecting too much from ~~limited~~ finite organisms.

the capabilities of

Epistemologies of the Intellect	4 fold
Epistemologies of the Heart	3 fold

KNOWKNOW.WPD

MARCH 4, 2001

KNOWLEDGE AND KNOWING

What is knowledge?

Knowledge is a heritage of symbolized, organized, and interpreted collections of selected experiences. It is directed by its history, and channeled by the conscious and unconscious limitations and prejudices of its possessors and pursuers. And at every instant of time it is only about the past, with its acceptance, but not its validity, ultimately resting on some degree of consensus. It claims to be a description of reality, but is in fact a surrogate for reality. Its "quality" is measured by frequency of repetition, intentional reproducibility, and general self consistency. It is the product of our so-called *rational* cognitive functions.

Since the limitations and prejudices of the possessors and pursuers of knowledge differ and vary from person to person, there is no universal consensus. There is a "continent" of knowledge, constructed on the broadest consensus, that is, a consensus that includes most humans, the least common denominator so to speak. But there are also "islands" of knowledge [experience] which may or may not be consistent with the continental canons of acceptance, and which are for the most part denied.

What is knowing?

Whereas knowledge is a possession of the mind, a configuration of certain molecules in the brain, knowing is a state of the mind, and a special configuration of every molecule in the body¹. That is to say, knowing is not a matter of thought, it is a matter of feeling. While knowledge may be an accumulation of messages, knowing is an active in-the-present exchange of messages, a duplex communication with some context. Knowing is communion, full knowing is full communion. It is the product of our *intuitive* cognitive functions, sometimes called *recognition*.

Again, since our limitations and prejudices differ from person to person, knowing cannot be brought into a simple all inclusive package. The worlds that can be encountered in knowing are so varied that only a limited consensus is ever possible. Consequently, what is encountered in knowing has never been adequately articulated. While there have been attempts to symbolize the experiences of knowing, no symbolic language can begin to capture communion.

We see reflections of the distinctions between knowledge and knowing in the distinctions between reason and faith, between the empirical epistemology of science and the spiritual epistemology of meditation. But it is at the verge, the overlap at the interface between the reasoned and the recognized, that the key to human enlightenment lies. The ongoing search for deeper and more comprehensive perceptions and conceptions requires the risk of openness and the avoidance of the Scylla of dogma and the Charybdis of nihilism.

¹ Every molecule, organic or inorganic, is sensate in that it perceives inertial forces. Not only your brain knows when you are falling, your whole body knows.

EPISTEMOLOGY APHORISMS

Whitehead said that nothing can be experienced which does not recur and nothing can be measured which does not recur regularly. Since more recurs that recurs regularly, it follows that we can experience more than we can measure and that the world of the physicist is a restricted one.

Apart from recurrence, knowledge would be impossible; for nothing could be referred to our past experience.

Whitehead (The World of Mathematics Vol I p411)

Apart from regularity of recurrence measurement would be impossible. In our experience as we gain the idea of exactness, recurrence is fundamental.

Whitehead (ibid)

Apart from recurrence, knowledge would be impossible; for nothing could be recognized nor referred to past experience. Further, apart from regularity of recurrence measurement would be impossible. --Whitehead

8. The precepts of Eddington and Whitehead lead to the paradox that the world, in order to be experienced, requires both absence of sameness and recurrence of sameness. --Li Kiang

The world exhibits both repetitive and non-repetitive change. Sometimes referred to as archetypal and historical change. Whitehead said that without the repetitive component of change, measurement, science, and even knowledge would not be possible. Other philosophers have held that it is only the non-repetitive that supplies meaning to the world. So, from the repetitive comes knowledge, and from the non-repetitive, meaning. [Knowledge is a matter of archetypes, meaning a matter of history.]

Whitehead proposed that only those phenomena that repeat are assimilated by human experience. The epistemology of science in particular is based on repeatability and requires all results to be reproducible. In addition to reproducibility science requires that its models and theories have the ability to predict. This requirement forces science to assume a deterministic world, since philosophically prediction hinges on some form of causal determinism. The portion of the world amenable to scientific epistemology is thus limited to those phenomena that repeat and are causally determined. With the recent advent of chaos theory a difficulty arose. Causal determinism was still held to be the fundamental mechanism of the universe, but predictability had been lost. Determinism and predictability were no longer an inseparable pair. Why? Did the difficulty lie in the nature of predictability or in the nature of determinism? Were there too many variables

variables rendering systems too complex for current means of prediction, or were our notions of causality too simplistic? While the complexity of chaotic (that is non-linear) systems challenges classical modes of prediction, is it to be concluded that such systems are not deterministic? The answer seems to lie in the principle that chaotic systems, while deterministic, are not repeating. And since our modes of prediction rest on repetition, chaotic systems may be deterministic and yet be unpredictable. Hence the "paradox" of non-predictable deterministic systems.

Maxwell's idea of singular points affords us a broader approach to characterizing systems. A system that is classically deterministic would have no singular points. Chaotic systems of different types would have from one to some finite number of singular points. The path of an "existential" system would consist of nothing but singular points. Such a system would be totally open and entirely free of its past.

- 1] The PERCEIVED is a subset of the KNOWN
because there are alternative modes of knowing beside perception, eg intuition, logic, etc
- 2] The KNOWN is a subset of the EXISTING
- 3] We habitually but erroneously assert that existence is tied to perception or
What is not perceived does not exist
- 4] Three reasons for non-perception:
 - 1) Not experienced, i.e. exists but has not been encountered
 - 2) Beyond the limitations of perception (UNPERCEIVABLE)
Some limits: Eddington limit, 1/f noise, Weber-Fechner limit,
Whitehead limit, Pythagoras' limit (some are intrinsic, some escapable)
 - 3) NON EXISTING
- 5] Besides the limitations of perception, there are limitations of knowing
These have to do with the limitations of reason and logic (Godel),
of computability (Turing), and the nature of the random (Chaitin)
- 6] Is Godel's incompleteness theorem (cannot be both consistent and complete)
an ontological theorem [cf Ratna Sambhava] as well as an epistemological theorem?
[Note: This theorem puts traditional theistic and monistic notions in question.]
- 7] Is consistency/inconsistency the ontological boundary between existability and non-
existability? [again Ratna Sambhava]
 - 8] There must be a sufficient body of consistent
{equations-propositions-phenomena} to qualify as {theory-model-reality} ~
Einstein
- 9] Kant's *phenomena* belong to the set of KNOWN + EXISTING
- 10] Kant's *noumena* belong to the set of EXISTING but NOT KNOWN

Of equal, or possibly of even more significance than the probable events we tend to classify as "laws of nature", are various kinds of improbable and unique events. These are usually denied or ignored by an epistemology which restricts itself to the repeated and reproducible. [read the scientific method]. Here we note four kinds of improbable events:

1) Events that are exceedingly rare, but may be re-occurrences of some long term cyclical phenomenon. Eclipses were such phenomena for the ancients.

2) Improbable events that taken collectively follow a recognizable pattern. If, when a certain number of such improbable events occur, and through their similarity they form a recognizable *pattern*, then, although each event is improbable, the pattern itself may acquire statistical validity

3) Synchronicities

Among events of high improbability are those that C.G. Jung called *synchronicities*. These are improbable happenings that intrude into an ordinary sequence of events in a meaningful manner. There are no visible causal connections, but there are meaningful consequences. Synchronicities interact with probable events in such a way as either to meaningfully redirect them or bring them to an unforeseen but meaningful conclusion. One of the questions that arise here is, what is meant by meaningful? Meaningfulness has to do with subjective expectations regarding fitting a well recognized [hence probable] pattern or archetype. Thus a synchronicity reconciles the improbable with the probable, the acausal with the causal, and infers that there is innovative creation continually joining with what already exists.

A basic feature of a synchronicity is timing. Synchronicities always involve a temporal improbabilities. For a synchronicity consists of a confluence of events, whose occurrence may individually be probable but taken in toto constitute an improbable coincidence. That is, the basic improbability in a synchronicity lies in the improbability of the coming together of the constituent events at the same moment in time. And as Jung defines, a synchronicity in addition always involves meaningfulness, either a meaningful message or an action that meaningfully redirects the course of events. Time, meaning and improbability, a curious triad that has traditionally been called either luck, fortune, or fate.

4) Miracles

Another species of improbable event is known as a *miracle*. Over centuries countless so-called *miracles* have been well documented. But since the laws of nature are basically statistical, a miracle is neither a violation of an inductively established law nor a falsification of that law. From the viewpoint of probability theory, a miracle is but an improbable event. However, when a sufficient number of miracles constitute a pattern, as pointed out before, that pattern acquires far greater statistical significance than any of its improbable components. We must agree with Hamlet, "There are more things in heaven and earth, Horatio, Than are dreamt of in your philosophy."

Perhaps the most pervasive changes that took place resulted from the discovery that comprehensiveness was not leading to oneness, and if we seek to be comprehensive, consistency must be abandoned. Of course, there are those still attempting a "theory of everything", a conceptual residue of Akhnaten's monotheism, dating back to the xviii dynasty. . But if all is to be put into one package, it will not be the way of the past, the dogma of One Truth. The pieces of

the puzzle do not come together to make one picture. Sub-sets of the pieces can form complete pictures. And many of the same pieces can be used to form different pictures. But no single picture uses all of the pieces. [cf Gödel] We must therefore abandon Truth, [one picture], while retaining validity [many pictures]. The universe is far too rich in possibilities ever to be captured in a single picture [or model]. And while the universe is coherent, nothing requires it to be consistent. But to abandon consistency is to embrace madness! That may be, for madness is a label for thinking out of the box.

JOHN ARCHIBALD WHEELER (quotes)

Increasing knowledge about detail
has brought an increasing ignorance about plan.

Every law of physics, we think today, goes back in one way or
another to some symmetry of nature.

There is not one law of nature that does not require space time
for its statement.

Above taken from Scraps:

INTCYC.W52	JAN 20, 1994
EDWHITE.P51	JAN 5, 1992
PREDICT1.WPD	MAR 28, 2000
PSEPON.WPD	APR 21, 2000
IMPROB2.WPD	NOV 29, 2000

FOUR EPISTEMOLOGICAL APPROACHES

Difficulties with reductionism have caused several in the scientific community to feel that alternative perspectives should be adopted ¹

I REDUCTIONIST

This is the approach that has been the paradigm for the scientific method for the past three centuries. It is the "bottom up" approach, causality operates from the small to the large. The properties of entities are to be explained in terms of their components. Atoms in terms of quarks, molecules in terms of atoms, organisms in terms of molecules, etc. While new properties emerge at each level, what is possible is determined by the properties of sub-parts.

II MACHIAN

Mach's Principle. This is the great anti-reductionist principle that holds that the total system imposes its nature on each of its parts. The constants of nature, the properties of particles, atoms, molecules, the laws of physics and chemistry are what they are because of the properties of the universe as a whole. In a less restrictive way, the traditional ideas of similarities or isomorphism between parts and whole, microcosmos and macrocosmos, 'as below, so above' etc., are forms of Mach's Principle, but with neither a bottom-up (reductionist) nor top-down (machian) direction of causality.

III TEMPLATE

The template approach is neither bottom up nor top down. Traditionally the template approach is represented by classification systems, such as those of Linnaeus. A classification system does not attempt to explain the parts in terms of the whole or vice versa. It does try to identify parallel structures and processes.

Template = a consilience of classifications Infrastructures

No attempts at cause-effect not concern with source

IV THEOLOGICAL

fundamental constants top down or bottom up or template ?

A few general principles can explain everything. The oldest form is that of a supreme being who designed and created all, but explanation is left with God said so.

¹For example, A DIFFERENT UNIVERSE by Nobel Laureate, Robert B. Laughlin

PROJECTS:P51

DISK: IDEA CONTROL

April 23, 1991

PRIORITY PROJECTS AS OF APRIL 23, 1991

I CONTROL

- 1 • THE NON-LINEAR BOOK
- 2 • ITEM DATABASE,
 - a DBASE IV
 - b MEMOMATE
- 3 • SCRAPS NOTEBOOK
- 4 • FRAMEWORKS
 - a CYBERNETICS
 - b THE FIVE DYANI BUDDHAS
- 5 • RELATIONAL DATABASES
- 6 • *QUOTE DATABASE*

II EXTENDING THE SPIRITUAL

- 1 • THE GREAT DIALECTIC
- 2 • THE TRANSFIGURATION
- 3 • JOURNEY OF THE YEAR
- 4 • SACRED SPACE
- 5 • FAITH AND REASON
- 6 • HERESY-ORTHODOXY
- 7 • CHURCH AND STATE
- 8 • GENESIS CHAPTER I w- GENESIS CHAPTER II
- 9 • SPIRIT w- INFORMATION
- 10 • I THINK w- IT THINKS IN ME
- 11 • DEATH/RESURECTION CYCLE w- DEPARTURE/RETURN CYCLE
- 12 • THE WESTERN MYSTICS
- 13 • THE ZEN PATRIARCHS

III EXTENDING THE MENTAL

- 1 • ONTOLOGY-EPISTEMOLOGY
 - a { SAMENESS, RECURRENCE, CONTINUITY
 - { EDDINGTON, WHITEHEAD, CHANG TZU
 - b GROUND w- FIGURE
 - c CYRIL SMITH AND THE INTERSTICES
 - d RALPH GERARD AND RE-ENTIFICATION
 - e RE-SIGNIFICATION
 - f HERAKLEIDOS w- PARMENIDES
- 2 • STYLES OF THINKING: NEW METHODOLOGIES
 - a PATTERN THINKING *Diagnosés*
 - b REPETITION, ITERATION, RECURSION
 - c JUXTAPOSITION w- ASSOCIATION
 - d SCAN-SELECT-ZOOM - *Significate*
 - e MORPHOLOGY
 - f JIG SAW METAPHOR *THE QUESTION-ANSWER DIALECTIC*
- 3 • a THE SIGNIFICATION OF SIGNIFICATION
 - b MANIPULATION AND BRAINWASHING
- 4 • NEW CONCEPTS
 - ~~CHAOS THEORY~~

IV EXTENDING THE PHYSICAL

- 1 • THE UNIVERSE IN NATURAL UNITS
- 2 • THE BOOK OF TIME
 - a CHON AS ZEITGEBER
- 3 • SCALE ~~w~~ EXTENSION
- 4 • *CHAOS and FRACTALS*

V COMMUNICATION

- THE VALUE OF STORIES

VI RECAPITULATIONS

- 1 • AGES IN REVIEW
 - a THE PISCEAN AGE
 - b THE LAST MILLENNIUM
 - c THE AMERICAN EXPERIENCE: THE FIRST 500 YEARS
 - d THE TWENTIETH CENTURY
- 2 • THE GULF WAR

SIGNIFICATIONS 1993

EPISTEMOLOGY

THE PROBLEM OF INTRINSIC STRUCTURE VS IMPOSED STRUCTURE. DO WE EXPLORE OR CREATE THE COSMOS? WHAT IN THE WORLD IS 'OUT THERE' INITIALLY AND WHAT IS OUR OWN CREATION? WHAT IS NATURAL AND WHAT IS CONSTRUCTED? e.g. IS MATHEMATICS DISCOVERED OR INVENTED?

Kronecker Quote re the integers

LOGIC

WHAT ARE THE LIMITS OF ARISTOTELEAN BINARY LOGIC? WHAT IS THE PROPER LOGIC FOR QUANTUM REALITY?, SPIRITUAL REALITY? IS TWO VALUED LOGIC AT ROOT OF MANY OF OUR PROBLEMS? HOW DO WE TRANSCEND OUR BINARY MINDSETS?

ONTOLOGY

WHAT ARE THE LEVELS OF EXISTENCE? WHAT IS THE ROLE OF CONSCIOUSNESS IN ONTOLOGY? DO REALITIES EXTERNAL TO TIME AND SPACE EXIST? WHAT ARE THE STEPS IN ENTERING A NEW REALITY? IN INTERSTICES.

Disembodied Information?

EXISTENCE ONLY

AXIOLOGY

WHAT HIGHER VALUE IS THERE TO REPLACE FAIRNESS AND JUSTICE?

THEOLOGY

IS RELIGION A BRANCH OF PSYCHOLOGY OR IS PSYCHOLOGY A BRANCH OF RELIGION? WHAT ARE THE ERRORS OF MONOTHEISM AND THEIR CONSEQUENCES? WHAT IS THE NEXT, LONG OVERDUE, THEOPHANY?

OBLITERATION OF SPIRITUAL LEVELS, HIGHER GODS, CONFUSION OF PERSONAL GUIDE WITH GC

TEMPORALITY

WHAT IS THE FUNDAMENTAL ZEITGEBER IN THE COSMOS? HOW DO WE INTEGRATE MOTION DERIVED TIME WITH DENSITY DERIVED TIME? ARE WE USING THE CORRECT CLOCKS IN OUR COSMOLOGICAL MODELS?

SOCIOLOGY

WHAT IS THE RESOLUTION OF THE COUNTER TRENDS OF ECONOMIC UNITY AND CULTURAL PLURALISM. ARE WE ENTERING A PERIOD OF HOMOGENIZATION OR FRACTIONALIZATION? WHAT KIND OF MELTING POT IS EVOLVING IN AMERICA?

WHAT IS THE (CIVIL) RELIGION IN AMERICA? *See E.D. HIRSCH*

(Secular)

Cultural Literacy

ECONOMICS

WHAT IS THE ENDPOINT OF THE THREE ECONOMIC LOOPS?

CONSOLIDATION or DIVESTITURE?

PROJECT AREAS AUGUST 1999

1. AMERICA
 - a. Before Columbus
 - b. Declaring Independence
 - c. Melting Pots
 - d. Second Republic
2. AXIOLOGY
 - a. Virtues, the transcultural
 - b. Values, the cultural
 - c. Level of view
3. CAPITALISM
 - a. Investment strategies
 - b. Winner Take All
 - c. Ownership definitions
 - d. Alternate bottom lines
4. EPIONTOLOGY
 - a. Dyads
 1. Dialectics : *H/D, Great Dialectic*
 - b. Spaces *P, H, B,*
 - c. Nontology
 1. Species of non-existence
 - d. Alternate Epistemologies *Recognition, deja vue, Whitehead*
 1. "The Cliff"
5. EVOLUTION
 - a. Extinctions/Radiants
 - b. Contextual Evolution
 - c. Emergence, Morphogenesis
 - d. Selections *and Selectors*
6. HISTORY
 - a. Axial Periods
 - b. Yugas, Kalpas
 - c. Footnotes
 - d. Bo Byeki Byekov Themes, Events, Persons
7. LOGIC
 - a. Beyond the Excluded Middle
 - b. Gödel and Incompleteness
 - c. New Think
 1. Juxtapositions
 2. Quadrics
 - d. Validities

8. PYTHAGOREAN COSMOGRAPHY
 - a. Constants
 1. G, c, h
 2. α, μ, \sqrt{S}
 - b. Particles
 1. Planck, baryons,
 - c. Bounds
 1. Schwarzschild
 2. Heisenberg
 3. Einstein
 4. Quadrants
9. PYRAMIDOLOGY
 - a. Egypt
 1. The Great Pyramid
 2. Other Egyptian pyramids
 - b. Other pyramids
 - c. Mathematical groupings
10. QUOTATIONS
 - a. Li Kiang
 - b. Three word aphorisms
11. RELIGION
 - a. Buddhism
 1. The Five Tathagatas
 2. Meditation
 3. Nagarjuna
 4. Shantideva
 5. Paradoxes
 - b. Christianity
 1. Journey of the Year
 2. The Transfiguration
 3. Bread and Wine
 4. Heresies
 1. The Celtic Tradition
 2. Pelagius
 3. Icons
 - c. Monotheism
12. SIGNIFICATION
 - a. Manipulation - *ADVERTIZING - PROPAGANDA - PR. - IMAGE*
 - b. Brain Washing - *THOUGHT CONTROL*
 - c. Important, Significant, Valid
13. TIME
 - a. Chronos, Kairos
 - b. Movement, Change, Density

1. DYADS

2. DIALECTICS

Homogenization//Diversification

Stability//Change

Realization//Potentialization [The Great Dialectic]

Materialization//Etherialization

3. SPACES

P-SPACE POSITION or PHYSICAL SPACE

H-SPACE PATTERN, ARCHETYPE, GENOME SPACE

B-SPACE BONDING, CONSOLIDATION, MERGER SPACE

O-SPACE OPTIONS, ALTERNATIVES, DECISION SPACE

S-SPACE INFRASTRUCTURE, GROUND SPACE

4. FOUR

5. PYTHOGOREAN COSMOLOGY

The Planck value for the Hubble parameter

Cosmology without telescopes

The four quadrants

6. TIME

7. CORTEZ//MOCTEZUMA

8. NODES//LINKS

9. ATHROISMATICS

PARTS//WHOLE

10. TOP DOWN//BOTTOM UP

GOD//REDUCTIONISM

PROJECT UPDATE APRIL 2000

P PYTHAGOREAN COSMOGRAPHY
The existable/non-existable template

Z COGNITIVE STRATEGIES
Emancipation from Aristotle, Occam, and Carnap]

D FORCE <--> FORM
The twin dragons of creation

D THE DIVERSIFICATION//HOMOGENIZATION DIALECTIC
Zarathustra demythologized

N THE VARIETIES OF NOTHINGNESS
Nagarjuna vindicated

E EPIONTOLOGY
The world you get is the world you ask for

T METAOLOGY
An axiology for the inner world

M BUNDLING AND DEPACKAGING
How to frame and deframe an issue

W A PILGRIMAGE INTO H-SPACE
The benedictions of forms

P ITERATION OF THE RANDOM
The determinism that is begat by chance

W ATHROISMATICS
The mathematics of ≠

Z FOUR
The quadfurcated world

PROJECTS

June 27, 2000

- P ▶ **PYTHAGOREAN COSMOGRAPHY**
What can exist and what cannot exist
- T ▶ **AXIOLOGY**
The source of values, the great dialectic
- D ▶ **DIALECTICS**
Dynamic and static, Inverse dialectics, history
- Z
E
W ▶ **NOVO COGNITIO**
Alternate logics, morphology, quadrics, apophasis
- N ▶ **NAGARJUNA**
The levels of nothingness, 0, 1, nihilism
- M ▶ **MANIPULATION**
Social coherence, education, thought control
- A ▶ **AMERICA**
Independence, melting pots, freedom, justice
- X ▶ **AXIAL AGES**
Extinctions, radiants, evolution
- Q ▶ **QUOTES**
Aphorisms, adages, apothegms, Li Kiang
- L ▶ **THE LAST PISCAN**
Personal, anecdotes, teachers, travels, testament

PROJECTS: APRIL 2002

- I. THE LAST PISCEAN
Personal experiences. Anecdotes
- II. THE JOURNEY OF THE YEAR
Liturgical years, Calendars, Epochs
- III. A PYTHAGOREAN COSMOLOGY
Quadrants, Matrices, Force, Time and Frequencies
- IV. COGITANS
New Think, Four Thought, Logic, Spin
- V. EPIONTOLOGY
Epistemologies, Ontologies, Nontology
- VI. ATHROISMATICS
Parts and Wholes, Nodes and Links, Spaces
- VII. THE PRIMARY DIALECTICAL ENCOUNTERS
Dyads, Homogenization/Diversification, Indifference/Compassion, Random/Order
- VIII. SOCIETIES AND CULTURES
Economics, History, Melting Pots
- IX. NATURE
Kingdoms, Rocks, Trees, Streams, Clouds, Birds
- X. SHAPES
Topology, Pyramids, Polystars, Form <----> Force
- XI. UNFAMILIAR QUOTATIONS
Aphorisms, Apothegms, Li Kiang
- XII. CODICES
Longer Quotations, Stories

SORTING TOPICS

COSMOGRAPHY

CONSTANTS, PLANCK PARTICLE, HUBBLE CONSTANT
QUADRANTS, SCHWARZSCHILD AND HEISENBERG BOUNDS
MATRICES: FREQUENCIES, FORCES, MASSES
TIME, VREMS, CHON
PHYSICS: STANDARD MODEL

*Not Categories but
alternate ways of
connecting the dots*

COGITANS

STYLES OF THINKING
TOOLS OF THINKING
Morphology, Juxtapositions, Four Thought, Apophases
REPRESENTATIONS, SYMBOLS, LANGUAGE
LOGICS, INFORMATION
SPIN, BRAINWASHING, EDUCATION
Escape from Aristotle, Occam, and Carnap. Embrace Leonardo da Vinci, and facetism

EPIONTOLOGY

EPISTEMOLOGIES, KNOWLEDGE
ONTOLOGIES, REALITIES
PROCESSING EXPERIENCE
Dialectics, Five Tathagatas
REDUCTIONISM, STRUCTURALISM, TEMPLATISM, SELECTIONISM
NONTOLGY, NOTHINGNESS 0 and 1

MATHEMATICS

CELLULAR AUTOMATA, CODES, WOLFRAM
YANGHUI, FIBONACCI
FULCRUM NUMBERS
PRIMES, PERFECTS, etc.
PYRAMIDS, SHAPE FACTORS AND RATIOS
TILINGS, POLYSTARS

ATHROISMATICS

AGGREGATES, PARTS AND WHOLE, SETS AND SUBSETS
EQUALITY, CONTAINMENT, MUTUALITY, [HOLOGRAMS]
SPECIES OF LINKS AND NODES
SOURCES OF "DOTS"
ENTIFICATIONS, PATTERNS, GAMES
ORGANIZATION

Self-organizing systems; Self-destructing systems

LAWS OF CHANGE

Evolution: Selection, Emergence, Extinctions, Radiants

Second law of thermodynamics, Principle of Plenitude, Law of Hardening

Vector Law, *Action-Option Law*

SLICES

Spaces: P, H, B, K

Force \longleftrightarrow Form

DYADS, SPECIES OF Opposites, Symmetries, etc

Pattern|Game, Diachronic|Synchronic, Structure|Process,

Coherence|Consistency, Causality|Meaning, Continuity|Contiguity

DIALECTICS, SPECIES OF

Socratic, Hegelian, H/D,,

SOCIO-POLITICAL

HISTORY, AXIAL PERIODS

CULTURES, MELTING POTS

VALUES

Liberty, Freedom, Justice, Independence, Pluralism, Security

LEVELS

Pain-Pleasure, Interesting-Boring, Important-Irrelevant, Valid-Illusory

TYPES

"They", Wanabees, Masses, Fringe

GOVERNMENT: RULES AND RULERS

AMERICA, AN EXPERIMENT

From Iroquois to Bushidos

ECONOMICS, CAPITALISM

WAR AND CONFLICT

Generation 1 Slug Match

Generation 2 Attrition

Generation 3 Movement

Generation 4 Random, Asymmetric, Terrorism

Royal Lies

AXIOLOGY

VIRTUES-TRANS CULTURAL; VALUES-CULTURAL
SOURCES: RELIGIONS, EXPERIENCE, PSYCHOLOGICAL
FUNDAMENTALISMS BELIEF AND DISBELIEF
FAITH, MYTH AND THE GREAT DIALECTIC
THE JOURNEY OF THE YEAR

Module size

SCIENCE AND TECHNOLOGY

SCIENTISM, SKEPTICISM
COMPUTERS
SPACE FLIGHT
WEAPONRY
GEOPHYSICS, PALEONTOLOGY, EVOLUTION
GENETICS

NATURE

KINGDOMS

Hills, Rocks, Lakes, Streams, the Sea
Trees, Birds, Clouds, Stars

ARCHITECTURE

CITIES, CITY PLANNING, TRAFFIC
LANDSCAPES, GARDENS

MUSIC

SCALES, CHORDS, MODES
BEAT vs PITCH

BIOGRAPHY

THE LAST PISCEAN

APHORISMS

QUOTATION DATA BASE
APHORISMS

MISCELLANEOUS

ONE DAY IN THE NEWS
LI KIANG
PHANOS

DOWNLOADS

HUMOR
POLITICS
LETTERS

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MORE ONTOLOGIES

In comparing two types of the game "20 Questions", Wheeler proposes two kinds of reality which he labels 'OBJECTIVE' and 'CONTEXTUAL'. Objective reality is plain old fashion Newtonian reality which postulates an 'absolute' world out there that exists independently of being observed by ourselves or any other conscious creature. This is the common sense ^{as well as} traditional scientific view of reality. It corresponds metaphorically to the classical form of the 20 question game. Contextual reality, on the other hand, postulates a critical role for the observer. The observer creates reality through the process of observation. This is a counter intuitive and quantum mechanical view of reality. It corresponds metaphorically to the modified game of 20 questions. (For a description of these games see Casti, Paradigms Lost p416, or Scraps 1995#27). The difference: A Newtonian objective reality is to be explored; a Wheeler contextual reality is to be created.

Whenever given two systems that appear contradictory in the framework of Aristotelean logic, my rule is: assume both are correct, put them in juxtaposition, and find a meta-system in which both may be consistently imbedded or coherently subsumed. In this case one result of applying this process is an ontology, which may be called 'SELECTION' reality. Begin by noting that in the game of 20 questions there exists in advance an available set of words from which the target word is 1) chosen by the group in the objective case or 2) evolved by the group plus the questioner in the contextual case. In both cases a prior reality, namely a set of candidate words, pre-exists. It is only the processes by which the selection takes place that differ. It follows that both OBJECTIVE and CONTEXTUAL realities are special cases of a SELECTION reality.

[Throwing out the 20 question metaphor there may still be a true Wheeler creation type ontology. But within the framework of the metaphor the Wheeler ontology is a type of selection ontology.]

How best to describe a SELECTION ontology?

One way is to look upon reality as a two dimensional terrain with human experience taking a one dimensional path through that terrain: the path being the portion of the map humans call reality. (Or with more sophistication, think of Reality as an n dimensional hyperspace with human experience selecting an (n-r) sub-space reality, where $r < n$.) In this ontology are we creating or are we exploring? Neither. We are not creating because what we encounter already exists. Nor are we exploring because we are limited to a one-dimensional path, and exploring mandates freedom to survey every portion of the terrain.

We are selecting.

Why are we limited to a one dimensional path in a two dimensional terrain? This involves two factors: 1) If the ontology is deterministic, as is assumed by classical physics, linear causality forces the path to be linear, and the place of each step on the path is determined by what has preceded. This linear causality is a consequence of the one-dimensional and uni-directional nature of time. 2) Viewed topologically, a one dimensional path of whatever length cannot cover a two dimensional domain. [cf fractional dimensions]

However, even though linear, there may be branch points on the path. Part of the inculcation of the OBJECTIVE reality we experience is that a thing cannot be two places at the same time. At branch points we have the freedom to select but cannot be served items on the menu other than the one chosen. Further, the nature of the selection process that determines the path is that in traversing certain sectors we are precluded from ever traversing others and the zones of inaccessibility increase each time a selection is made. This is not only implicit in the nature of time, as is illustrated by the cone of inaccessibility in relativity theory, but is also a consequence of the second law of thermodynamics as pointed by Szilard. (the law of hardening). A way of getting around this has been proposed by Everett who postulated 'parallel universes' in which at every branch point both the observer and the universe split allowing both branches to be taken, one branch by the observer in this universe, the other branch by a cloned observer in a cloned universe.

The SELECTION model is in accord with the nature of time as we experience it. The past is no longer accessible and the future contains choice. We might say that our temporal experience infers a SELECTION reality while our spatial experience infers an OBJECTIVE reality. (It is not clear that Minkowski's formulation of space-time can incorporate this distinction.) In an OBJECTIVE reality the statement, "You cannot get there from here" is used as a joke. In a SELECTION reality it is not a joke, it is part of the reality.

OBJECTIVE	CONTEXTUAL	SELECTION
NEWTON	WHEELER	SZILARD
EXPLORE	CREATE	SELECT

NOTES: In addition to the above ontologies, we have PARALLEL, MULTIPLEXED, and SERIAL (in the sense of Dunne) ontologies. If multiplexed universes are cloned as are parallel universes, then the period between 'time on stage' for each universe monotonely increases. What consequences of this become observables? redshifts? second law? expanding universe?

Aristotle Organon ^{Boole} Nouv. Organon ^{Descartes} - diagram & la Methode

COGTRY.WPD

March 20, 2003

AN OUTLINE OF REASONING

Nineteenth Century:

An amusing children's story was written about 1860 by an English logician and clergyman, Charles Dodgson. In this story strange ways of thinking were described Humpty Dumpty's "a word means just what I choose it to mean...: Absurd dialogues

About the same time another logician, George Boole developed a symbolic way of representing logical propositions.

Venn? 1880. LOGICAL DIAGRAMS

Twentieth Century

1912 Russell and Whitehead attempted to clean up logic. Eliminate paradoxes from thinking process

Hilbert, clean up mathematics show it is the correct representation

20's Logical Positivism and the Vienna Circle Language would be made the perfect tool for correctly representing reality

Gödel's Incompleteness Theorems

Wittgenstein's second phase: "Language Floats" ↘

Popper's falsification in question w probability replacing true/false 1:0

George Orwell's 1984 In the tradition of Lewis Caroll^g turning meanings upside down peace = war, spend = save, etc

The development of spin by fascist and communist masters. Goebels^b, Stalin, Mao,

Spin comes to democracy, largely through advertising

Twenty First Century

Spin becomes a science. Transforms politics. Karl Rove

Manipulation of language perception

The uses of fear and uncertainties

The triumph of labels

label thinks

Group Think

Words emancipated from meaning

George Bush

TIME

RENEISSANCE RENAISSANCE, RENAISSANCE, era of LACTEIL 18th Cent. Einstein, Watson et c

WHAT IS CERTAINTY?

Ever since the concept of probability began to play an important role in physics, the foundations for models of the universe based on causality, determinism and predictability have gradually crumbled. The clockwork world of Newton and Laplace has given way to the casino world of Schrödinger and Heisenberg. What quantum mechanics introduced, chaos theory and complexity have continued. The titles of recent books such as "The Search for Certainty" (1990) and "The End of Certainty" (1997), mark the passing of a paradigm.¹ Einstein's "God does not play dice" was uttered from the decks of the Titanic of classical physics.

Centuries have passed since the Greeks abandoned the idea of a world ruled by the capriciousness of the gods and introduced the paradigm of a world based on lawfulness and immutable order. This paradigm has served for centuries, incubating and becoming the cornerstone of Western science. Its success in accounting for a large portion of human experience led to its dominate position in the temple of human idols. But there were gaps in the causal chains of determinism. These were at first denied, then ignored and minimized, and finally admitted to be paradoxes.

Among the first of scientists to take on these gaps was the 19th century physicist James Clerk Maxwell. (1831-1879) He proposed that causal chains from time to time include "a singular link", which allows the introduction of something not contained in the foregoing links. These singularities were times where determinism temporarily broke down to be replaced by randomness. In the years since Maxwell, research has shown that many causal chains contained far more singular links than had been believed. And now it has been shown that some chains contain nothing but singular links.

The concepts of 1) **causality**, determinism, or necessity; 2) **probability**, randomness, or chance; and 3) **finality**, purpose, or entelechy; have all been projected onto how the world works.² And all have played a role in attempts to bridge the workings of the world and our understanding of those workings. In the causalistic or clockwork model of the world the great test of our understanding has been based on **predictability**.

¹The Search for Certainty, John Casti, Morrow, 1990
The End of Certainty, Ilya Prigogine, Free Press 1997

²In Eastern and Western religious traditions the roles of thought, belief, and Divine Will in how the world works have been assigned a major part. These components to date have been largely ignored in Western philosophic and scientific approaches.

Some Observations on the English Language

During the past century English has become the global language. There are several reasons for this: A consequence of the once wide spread British Empire; The growth of world wide trade with English being recognized as the language of business; The built in efficiency of English, its ability to put across the same message with fewer words in a smaller space; The large size of the English vocabulary. With the present global dominance of Western culture, it is fair to say that, English in being the representative language of this culture, English is the most Western Language.

*also
openness to
imports and
neo-legis mo*

All of the above seem to be pluses, especially in the view that the development of a single global language is a vector toward better international understanding and world peace. But there is also a minus side. In acquiring efficiency, English has lost accuracy, and worse, has lost the ability to capture profundity. This will immediately be disputed, but let us look at a few developments.

First, English, and many other languages as well, has merged the singular and plural of the second person. "You" now stands for one or for many. "Thou" is long gone. (In certain areas the singular/plural need has been met with you for singular and you all for plural.) Efficiency has been gained, but what was lost? Intimacy has been lost. There are no longer special people whom you save "thou" for. Family, relatives, friends, and strangers have been reduced to the same category. This might have been an improvement if all had become more cherished, but it went the other way. Today, spouse and family have lost their special status and it is easier to treat them as you would anybody else. Only God held out for a while. But now God has also lost the intimacy of "Thou". God and all others have been democratized into a common pool. I--Thou has been replaced with me vs everyone else.

Second is the matter of doing away with case endings. (The word "whom" has disappeared from English in my own lifetime.) The greatest source of gain in efficiency for English has probably been the homogenization of case endings. But there has been a price: loss of accuracy and flexibility. If nominative and objective are merged then it is left to word order alone to convey the meaning of a sentence. And this is a load that word order cannot always carry. Inflection is a "second dimension" to language, allowing a richness of expression not available to one dimensional word order. And a language whose cases have been homogenized limits poetry whose need for flexibility in word order is essential.

penalizes

Finally, we come to the matter of the various moods of verbs. The Table gives us a brief review of the moods, their domains, and their use.

MOOD	REFERENTIAL DOMAIN	USE
INDICATIVE	THE OBJECTIVE AND FACTUAL	DESCRIBE REALITY
SUBJUNCTIVE	THE CONTINGENT AND POTENTIAL	CREATE POTENTIAL
IMPERATIVE	THE INJUNCTIVE AND EXHORTATIVE	CREATE REALITY
INFINITIVE	THE REFLEXIVE, SELF REFERENTIAL	ENTIFY PROCESS
EXCLAMATORY	THE INTERJECTIVE, INTERRUPTIVE	ESCAPE HATCH

The moods of verbs reflect metaphysical pictures of the world. Pictures that entertain not only an objective reality but also possible and preferential realities. These moods have been present in languages for millennia and reflect a linguistic approach to a richer world than we subscribe to today. Evidently language follows worldview and the decline of the subjunctive mood in English parallels our acceptance of the world as consisting of a single materialistic deterministic reality. The disappearance of the subjunctive, that is of the worlds of could be, would be, ought to be, leave us with only an "is world" devoid of choice and eventually of hope.

In summary, since we think in words, our erosion of English will in due time limit the thoughts we can express, muddy accuracy, corral flexibility, and reduce the alternatives that would otherwise be available to us.

Postscript

But there is another result to declaring all cases to be created equal. The distinction of subject and object in language reflects a perception of reality that has been basic to the way humans view themselves and the world since the cave days of "ME TROG, YOU DOG". The nominative-objective discrimination of observer and observed and actor and acted-upon has historically shaped epistemological and ontological thinking to the point that the encounter with quantum phenomena in the twentieth century created metaphysical chaos. The quantum world in which the observer was part of the observed and the observed was part of the observer didn't fit with the structure of the languages with which we think. Whether the current merging of nominative and objective is a result of quantum discoveries, or the changes in English are anticipating the need to be able to think differently about reality, we cannot be sure. But either way both language and reality are changing and showing us how intimately they are interconnected.

DIZ FOCUS 2.

We connect the points to display a pattern, i.e. something familiar. And familiar because of frequent repetitions. We recognize a pattern because it has happened often before and is in our memories and records. [a discrimination here is important between memory and record]

But how do we recognize a picture? [in contrast to a pattern]

We here postulate a human capability which we shall call, recognizabilty . Even if never seen or perceived before we have stored in us either a set of pictures or the ability to recognize a certain genre of pictures. [this gets into deja vu and how we recognize things we have not experienced, that are not in our memories. One hypothesis is reincarnation, memory from a previous life] **But at the root of all human knowledge, at root of empiricism, deductive systems, inductive systems, logic, even mathematics is *RECOGNITION*.** Our ultimate validator and filter.

We have many other filters such as, consistency, predictability, reproducibility,,, but all lead only to one or at best a subset of pictures. And even human recognition is probably limited to but a subset, but it is our largest accessible subset.

Initially we experience frequent repetition. This gives us our "foundation" patterns on which we build all subsequent knowledge. One tool would be to morph the familiar patterns. But this is what the manifestations of archetypes are, morphed settings of a single plot.

UP DATED INTRODUCTION
To Styles of Thinking

The analyses of the recent election have centered not only on the candidates, their personalities and records, but on balloting, numbers of voters, minorities, vote counting, and voting machines. But looking beyond the mechanics of campaigning and voting, some analysts have studied the map with its red and blue areas and sought to explain the results on a psychological level in terms of fears, ideologies, and values. They hold that the vote reflects what people feel and think. That is tautological. The analyses should go further, beyond what people think, to how people think. When people have the same inputs but come to different conclusions, what they think must have something to do with how they think.

Ideology may have as much to do with the “how of thinking” as with experiential inputs. Ideology is also influenced by “group think”, our thinking conforms to what the majority of those around us think. We see on one side in the election, simplistic black and white thinking, the us/them, good/evil, style of thinking typical of one of the candidates. That this simplistic style of thinking was challenged by majorities in blue zones indicates that there ~~does~~ exist different kinds of thinking as well as different specifics in what we think. It may be that living in high density urban areas requires more sophisticated thinking, the need to come up with more alternatives, (e.g. the need to know alternate routes when there is a freeway gridlock), than are required in the low density red prairie lands.

<p>THE HUMAN MIND, EXCEPT WHEN GUIDED BY EXTRAORDINARY GENIUS, CANNOT SURMOUNT THE ESTABLISHED CONCLUSIONS AMID WHICH IT HAS BEEN REARED. -WINSTON CHURCHILL</p>
--

Another factor revealed in the election is the role of certain religious beliefs. Whether the profound teachings of various religions have been intentionally “dumbed to the dyadic” in order better to control membership or have of necessity been designed to fit an existing low level of intelligence of the membership, the result has been millions of simplistic thinkers. My own persuasion is that simplistic thinking is not ingrained, it is inculcated. Of course, this paragraph raises another issue, the arrogance of elites who pretend to be able to analyze human thinking.

*why do we believe
winning - validates*

C88

~~COGNITION~~ WPD
NOVLOGN.

DRAFT

DECEMBER 13, 2000

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
 - Involves conceptualization
- II Data Organization
 - Involves infrastructures or paradigms
 - Involves filtering and signification
- III Data Processing
 - Involves reconceptualization
 - Involves representation
 - Involves aggregation and de-aggregation
- IV Interpretation of 'packages', concepts and theories
- V Evaluation and Implications of the 'packages'

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.

-serendipity

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 Hofstaedter 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 emptyness 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.

COG

THE NEW PARADIGMS

The new paradigms of thought and values [Einstein Quote]
from Belonging to the Universe

Fritjof Capra's five new paradigms (from Belonging to the Universe)

- Parts ---> Wholes
The interdependence of all phenomena and their embeddedness in the cosmos p70
- Structure ---> Process
- Objective ---> Epistemic
The epistemology selects the universe
Constructivism as the new epistemology p124
The observer is a necessary part of the observation
What we observe is not a world that exists objectively and is then represented, but rather a world that is ^{selected?} created in the process of knowing {[the cognitive operator]}
- A building ---> A network as metaphor for knowledge
No up no down, no foundation, no primaries, only network
{[What about islands and continents?]}
- Truth ---> Approximations

Other changes mentioned by Capra

- Rational ---> Intuitive
Rational is the compartmentalized, the categorized
- Analysis ---> Synthesis
- Reductionism ---> Holism
- Linear ---> Non-linear

Thinking and values are intertwined. Consequently new paradigms of thought will create new values. p74

- Self assertion ---> Integration
- Competition ---> Cooperation
- Expansion/Growth ---> Conservation/Sustainability
- Quantity ---> Quality
- Domination ---> Participation

Other developments: "The Great Dialectic" p125

Two Systems Schools von Neuman input-output, information processing
Norbert Wiener cybernetics, self-organizing

page two

Other Paradigm Shifts

- Zwicky-McLuhan Multiple Model Approach
 - Listen to more than one composer's music
 - Mystery does not allow an orthodoxy
- Parallel Computing
 - The end of linear, sequential, mono thinking
 - The end of monotheism (---> pan-entheism)
- Pluralism
 - Tolerating and valuing differences
- Facetism, Complementarity, Aspectism,
 - Defacetize vs. generalize and abstract
- Whyte's Patternism
 - Pattern, Structure, Process
 - Information, Matter/Energy, Will
- Einstein's Absolutes ---> Invariants
- McLuhan's Suspended Judgement
- Thompson's Juxtaposition
- THE ROLES OF ANALOG AND DIGITAL
PLATOONING (e.g. clothes-washing)

add
Leonardo da Vinci

MYSTERY AND PUZZLE

Primitive peoples looked on their world as a Mystery: The hidden, unexpected and unknown were inextricably mixed with the visible, regular and predictable. With millennia of experience, people changed and began to look on the world they had inherited as a puzzle: Most of the pieces were available, how to fit them together was understood, the borders were in place, but the picture was not yet completed. While the Mystery was vast, uncontainable, and open in countless directions, the puzzle is large but measurable, contained within finite dimensions, and obedient to known laws. Only in each being one amalgamate, were the Mystery and the puzzle the same.

Over millennia the religions of mankind have attempted various constructs to explain parts of the Mystery and make the whole more comprehensible. In the West, some of these constructs bounded the Mystery, became dogma, and gradually lost the power of the Mystery to inspire. In the East, some of the constructs remained open but only sat in wonderment before the Mystery, venerating its power, but leaving it unexplored. Then came Science. Science chose a middle path. It would not sit in wonderment, it would actively explore. It would not close to a dogma, it would remain open. But to explore effectively, Science unconsciously violated its commitment to openness and created a dogma, not a dogma of fact, but a dogma of method. not an ontological dogma, but an epistemological dogma. The result was the replacement of the Mystery by a puzzle.

While the puzzle may be solved by the scientific method, the Mystery is too great to be encountered by any single methodology. The Mystery asks "What is time". The puzzle boxes time into Minkowski's space-time and answers the Mystery question by telling us, "Time is what is measured by a clock". So even with the puzzle completely solved, only a small portion of the Mystery will have been explored.

It is fitting that we transcend our inclinations to monism, to single dogmas, single methodologies, single epistemologies, [ein Volk, ein Reich, ein Führer] and be open to alternatives. This requires that we develop criteria by which methodologies can be authenticated.¹ Gödel's incompleteness theorem has demonstrated that there exist valid propositions beyond those deducible logically from axioms and postulates. The history of discovery has repeatedly illustrated the value of intuition. There are countless cases of synchronicity and serendipity opening up new vistas. No longer should we delegate the approach to the Mystery to any single religion, methodology, or epistemology. It will require maturity to sustain paradoxes and contradictions until resolved by deeper understanding. But then why do we keep insisting that the Cosmos be subject to our laws of logic?

¹This, of course, leads to an infinite regression. Criteria by which to authenticate the authenticating criteria, and meta-criteria by which to authenticate

NEW COGNITIVE STRATEGIES

4) The value of error and imperfection:

Imperfection gives a distorted but useful alternative view. While it might be labeled 'wrong', it nonetheless affords a profitable input. The task is to escape the practice of equating dogma with perfection.

Perception does not give a homomorphic representation of the universe, but a distorted isomorphic representation. —R.W. Gerard

5) The systemization of values: The construction of alternatives requires a set of values to facilitate their selection or rejection. The task is to find criteria for establishing such values, and meta-criteria for establishing the criteria, ...

A theory is the more impressive the greater the simplicity of its premises, the more different are the kinds of things it relates, and the more extended its range of applicability.
— Einstein

This sketch of Zwicky's morphological analysis presents the case that before we can construct a really new methodology we must challenge, disbelieve and set aside what we have

so far found. Instead of building on the past we must liberate ourselves from the past. This does not mean that in the end we shall not come again into agreement with what the past has found, but it promises that if we do we shall see it with greater understanding.

Besides Zwicky and Einstein's proposals for values, Boorstin has proposed: 1) Accuracy, 2) Simplicity, 3) Comprehensiveness, 4) Explanation, 5) Prediction, 6) Economy, 7) Usefulness, 8) Stepping Stone. Or as some others have proposed: Fruitfulness for future models, Precision, Consistency, and Elegance. Now what is needed are criteria for selecting and ordering these and other values.

psychological rhythms of living organisms. Science recognizes some of the correlations, but rejects causal linkages. The ExCaus approach postulates a third external source of cycles which supplies the zeitgeber for both planets and biorhythms.

- STOCHASTIC THINKING
Fuzzy sets
- SERIAL THINKING
Linear, one level, and inferring a deterministic infrastructure. The basic format of most pedagogy and stories. The essence of our worldviews re evolution, history and progress.
- PARALLEL THINKING
Both horizontal (independent modules to be used in juxtaposition and assembled into any meaningful congeries or hierarchies) and vertical (parables and multi-level stories).
- ASSOCIATIVE THINKING
- METAPHORICAL THINKING
- EXPANSIVE-CONTRACTIVE THINKING
- PEDAGOGICAL THINKING
- HISTORICAL THINKING
- HEURISTIC THINKING
- CONTEXTUAL THINKING
- TOP DOWN THINKING
- BOTTOM UP THINKING
- INDUCTIVE THINKING
An asymmetrical method which is restrictive in validation but conclusive in falsification. (Popper)
- SERENDIPITY

COG

REPEAT.W52

January 11, 1994

ON REPETITION INDUCTION VS. DEDUCTION

The sage Li Kiang once said, "I was not convinced by the logic of the argument, but I was persuaded by the repetition of the argument." Whether Li Kiang was merely confirming the basic tool of the advertizing profession or stating that the persuasive power of induction is superior to that of deduction, is not known. Maybe he meant both, or neither. But it is true that repetition carries more impact for most of us than does logic. Perhaps this is because we came to the truth that the sun rises every morning through repetition of the act, not by logic. (Later through logical arguments the repetitive rising of the sun could be "explained", but even so, the explanation was based on postulates having their origin in repetition.)

Another point, repetition is more inclusive than logic. Logic suffers from its built-in constraint of consistency, while what is repeated need not be consistent with anything else that is repeated. Thus induction allows the acceptance of a larger world than does deduction. And induction's world does not allow itself to be forced into the bottle of consistency: **Ein Theorie, ein Entwurf, ein Gott.** We conclude that Logic is not the best epistemological tool for encountering this world.

There is an ancient Persian proverb that states that there are two kinds of truth: Truth established by repetition, and truth independent of repetition. One kind requires perpetual repetition to preserve its status as truth, the other kind is true without any fenestrations. [Which kind is this proverb?] But here we must use logic to keep from falling into a trap. We must discriminate between what or who is doing the repeating. Repetitive sunrises establish a physical truth or law. Repetitive advertisements establish "Pavlovian" truths, truths imbedded in the mind of a beholder, but not necessarily existing elsewhere. That natural truth derives from repetition may lead us to infer that repetition per se will always manifest such truth. But this is inductively not so. Every set of repetitions does not lead to objective truth, some merely transform the observer into Pavlov's dog. Granting the truth of the Persian adage, How are we to know which inductive truths are objective, which subjective. We concur that repetition, or persistence, has the power to transform, and hence that repetition either reveals

what is or guides what becomes: present truth or future truth.

Science deals with repetitively established truth. It is based on reproducibility, a species of repetition. In general what is not repetitive is beyond the ken of science. This raises some interesting questions with regard to scientific cosmology. If there exists but one universe and its origin was a one time big bang, lacking repetition, the universal lies outside the ken of science. For science to deal with cosmology, the universe must be either fractal-like, that is repetition of the originating process occurring repeatedly but on different scales, or there must be multiple universes of some sort.

ADS

ALTERNATIVES

THE FIRST ALTERNATIVE:

The first alternative is to pursue alternatives rather than pursue what has traditionally been called The Truth.

The concept of "Truth" as an obtainable inclusive homomorphic representation of the world formulated in anthropomorphic ^{symbolic} terminologies derived from anthropocentric viewpoints is a chimera that has directed human intellectual activity throughout history. In one of its latest manifestations it is called "A theory of Everything". The pursuit of Truth makes the assumption that human experience can encompass a sufficient set of phenomenological events that when processed by our particular mode of thinking the product will be a valid model of the universe. But the point to be made here is, not that a valid model is not a desiderata, but that instead of focusing on trying to perfect one model, our pursuit should be to find as many valid models as humanly conceivable. ^{what is the range of their validity?} And in the immediate situation, the task is to support ^{with} this proposition with as many alternative arguments as possible. ^{with the heavy prose approach} [The heavy prose approach, This could be made even heavier but that would require German.]

SOME THOUGHTS ON THE 67TH ANNIVERSARY OF KRASNIK

see also
1993 #6
1999 #3

THE PHYSICIST AND THE SHAMAN

In the physicist's toolbox are items called *vectors*. These are mathematical entities consisting of two parts, a magnitude and a direction. A vector, V , is frequently represented by the formula,

$$V = M e^{i\theta}$$

Where M is the magnitude and θ is the direction. For example, if we are in Washington, then the distance to New York is $M = dd$ miles and the direction $\theta = aa$ degrees east of north. If the **direction** part of a vector, (θ in the equation), is equal to zero, then $e^{i\theta} = 1$, and the surviving magnitude M , called a *scalar*, is still a useful meaningful quantity. . [The numbers we deal with every day in commerce, finance, construction, politics, etc are scalars. No direction involved.] However, if the **magnitude** part of the vector is equal to zero, then according to the way physicists think, $V = 0$, that is the vector itself is zero, and θ , whatever its value, also vanishes. In such a "zero vector"; direction in the absence of distance retains no meaning.

length

Counter to how the physicist views the "zero vector", the shaman holds that even if $M = 0$, the vector still has valid meaning. Indeed, the shaman's practice makes use of the directions implicit in zero vectors. American Indians hold that the various directions, east, south, west, north have special spiritual meanings, there being no need for distances to be involved (M not necessary). Every morning the Hopi shaman goes to the First Mesa and faces the direction in which the sun will rise, to help the day to be born. The distance to the sun is not a factor. When they pray, Muslims face in the direction of Mecca wherever they are. Direction is the essence, distance is not involved. In the past, Christian churches were always oriented so that the high altar was to the east, no distances involved. Some hold that for health reasons we should sleep with our heads to the east. And according to some religions proper burial places the head to the east. And in the Chinese practice of Feng Shui direction (sans distance) is of importance. Shamanism and derivative religious beliefs recognize the meanings that reside in direction independent of any vector magnitudes that may or may not be involved. In fact it is held that only when $M = 0$, only when the materialistic scalars are out of the way, do the spiritual essences of θ clearly emerge.

It has been found that bees also deal with vectors, with direction and distance. Karl vom Frisch, a Swiss entomologist, studied the ways bees communicate the distance and direction of a pollen source using a dance whose orientation to the vertical gives direction and whose width indicates distance (the narrower the more distant). If the distance to the food source is small, as M approaches zero, the widening of the dance obliterates the direction signal and the bee is confronted with a zero vector in which direction still ~~has~~ is the important information. The bee then switches to a different dance, a "zero vector dance", that gives the direction to the near by source.

Shamans and bees understand that if $M = 0$, then $V \neq 0$, something physicists and mathematicians may want to rethink.

Actually $M \rightarrow 1$ and $V = e^{i\theta}$

The bee must change its dance at $M=1$

A fulcrum

Is there orientation
in H-SPACE?

A fact, an ~~is~~, no direction involved

A value, a direction is involved
which way do we face?

$e^{i\theta}$, the spiritual θ 's of the shaman
are θ 's of our value systems.

cf. John Williamat RAND re car. passenger miles and deaths

$$Me^{i\theta} = e^{R+i\theta}, e^R = M$$

$$\text{IF } R=0, M=1$$

$$R=-\infty, M=0$$

02/01/15

Exercise: Rotate a place. Let East become South
South .. West
etc., etc

• Rotation

The "feeling" of the place changes.

What is it that changes? feng shui?

• Translation

Sometimes when moving: The world takes on momentarily
a different aspect. It is translated to another realm.

• Time

The gloaming, Kairos

All are subtle but real, repeated, but not intentional

Science: Not only repeatable, reproducible, but intentional

BRAHMAN

When Brahma created the universe, Brahma posited Brahman, the Theme upon which all subsequent creation was to be based. Brahma knew the Alpha, the beginning and Omega, the ending of the Theme. But what Brahma did not know, and why he made Brahman, was to find out all the possible variations that could occur within the Theme. When the Theme and all the occurring variations have been played, then Brahma will create a new Theme. And on and endlessly on.

We observe, experience, and create variations on Brahma's Theme, but we only have glimpses of the Theme itself. Mostly the glimpses come to us when we encounter a limit or a boundary. These limits tell us what can and cannot exist within the Theme. From our customary way of organizing experience, we are most likely to interpret the Theme in terms of vector-like elements and the rules by which they are to be combined. Where by **vector** is meant an element possessing both a magnitude [scale] and a direction [dimensionality].

Physics suggests that a probable set of elemental vectors would include:

\hbar , Planck's constant; G , Newton's gravitational constant; c , the velocity of light; and S , the electric/gravitation force ratio. The dimensionalities of these are:

$$[\hbar] = [MR^2/T]; \quad [G] = [R^3/MT^2]; \quad [c] = [R/T]; \quad [S] = [1] \text{ (i.e. dimensionless)}$$

{Refinements may require the inclusion of α , the fine structure constant, and μ the proton/electron mass ratio. Both are dimensionless.)

Two limits are held to be valid:¹

- 1) The Einstein limit: All velocities are less than the velocity of light, $v \leq c$
- 2) The Heisenberg limit: The product of time and energy must be greater than the Planck constant. $E \times T > \hbar$ Or the product of momentum and position must be greater than the Planck constant. This is at root the "uncertainty principle".

From the Einstein limit may be derived two other limits: (numerical values are \log_{10})

Force: The maximum possible force has the value c^4/G $[MR/T^2] = 49.082989$ dynes

Power: The maximum possible power has the value c^5/G $[MR^2/T^3] = 59.559810$ watts¹

These are predicated on the presumption that all velocities are $< c$, but may be formally derived.

From 2) and the power limit, c^5/G , may be derived $T > \sqrt{\hbar G/c^5} = -43.268366$ seconds, which is the Planck time. Or for frequencies, $v < 43.268366$ hertz

¹ Also there is the Schwarzschild bound, $M/R = c^2/G$, more a watershed than a limit

² The peak bolometric luminosities of supernovae have been observed to have a value close to this amount.

historical $\frac{dP}{dt} \propto P$

cyclical $\frac{d^2P}{dt^2} \propto P$ January 29, 1993

HISTCYCL.P51

All processes of change contain two components: a linear or historical component and a cyclical or archetypal component.

Cycles have been conventionally represented in electrical theory by vectors. The length or magnitude of the vector representing amplitude, the direction or angle representing phase. One common way of representing a vector is in the exponential form:

$$V = e^{(\alpha t + i\omega t)}$$

In the complex number, $\alpha t + i\omega t$, the real part represents the linear or historical facet of the process while the imaginary part represents the the cyclical or archetypal facet of the process. The period or duration of the cycle is given by $t = 2\pi/\omega$. For the "historical" portion of the change to be actually linear, αt must be equal to $\ln(At)$, that is

$$V = Ate^{i\omega t}$$

This equation may be generalized by replacing the linear functions αt and ωt with the general functions $\alpha(t)$ and $\omega(t)$. Thus

$$V = e^{[\alpha(t) + i\omega(t)]}$$

represents the general equation of change.

The historical rate of change will be the real part of the derivative,

$$\dot{\alpha}(t) [e^{\alpha(t)} + \cos \omega(t)] - \dot{\omega}(t) \sin \omega(t)$$

The archetypal rate of change will be the imaginary part of the derivative,

$$\dot{\omega}(t) [e^{\alpha(t)} + \cos \omega(t)] + \dot{\alpha}(t) \sin \omega(t)$$

Ratio of the length of the Journey cycle = \mathcal{Q}
Engine cycle

In our experience $\mathcal{Q} \gg 1$

but can we find cases of $\mathcal{Q} < 1$?

Perhaps what we see as $\mathcal{Q} \in \lambda \sigma$ is
cases of $\mathcal{Q} < 1$ Design

EVOLUTION AS CYCLIC PROCESS

In the five successive extinctions of bio-history, the highest forms that evolved in each case disappeared, yet the bio-system does not return to square one. Each cycle of extinction/radiation leads to organisms of greater complexity, yet the genomes of the highest forms are not preserved. What then is preserved in the evolutionary process that is transmitted from cycle to cycle that enables evolution to reach new levels of complexity? What ingredients are enhanced at each cycle? What inhibitors are removed? Is it the power of self-organization that is enhanced? A power that allows more rapid development. Is it that greater variety exists and variety is the key to complexity? What characteristic, aside from complexity (which is not satisfactorily defined), increases from cycle to cycle? May we say that it is consciousness?

And turning to cultural evolution, what causes an extinction? What is lost and what is preserved? The great cultural extinction/radiation of c 500 B.C.E. (Jasper's Axial period) appears to have been caused, not by an asteroid, but largely by the introduction of writing. The effect of this was the liberation of the intellect from the necessity of memorization and oral transmission. The preservation of the culture and its records could be trusted to writing and human mental activity could turn from its focus on memory to focus on imagination resulting in enhancement of creativity and innovation. This has resulted in accelerated cultural change during the past 2500 years leading us now to a new cycle of extinction/radiation. The 20th century marks another axial period. We suspect that it is writing and the written record that is itself now being replaced. This time the "asteroid" of extinction is the computer. ^{the internet} Such facilitating powers as hypertext and morphing extend (or possibly replace) imagination. Hypertext allows the permuting of linkages and associations. Morphing allows the permuting of images and forms. If a world view is basically a set of mutually supportive associations and images, then instead of a single world view the computer can construct innumerable alternative sets of associations and images and create for us a smorgasbord of perspectives. The age of one solution, one answer, one ontology, one epistemology, one theology, one science, ...is ending. In the next radiant multiple approaches and paths will emerge. The human intellect will again change focus, this time not from memory to imagination, but from imagination to evaluation. We leave the mono-world of "this is how it is" and enter the multi-world of "if this, then this". Our human task, not ascribable to computers, will be how and which world do we select?

*The growth of potential will exceed that of realization
- H. Rahm - Reality has outstripped experience*

What commonalities are perceived in all of this? The ever increase in variety seems to be one factor operating in both bio and cultural evolution. And variety provides the building blocks both for complexity and for more variety. And possibly an on going increase in consciousness, an entity that we may not view as "a thing out there" because we ourselves are part of it and it a part of us.

This scrap resulted
from a dialog with
Sha-Tzu.

In first axial period (the "Jaspers 1")
Symbols replaced memory
Symbols replaced visualization

What increases?
variety
options
potential

What is optimized?

SEASON # RE-RUN
↓ ↓
D CYCLE

IF SEASON ≠ 0
HAVE RECURSION

The nature of "Jaspers 2"

Jaspers "0" up to 600 BC

AN OUTLINE OF REASONING

Nineteenth Century:

An amusing children's story was written about 1860 by an English logician and clergyman, Charles Dodgson. In this story strange ways of thinking were described
Humpty Dumpty's "a word means just what I choose it to mean...:
Absurd dialogues

About the same time another logician, George Boole developed a symbolic way of representing logical propositions.

Venn?

Twentieth Century

Russell and Whitehead attempted to clean up logic. Eliminate paradoxes from thinking process

Hilbert, clean up mathematics show it is the correct representation

Logical Positivism and the Vienna Circle Language would be made the perfect tool for correctly representing reality

Gödel's Incompleteness Theorems

Wittgenstein's second phase: "Language Floats"

Popper's falsification in question

George Orwell's 1984 In the tradition of Lewis Carols turning meanings upside down
peace = war, spend = save, etc

The development of spin by fascist and communist masters. Goebbels, Stalin, Mao,

Spin comes to democracy, largely through advertising

Twenty First Century

Spin becomes a science. Transforms politics. Karl Rove

The uses of fear and uncertainties

The triumph of labels

THE BACKLASH OF SCIENTISM

The cry against what are viewed by some scientists and professional skeptics as trends toward irrationality and illogic have taken the form of a crusade against all alternative approaches to knowledge but that encapsulated in the "scientific method". These zealots ~~are~~ oppose ~~to~~ allowing on the table facts, events and observations that are inconsistent with the dogmas developed by science in the past two centuries. They lump innovative initiatives, alternatives, questions concerning the limits of conventional logic and reasoning with fundamentalism, gullibility, and superstition. They attack the new by packaging it with the old, attack the future by bundling it with the past. Both are to be kept off the table to protect the current dogmas of scientism.

That which is threatened by replacement, challenged by alternatives, does not reply by refutation but by repression.

cf selective skepticism

THE EPISTEMOLOGY-ONTOLOGY LOOP

Previous scraps have emphasized that an ontology is determined by an epistemology. Others have emphasized that an epistemology is given to us by our ontology. Both of these approaches are valid. What we are determines what epistemologies are available to us and the epistemology we use determines our view of what we are and what the world is.

or maybe more than view, actually what we are

The set of epistemologies that are available to humans is bounded by (or contained in) an ontology. We are delimited by what we are, by our hardware, by our stage of biological evolution. We are limited to the tools and knowledge we possess, by the stage of our cultural evolution. We are delimited by what we believe we are, by our software, by the level of our spiritual evolution. But within these ontological boundaries there exists a set of available epistemologies. We can develop and employ one (or more) of these epistemologies from the available set and this (these) will give us an ontological facet(s) of the World. But this facet (or these facets) are but a sub-set of the World. Even a subset of our primary bounding ontology. Hence the ontological -->epistemological-->ontological loop is a contractive one. What we assume the World to be--our ontological picture--is doubly limited by a primary ontology and a selected epistemology. A belief set is the product of an epistemology and our set of beliefs delimits the set of experiences we have, which in turn shapes our ontological picture.

So where do we go from here? It behoves us to explore every available epistemology in order to acquire as many ontological facets of the World as possible. We can only hope that from the set of facets we may be able to glimpse beyond the primary bounding ontology.

An epistemology has two aspects. It is a vessel into which to put our experiences and it is a process, including filters, of collecting what we put into the vessel. Our task is to search for the largest possible vessel and to become aware of the filters we are using.

MORE ON EPISTEMOLOGY AND ONTOLOGY

It is surmised that the appearance and properties that the world manifests depend on the choice of epistemology used for exploring the world, a different ontology being manifested by each epistemology. Two examples from physics are to be noted.

In the theory of relativity the separation between two events in spacetime, usually called the interval, depends on the inertial frame of reference that is chosen, different frames leading to different intervals. Here the selection of an inertial frame corresponds to the choice of an epistemology.

A second example, this from quantum physics, notes that the manifestation of light as a particle or as a wave depends on the selection of the experiment to be performed, one type of experiment causing light to manifest as particle, another type as wave. Here the selection of the experiment corresponds to the choice of an epistemology.

One important inference from all of this is that the world is much richer than can be exhibited by any single epistemology, (which smacks of Gödel's results in mathematics). If we adopt Kant's dyad of phenomena (that which is manifested or can be experienced) and noumena (that which is hidden and beyond being experiencable) then we may say that

Phenomena/Noumena = f(epistemology)

that is, what is manifested and not manifested is a function of the epistemology. For this reason some ^{label} term the manifestation of any particular epistemology an **illusion**.

A second inference from this is that the World itself, the multifaceted World each of whose facets we call a world, is unknowable. Only the World's response to particular epistemologies is knowable. To construct the World from the set of these responses is impossible until we know the totality of facets. This is analogous to the situation in relativity where the geometry of spacetime is unknowable, there only being inferences from clocks and rods.

Thus all worldviews (or ontologies) are but interpretations or inferences from our epistemologies (or organizing frameworks).

*The human body is an organizing system for experience - Ed
i.e. it is an epistemology.*

*The practice [any practice] is an epistemology
(or meta-epistemology)*

Rituals are epistemologies

Psycho is an epistemology

1990 # 14
1995 # 51
1997 # 21

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'."

by A.W.

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 iteratable. 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.

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]

AN ONTOLOGICAL SKETCH

This is an attempt to sketch some ideas concerning the nature of the physical world, and by analogies the nature of some of the other worlds in which we humans have experiences.

The first proposition:

The world is discrete not continuous.

This applies to space, to time, and to almost every parameter. The continuous is an illusion. Given sufficient resolving power, the continuous is seen to be broken. The universe is structured fractally; at the base is Planck's constant, the monad of discreteness. Everywhere thingness is divided by nothingness. Thingnesses are separated by nothingnesses.

God divided the light from the darkness. God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters. God called the firmament Heaven.

So we come to,

The second proposition:

The world consists of thingness and nothingness *of something and nothing*

Nothingness is as important in the totality of the world as is thingness. Ontology is the study of existence and reality. There must be a symmetric study of "nontology", of non-existence, emptiness, and nothingness. As there are many varieties of things, there are many varieties of nothingness

Getting more specific,

The third proposition:

Existence occurs at certain singular points in the sea of nothingness

What exists is pre-established by an ontological template consisting of several dimensions and scales. The pattern of the template manifests itself on many scales and each of these manifestations is isomorphic to the others. What is *possible* is determined by the ontological template. What *exists* is determined by additional factors. Many of the possibilities may not be realized at a given time, some may never be realized.

A meta-proposition:

Each universe has its unique template which governs all systems and sub-systems contained in that universe.

The template of the universe in which we live is constructed around the specific values of the fundamental constants, G , c , \hbar , α , μ , and S . The set of universes to which ours belongs employs the same parameters in all its templates, but with different values of the parameters. A more general set of universes may use completely different defining parameters.

The fourth proposition:

The fundamental dynamic in this universe is the homogenization//diversification dialectic.

The dialectic consists of two basic opposing principles, one thrusting to homogenize to consolidate, to standardize, the other seeking to diversify, to fragment, to promote uniqueness. These principles interact with each other in four possible ways: 1) One force or principle completely dominating the other resulting in ever diminishing diversity [eg black hole], or the opposite, resulting in ever increasing diversity. [eg inflationary universe] 2) Alternating dominance resulting in oscillatory periods of decrease and increase [eg big bang, big crunch universe]. 3) No dominance by either force resulting in equilibrium and stasis [steady state universe]. 4) The instance remarked by Hegel, where a synthesis or emergence results from the interaction of the two principles. All change that takes place is the result of this dynamic. It manifests in many forms, such as contraction//expansion, consolidation//fragmentation, uniformity//pluralism, localization//non-localization, synchronization//noise, dogmatism//openness, etc.

The fifth proposition:

The selection of, and movement between, the existential singular points is random.

Release from one singular point permitting movement to another point (as for example a mutation) is random. However, when the random action is iterated, because of the pre-defined fixed positions of the singular points, the result appears as causality, as involving determinism. Nonetheless, the probability of the movement being to a close by singular point is much higher than to a distant point.

The sixth proposition:

Force creates form, form directs force.¹

Form is created by the action of forces on aggregates of matter. The forms in turn direct the flow of the forces. The forms of clouds are created by the forces of wind and thermodynamics. The clouds in turn affect the flow of air and its thermodynamic properties. The forces of wind and water erode hills and rocks which in turn direct the flow of wind and water. The Chinese have long noted the effect of form on the flow of Ki. This they call ~~this~~ "feng shui" 風水 [wind, water]. We have no word for the creation of form by force. We might well call it "shui feng" 水風

The seventh proposition:

Information like matter may exist in three states: solid, liquid, and nebulous.

Or perhaps more accurately, in stored form, in communicative form, and in generative form. Information is intimately connected to iteration and recursion, to modulation and making macros. It is created and built through self referencing. It has many attributes of energy, such as decaying (cf entropy) unless refreshed. Diversification enhances it, homogenization destroys it.

¹In the case of general relativity, J.A.Wheeler puts it: Matter causes space to curve, curvature tells matter how to move.

THE SUPREME KOAN

Perhaps the world's most famous koan is: *What is the sound of one hand clapping?* What is the answer? Rather than seeking an answer, we are to inquire what is the purpose in ~~the~~ posing such a question. Such koans illustrate for us that it is easy to fabricate verbal situations that are experientially meaningless. This implies that the intellect, which is constrained by its principle tool, *language*, will inevitably create illusory situations and questions that are meaningless dead ends whose pursuit goes nowhere. It has been said that philosophy, the path of the intellect, is the attempt through the use of words to solve problems which were created by words. And there is basically no assurance that these problems are meaningful. Therefore koans were designed to alert those seeking deeper insight that the path of intellectual reasoning is by itself limited. This was pointed out by the Buddhist master, Kukai, who foresaw that of the ten levels of existence (Shingon), reason could not penetrate beyond the seventh. Similarly, and quite independently, the German philosopher Schöpenhauer noted that in order to reach deeper understanding at some point philosophy as vehicle must be abandoned. And more recently Gödel's incompleteness theorem established that there were limits in axiomatic reasoning, there were truths beyond those which could be logically derived and proved.

Many have been troubled by the Madhyamika doctrines of the Indian teacher Nagarjuna, that independent existence is unreal, and even that both existence and non-existence are illusory. The pursuit of Madhyamika ultimately leads to nihilism and total meaninglessness. If koans are to redirect our path from the confines of rationalism, can we consequently conclude that Nagarjuna was fabricating a koan, indeed **the supreme koan?** If so he has constructed a koan of such complexity that it invites continued intellectual exploration that would defeat its purpose as a koan. The best answer in this case might be found by following the strategy developed by the late Herman Kahn of nuclear war fame.

"So, Master Nagarjuna, you claim that nothing exists, all is an illusion. OK, we won't dispute that. Let's grant that all you claim is correct, and see where we go from there. We are living in a world, granted that living is an illusion and the world is an illusion, where we must make illusory decisions but still are accountable for these decisions. So it is like being on a movie set, it is all about illusion. But still we have to do the several things required to make this movie, knowing all along that it is not real. But in both real illusion and in movie illusion there is a common ingredient, and that is ^{we} are stuck with roles to play. So in effect the nature of reality, whether it exists or is illusory makes no difference, it is the script that counts. It follows that choices and responsibility do not depend on the ontological nature of our context, but on the structure itself of the context, be it real or be it illusory. The bottom line is, if meaning derives from relation to our context, even nihilism does not obliterate meaning."

THE PA-NO-PL-PY ONTOLOGICAL POSTULATES

In selecting basic principles of a very general nature from which the properties of phenomena can be derived, certain propositions taken from the works of Pythagoras, Plato, Noether, and Pauli, suggest themselves as possible candidates. The following four postulates are here taken as fundamental:

- ▶ 1) One does not exist. One of anything has no existence. Only when there are two or more instances of a thing does that thing acquire the attribute of existence.
---Pythagoras
- ▶ 2) In addition to the realm of physical material existence there is a second realm which contains the archetypes, templates, patterns, and programs that shape physical entities and processes.
---Plato
- ▶ 3) There is a general conservation principle governing all existence which emerges out of symmetry. For every entity that exists there is a balancing counter entity preserving symmetry.
---Noether
- ▶ 4) There is a general exclusion principle that requires that no two entities can be identical in every respect. This principle implies that every entity that exists is unique.
---Pauli

The first question is, do these postulates form a consistent set? Postulate 1) and postulate 4) appear to be contradictory. Pythagoras requires that there be at least two examples of a thing before it can exist. Pauli requires that no two things be identical. This can be resolved by employing postulate 2), which holds that everything exists in at least two realms, the physical and the archetypal. Existence in two realms would supply the more-than-one requirement of Pythagoras but would also be in accord with Pauli in that the entity in physical space is not identical to that same entity in Plato's information space. This also could be said as follows: Pythagoras would say that unless there be both phenotype and genotype there is no existence. Pauli would say that phenotype and genotype are not identical.

A second way in which postulates 1) and 4) can be reconciled is to allow multiplicity of a thing in physical space endowing it with Pythagorean existence, but since things cannot occupy the same position in physical space, their space-time coordinates would differ, meaning they are not identical in every respect.

MORE ONTOLOGIES

In comparing two types of the game "20 Questions", Wheeler proposes two kinds of reality which he labels 'OBJECTIVE' and 'CONTEXTUAL'. Objective reality is plain old fashion Newtonian reality which postulates an 'absolute' world out there that exists independently of being observed by ourselves or any other conscious creature. This is the common sense ^{as well as the} traditional scientific view of reality. It corresponds metaphorically to the classical form of the 20 question game. Contextual reality, on the other hand, postulates a critical role for the observer. The observer creates reality through the process of observation. This is a counter intuitive and quantum mechanical view of reality. It corresponds metaphorically to the modified game of 20 questions. (For a description of these games see Casti, Paradigms Lost p416, or Scraps 1995#27). The difference: A Newtonian objective reality is to be explored; a Wheeler contextual reality is to be created.

Whenever given two systems that appear contradictory in the framework of Aristotelean logic, my rule is: assume both are correct, put them in juxtaposition, and find a meta-system in which both may be consistently imbedded or coherently subsumed. In this case one result of applying this process is an ontology, which may be called 'SELECTION' reality. Begin by noting that in the game of 20 questions there exists in advance an available set of words from which the target word is 1) chosen by the group in the objective case or 2) evolved by the group plus the questioner in the contextual case. In both cases a prior reality, namely a set of candidate words, pre-exists. It is only the processes by which the **selection** takes place that differ. It follows that both OBJECTIVE and CONTEXTUAL realities are special cases of a SELECTION reality.

[Throwing out the 20 question metaphor there may still be a true Wheeler creation type ontology. But within the framework of the metaphor the Wheeler ontology is a type of selection ontology.]

How best to describe a SELECTION ontology?

One way is to look upon reality as a two dimensional terrain with human experience taking a one dimensional path through that terrain: the path being the portion of the map humans call reality. (Or with more sophistication, think of Reality as an n dimensional hyperspace with human experience selecting an (n-r) sub-space reality, where $r < n$.) In this ontology are we creating or are we exploring? Neither. We are not creating because what we encounter already exists. Nor are we exploring because we are limited to a one-dimensional path, and exploring mandates freedom to survey every portion of the terrain.

We are selecting.

Why are we limited to a one dimensional path in a two dimensional terrain? This involves two factors: 1) If the ontology is deterministic, as is assumed by classical physics, linear causality forces the path to be linear, and the place of each step on the path is determined by what has preceded. This linear causality is a consequence of the one-dimensional and uni-directional nature of time. 2) Viewed topologically, a one dimensional path of whatever length cannot cover a two dimensional domain. [cf fractional dimensions]

However, even though linear, there may be branch points on the path. Part of the inculcation of the OBJECTIVE reality we experience is that a thing cannot be two places at the same time. At branch points we have the freedom to select but cannot be served items on the menu other than the one chosen. Further, the nature of the selection process that determines the path is that in traversing certain sectors we are precluded from ever traversing others and the zones of inaccessibility increase each time a selection is made. This is not only implicit in the nature of time, as is illustrated by the cone of inaccessibility in relativity theory, but is also a consequence of the second law of thermodynamics as pointed by Szilard. (the law of hardening). A way of getting around this has been proposed by Everett who postulated 'parallel universes' in which at every branch point both the observer and the universe split allowing both branches to be taken, one branch by the observer in this universe, the other branch by a cloned observer in a cloned universe.

The SELECTION model is in accord with the nature of time as we experience it. The past is no longer accessible and the future contains choice. We might say that our temporal experience infers a SELECTION reality while our spatial experience infers an OBJECTIVE reality. (It is not clear that Minkowski's formulation of space-time can incorporate this distinction.) In an OBJECTIVE reality the statement, "You cannot get there from here" is used as a joke. In a SELECTION reality it is not a joke, it is part of the reality.

OBJECTIVE	CONTEXTUAL	SELECTION
NEWTON	WHEELER	SZILARD
EXPLORE	CREATE	SELECT

NOTES: In addition to the above ontologies, we have PARALLEL, MULTIPLEXED, and SERIAL (in the sense of Dunne) ontologies. If multiplexed universes are cloned as are parallel universes, then the period between 'time on stage' for each universe monotonely increases. What consequences of this become observables? redshifts? second law? expanding universe?

TWO SPECIES OF EXISTENCE

Such as Heaven and Earth have everlasting existence because of their "not existing for themselves".

Ch'ang Sheng (Taoist)
Dictionary of Mysticism p35

A Paradox

The only thing that can have independent existence (SAT) is that which exists for the other. For example, an epistemological framework or schema exists for its contents not for itself, but its existence is independent of what is in it.

such as

Contrast space and time. The Leibnizian/Einsteinian view is that space-time is created by its contents and is thus not independent and is therefore not SAT. The world of space and time is thus not the primordial world.

Is spacetime an example of boot-strap existence. Spacetime comes into existence only when content (matter) comes into existence. Whence matter? Is matter SAT?

What is the relation between diracean creation and SAT?

Vairacona is the diracean creator out of the sunyata.

Aksobya permits the + to exist without the -?

If + requires - to exist, as in diracean creation, then diracean creation has dependence and is not SAT. It is thus Aksobya that renders what has been dirac created into SAT. Matter and anti-matter are diracean creations, matter becomes SAT when it no longer requires anti-matter to sustain its existence. (cf quantum mechanics on this point). Returning to the above, matter is SAT while space and time are dependent on matter for existence.

*The total
A and non-A
is SAT
but A is
not SAT*

Dependent existence finds extinction in the extinction of the SAT on which they depend. SAT becomes emptiness only through union with its no-SAT. All becomes non-existence when SAT joins its NO-SAT.

*no-exist
no
non-exist
cf
David Bohm
Q circles
physical + self create*

*Boot straps existence
absolute SAT
and relative or dependent existence.
What is SAT?*

Diracean = co-emergence

*(anti-self) + self = (no-self) = 0 (but maybe energy or number)
self + (not-self) = 1*

From Casti's
Paradigms Lost p 416

OBJECTIVE AND CONTEXTUAL REALITY

To get a glimpse of what's involved in this wholesale revamping of our concepts of physical reality, there's no better place to start than with the familiar parlor game of twenty questions.

A common form of the twenty-questions game involves a group of people who send one of their number out of the room to act as the questioner. The group then decides upon a target word and the banished party is asked to return. It is then the task of the questioner to identify the target word using at most twenty questions, such as "Is it alive?" or "Is it liquid?" The winner of the game is that questioner who identifies the target word using the smallest number of questions, under the stringent condition of having only one chance at actually guessing what the word is.

The physicist J. A. Wheeler likes to tell of the time he played an interesting variant of the game following a dinner party at the home of physicist Lothar Nordheim. According to Wheeler, he was sent from the room for what seemed an inordinate length of time. Returning to the room, he saw a smile on everyone's face a sure sign that some sort of mischief was afoot. He then started his questioning with the customary sweeping queries: "Is it animal?" No. "Is it mineral?" No. "Is it alive?" No. But as the questioning went on, Wheeler noted that the answers were slower and slower in coming, with the person being questioned thinking for a long time before responding with a simple yes or no. Finally Wheeler felt he had narrowed the possibilities down to the point where he was ready to take the plunge. "Is the word 'cloud'?" he asked. At which point everyone broke out laughing and told him he was correct. It seemed that while he'd been out of the room the others had agreed that they would not select any word, but rather would let some word emerge as a consequence of Wheeler's questioning. The agreement was that the parties being questioned could respond with either a yes or a no, the only constraint being that whichever response they gave, they would have to have a definite word in mind that would be consistent with all the preceding responses. So the game was at least

as difficult for the others as it was for Wheeler!

The point Wheeler makes when recounting his twenty-questions story is that the game serves as a metaphor for two competing versions of what constitutes physical reality. Let's call them *objective and contextual reality*. Objective reality corresponds to the standard form of the game in which the word is preselected. This is just our old friend Newtonian reality again. The things (words) of this world exist and have real properties independent of human observers or measuring devices. Wheeler's game corresponds to a contextual reality, and involves a world that is literally created by the way in which it is probed by the observer. Just as there was no definite word but only potential words when Wheeler (the observer) entered the room, no stage is out there waiting for us to step forward and read our lines either. This situation calls to mind Gertrude Stein's withering assessment of Oakland: "There's no 'there' there." Actually, there are only potential "theres," and the stage of reality is constructed in real time as we proceed to act out our roles as observer/participants. So is Wheeler's word really there or isn't it? Is there an honest-to-god objective reality underlying the surface appearance of things! Or is it necessary to introduce some kind of observer as the creator/constructor of what we think of as being "real"? Shakespeare, Newton, and my barber say yes, the world really is "there"; the modern quantum physicist tells us maybe not. To see why, as well as to understand the many senses in which Wheeler's word and our world might not really be out there at all, we must set out on an all-too-brief tour of a few prominent landmarks in the wonderfully weird world of the quantum.

ONTOLOGY FROM TECHNOLOGY

The current revolution in the communications/computing industry through its essential technological parameters is making manifest some basic ontological properties of the world. Analog/digital, FDMA (Frequency Division Multiple Access), TDMA (Time Division), SDMA (Space Division), CDMA (Code Division), etc. all involve the dimensions by which we experience reality. This new technical parameterization affords an opportunity to explore, at least metaphorically, the ontological nature of the physical world.

For example, we observe the world to be fractally structured, with modules of energy-matter being separated by gaps, voids, and silences. From technological analogies, we may reason that gaps are the result of wave interference. Two conclusions may be drawn: 1) That the ultimate structure of the universe is wave-like. Underlying atoms, nucleons, quarks,.. are primary energy waves of multitudinous frequencies and wave lengths. and 2) In an infinite space all waves may coexist with noise-like cancellations and reinforcements, but in a finite domain only integral waves may exist, all others cancel each other out. The presence of gaps between integral values therefore infers that the universe is finite. While this might be erroneous, if nature uses the same structures universally that we observe in our technologies, and employs economy in the number of forms, then the likelihood of such reasoning being correct is large.

Many of the technological parameters are paired, possessing various types of symmetries. Time and frequency are reciprocals, $T * f = 1$, but we experience time as continuous and frequencies as discrete. Time is in a continuum, it is like the real numbers, it is measured. Frequency is in a discretum, it is like the integers, it is counted. Ourselves, we experience temporally the waves of frequency less than one hertz, and experience as frequency the waves of frequency greater than one hertz. But the world is experiencable at many different frequencies. We perceive different realities when our theta and alpha waves change frequency. The differences greatly exceed changes of the order of viewing the landscape through different colored lenses. But the world can also be viewed in multiplexed time. Events are imbedded in a discretum--Camelot, the once and future king. But multiplexed events lack the reality for us that the continuous conveys.

We select our physical reality with our senses. The notions of time and frequency come to us primarily aurally. (Although there is also an inertial sensing of time and frequency in every body cell) Our notions of space come to us primarily visually, and since we are dominately visual and aural creatures, space and time have become the important infrastructures in our

organization of experience. (Other animals may have infra-structures in smell and taste as elaborate as our space and time, or even in some sense area we hardly possess. I am always impressed by the way flocks of birds and schools of fish can maneuver in coordination).

What about space? Again we encounter gaps and voids. There seems to be the need to measure both extension and separation. Are these measurable with the same meter stick? The reciprocal of distance is sometimes expressed as curvature. $D * K = 1$. This is not so intuitive for us as the idea of wavelength.

Fundamentally we encounter matter and gaps, sound and silence, stuff and no-stuff. Within the stuff is continuity, between the stuffs is discreteness. Thus there is both an analog and a digital aspect to the world, leading to its fractal like structure. Certain kinds of gaps lead to levels and hierarchies, others to cells and cellular aggregates. Then there is the important wave-particle dyad. Waves are everywhere and everywhen, particles are here and now. The problem for the ontologist is to organize all of the dyads and symmetries.

Dyads

- continuous and discrete, (analog and digital)
- wave and particle, (global and local)
- time and frequency
- extension and separation
- ^{distance}
~~space~~ and curvature
- channeled and open (4π) (wired and wireless)
- signal and noise
- mobile and static
- node and link

THE ONTOLOGICAL SPECTRUM

A useful metaphor for the ontological spectrum is the chemist's pH scala for acidity and alkalinity. In this scala water is taken as being acidically neutral and is given the value 7. Values below 7, e.g. 5.2 (boric acid), 3.8 (carbonic acid), 1.2 (sulfuric acid) represent acidity, the smaller the number the higher the acidity. Values above 7, e.g. 8.4 (sodium bicarbonate), 9.2 (borax), 13.0 (sodium hydroxide) represent bases, the larger the number the higher the alkalinity.

We can metaphorically think of realities as being distributed along a scala centered on the 'neutral' order of nature (corresponding to water) with positions on the scala less than say 7 representing higher order realities which contain the natural order, e.g. eternity, heaven and assorted spiritual and mental levels, while positions on the scala greater than 7 represent artificial sub-realities, contained in the natural order, e.g. the social order, movies, games, and assorted virtual realities. The purpose of this metaphor is not to assign any numbers, but to create an alternate schemata for thinking about realities. We accordingly end up with a sort of Russian doll model, with a set of nested realities replacing the usual model of a single "real, out there, objective, upper case R reality".

The concept of a multi-level set of realities appears to be related to a set of altered states of consciousness. Indeed quite possibly states of consciousness may be mappable isomorphically onto realities. This leads to the idea that a state of consciousness is a bridge between an epistemology and an ontology. Every epistemology creates a state of consciousness which in turn evokes a reality. For this to be so the traditional idea of ~~what~~ an epistemology ~~is~~ must be generalized.

We usually think of an epistemology as a way of knowing, a process for acquiring knowledge, a mode of inquiry. Traditionally our various epistemologies all operate within the common state of waking consciousness. Generalizations must take into account that within each state of consciousness there may be one or more epistemologies. This redefinition makes various practices, such as meditation, into epistemologies. The dream state becomes an epistemology. Drug influenced states become epistemologies. Rituals are epistemologies. The living human organism is itself an epistemology--a way of organizing experience.

Meta

ONTOLOGICAL DICHOTOMIES

There are two kinds of existence:

There is the Vairachona-Akshobya existence coming ex-nihilo from the Sunyata. This is sustained, serving all others, requiring no support. It is Sat.

*but strob
Diracean?*

There is derived existence, dependent on other, serving itself, requiring support.

There are two kinds of non-existence:

There is Dirac non-existence. When A and no-A are brought togher the join results in zero, in nothingness.

(There is Eddington non-existence. When there is AAAAAA..., uniform sameness, there is no awareness. *but possibly existence*)

There is Pythagorean non-existence. One does not exist because it is a special case of Eddington non-existence.

Thus both 0 and 1 are symbols of non-existence

When self is joined with no-self, there is a Diracean union resulting in nothingness. When self is joined with not-self there is an Aristotelean union resulting in a plenum, i.e. in 1, which is according to Pythagoras also non-existent
Dirac: $A + no-A = 0$ e.g. matter and anti-matter
Aristotle: $A + not-A = 1$ for 1 read everything.

When + and - are joined in one world the result is 0, in the second world the result is energy release.

There are two kinds of truth:

There is sat truth, stand alone truth. It is just so.
There is contingent truth, truth that must be renewed or repeated to survive, else it is eroded by the second law. cf the Persian adage.

There are two realms:

The realm of space and time, a competitive zero-sum realm, the realm of struggle, work and learning.
The realm of spirit, of Love and beauty, giving, diffusing, non-zero-sum world. the world of grace, support and refuge.
Humans inhabit both worlds.

There are two times:

Chronos *measured*
Kairos *not measured*

There are two spaces
space measured
place not measured

On Symmetry

All symmetries are forms of Dirac separation, i.e. ex-nihilo. Joining a symmetry --->0, cancels the symmetric parameter.

Joining clones ---> sumation.

Thus joining either cancels or totals,

Separation either creates a symmetry (Dirac ex-nihilo) or truncates.

G. Spencer Brown

The world is made of symmetries and clones, unlikes and likes, Mitosis is horizontal separation resulting in clones Dirac separation results in 2 bodies that are in some aspect symmetric.

Does the pain in separation result from separating likes or unlikes?

We are all a blend of like and unlike, clones and symmetries. In separation, I still have the like with me, it is the unlike (the symmetric) whose removal in separation causes pain.

• Dirac Creation $0 \rightarrow A \text{ and } \tilde{A} \text{ (not } A)$ ex nihilo

This 0 is emptiness the Sunyata

A and \tilde{A} are symmetric \tilde{A} is "opposite" A

$\exists \infty 0$'s i.e. any number of parameters may be brought from the Sunyata

Complex entities: consist of 2 components a like component and a symmetric or cloned opposite component

e.g. $b + c, b + \tilde{c}$

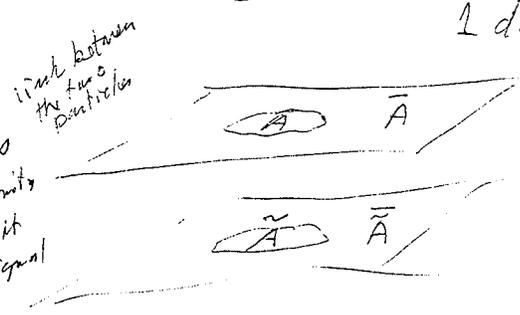
• Cloning: Mitosis $A \rightarrow A, A$

• Aristotelean $A + \bar{A} \text{ (not } A) = 1$ i.e. everything.

Trinity Form emptiness No Form

\exists a 3rd that ties F and \tilde{F} cf. Quantum Mechanics

Another Trinity JS - Orbit error signal



0 = nothing

1 = everything, but also nothing (Pythagorean)

1 does not exist

$\bar{A} + \tilde{A} = 0$

Redo G. Spencer Brown's Laws of Form

FOUR ONTOLOGICAL LEVELS

Monism

The first view of the world is that there is but one reality. It is the reality supplied to all of us by our sense data and which is sealed by a general consensus. The world may be a mystery, (ref 93-#40), which we explore with questions and hypotheses, however, there is but one truth, which it is our task is to ferret out from all the appearances and illusions.

Fixed Facets

The second view is that the world of our consensus is but a single facet of a much richer and more complex World. Other facets of this multi-faceted Cosmos may not be available to us, (Kant's Noumena), but if they are available, it is only through alternative epistemologies. That is, we select or elect a particular facet of the World to be our world through our epistemology. While the epistemology of science appears to be quite successful in disclosing a particular facet of the World, it must avoid the claim that this facet is the only one. A World consisting of many facets, all of which are real (or true), was called a congeries in ref 93-#40. In a congeries the number of facets is fixed and it is not possible for an observer to be in but one facet at one time.

Fluid Facets

Whereas a congeries may be described as having a fixed number of facets, there is a second type of faceted World, in which the facets have fluid boundaries and permit ready travel between them. At this point it is seen that the nature of any World described is inextricably interlaced with the nature of the "observer". It is impossible to talk objectively about worlds. When we speak of the epistemological-ontological coupling, we must recognize that the nature of the observer is an inherent part of any and every epistemology.

Amorphism

While monistic and faceted Worlds are pre-shaped, fourth level worlds are like putty, not pre-shaped, but pliable and subject to shaping. We shall call such worlds amorphous. An example, is the Sunyata molded by the Dyani Buddha Vairachona. One does not explore such a world, one creates it. It is likely that in all levels, each world, each facet of a World, there is partial amorphousness. The problem is what is fixed and what is amorphous.

God grant me the serenity to accept things I cannot change,
the courage to change things I can, and the wisdom to know
the difference. -- Serenity Prayer (Paul Tillich ?)

SLICES

THE UNIVERSE MODELED AS A MATRIX

Consider the universe to be an N-dimensional matrix. In this matrix, an entry, $M_{i,j,\dots,k}$, may represent an **event**; a column may represent a particular type of **entity**, [e.g. an atom], a row may represent a different type of entity [e.g. a photon]. a planar slice may represent a more complex **entity** [e.g. a virus]. Every linear and planar slice represents some simple or complex entity. Thus an **entity** is a particular way of organizing a set of **events**. Even a human being would be a way of organizing a set of events. Further, an **archetype** is a pattern of events that are organized differently from entity type organization, but whose organization has a measure of ubiquity that leads to repetitions.

What we call a world view is a package of slices. This package is not a picture of the whole, but only a *partial* picture of a *part* of the whole. However, we tend to take a particular package of slices as a surrogate for the whole. [e.g. the scientific world view]. Further, as our experience extends the size and dimensions of the matrix, we also tend to restrict the slices. This is an indication that there exist limits to our information processing capacity. Unless we can design some strategy for coordinating multiple world views, our understanding of the universe and of our selves is forever limited.

There are two basic epistemological strategies:

First Enlarging the Matrix. Previous examples include:

- Flat earth to spherical earth as a result of extensions in distance.
- Relativity as a result of extensions in velocity.
- Quantum physics as a result of extensions to non-locality.
- Chaos theory as a result of extensions to non-linearity.
- Complexity as a result of extensions to non-equilibrium.

Yet to be extended:

- Economics 101, extensions beyond self interest
- Aristotelean logic, extensions beyond the law of the excluded middle.
- Randomness, extensions beyond probability theory.
- Theology, extensions beyond anthropocentrism
- Time, extensions beyond past-to-future causality.
- Truth, extensions to beyond one ontology.
- And others

Second, Making Alternate Slices

- Slices that are events
- Slices that are entities
- Slices that are linkages
- Slices that are archetypes
- Slices that are forms
- Slices that are locations

Yet to be fathomed:

- Slices that are essential
- Slices that are choices
- Slices that are selections
- Slices that are creations

ONTOLOGY: A MOUNTAIN RANGE

It is better to consider ontology as a mountain range rather than as a single mountain. There are many peaks and mounts (i.e. realities) in the *Reality Range*. These peaks are connected but are not part of a single mountain as has been widely believed. We can see several of the peaks from where we live, but not the whole range. We have habitually become obsessed with climbing one or another of the near by peaks feeling that if its summit were reached we would be able to map the entire range.

Today four peaks are of special interest to climbers. The first of these is Mount Planck, the peak whose summit physicists feel will give a view of everything.

See Frank Wilczek, *Physics Today*, June 2001, Nov 2001, Aug 2002.
Scraps:

The second of these is the General Genome Massive. A sub range in itself that includes genetic genomes, cellular automata, and code representations for animate and inanimate objects.

See Stephen Wolfram, "A New Kind of Science" 2002.
Scraps:

The third is Mount Nothingness. This is perhaps the most lofty and foreboding of any known mountain. Few have attempted to climb it. Even to reach its base is extremely difficult.

See Sten Odenwald, "Patterns in the Void"; Henning Genz, "Nothingness"; Charles Seife, "Zero" Robert Kaplan, "The Nothing That Is".
Scraps:

The fourth is a little known area of the range, Spaces Peaks. This consists of several distinct but connected summits, that allow mutual perspectives, and a different view of the whole

See
Scraps:

AN ALTERNATE ONTOLOGICAL VIEW THE PYTHAGORAS-PLATO-PAULI MODEL

1) Along with Pythagoras, we postulate that there must be at least two of anything in order for that thing to exist.

2) Along with Plato, since by 1) there must be at least two spaces, we postulate that in addition to the every day physical and position space, P-SPACE, in which our senses are imbedded, there is a second space whose dimensions and coordinates determine the form and pattern of things. This second space we shall call H-SPACE.

3) Along with Pauli, we postulate a General Exclusion Principle that maintains no two entities in the universe can have the same coordinates in all spaces. This means that there must be at least one space in which any two entities must have different coordinates. The inference of this principle is that every entity in the universe is unique.

There is a basic contradiction between Pythagoras' 'more than one to exist' and Pauli's general exclusion principle which says every thing in the universe is unique. This can only be resolved if we assume that Pythagoras requires a like pair in every SPACE. Pythagorean non-existence would state that unless there are two or more identical entities, E(1), in a SPACE S, E(1) does not exist in SPACE S. Pauli requires that if there are two or more identical entities in space S, then these entities must differ in some other space.

4) Along with Noether, we postulate a General Conservation Principle that preserves basic symmetries and equilibra within and between all SPACES.

The operation of the General Exclusion Principle is ubiquitously displayed in P-SPACE by the fact that two objects cannot occupy the same place at the same time, that is, cannot have the same space-time coordinates. This fact allows more than one entity to have the same coordinates in H-SPACE. Were it not for this, there could not be a multiplicity of entities with the same form.¹

¹If the converse were true, P-SPACE and H-SPACE properties being interchanged, then no two objects could have the same form at the same time, but many objects of different form could simultaneously occupy the same place in P-SPACE.

There is nothing in the foregoing three postulates that forbids the existence of more than two spaces. Another space that seems needed in order to fully explain the phenomenal universe is a space whose coordinates indicate the strength of the bonds or forces acting between entities. We shall here designate this SPACE as B-SPACE.

Consider an example: Competition between organisms increases with the degree of similarity between the organisms. The more alike they are the more competitive, that is, the higher the density in H-SPACE the greater the repelling force in B-SPACE. Contraction in H-SPACE leads to expansion or fragmentation in B-SPACE.

These examples show that there are relations between the internal happenings and conditions in one SPACE and what happens or is possible in another SPACE.

$$E_{n_1 \dots n_k}^R (i \dots t)$$

SOMETHING OUT OF NOTHING

B/so 97#89
97#85
98#32

*Omnibus ex nihil ducendis sufficit unum*¹
---Leibniz

A classical philosophical and theological question centers around the creation of something out of nothing. How could God create something from nothing? And where did God come from? From non-existence into existence or did God exist eternally? In a more modern idiom, where did all the matter and energy in the Big Bang come from? And what was going on before the Big Bang? These puzzling questions are basically tied to our concepts of existence and nothingness. We could perform a thought experiment: remove one thing at a time from all that exists. When everything has been removed from existence to non-existence, then what is left we define as "nothing". [cf. the Guru*who demonstrated this process with the Maharaja's chariot.] The question morphs to: What is the relation of nothingness to non-existence? or Does nothingness exist?

It is curious that in discussing nothingness and non-existence, we are entering a domain that has been largely avoided by Western thinkers. We have studied the rules and relations that govern things that exist, and tossed aside as meaningless questions about nothingness and non-existence. But from time to time even in the West philosophers as well as mystics have ventured apophatically into this realm.

A recent scientist and philosopher who thought about this subject was Arthur Eddington. He concluded: "Uniform sameness is philosophically equivalent to non-existence". Eddington's equation reads, "sameness = non-existence", but this does imply that "nothing = non-existence". So for Eddington the problem becomes not the creation of something out of nothing, but the creation of something out of sameness. Eddington's approach puts ontology not only into a new ball park, but into an "inverted ball park". He maps existence onto non-sameness and non-existence onto sameness. In other words there is an existence-sameness symmetry. Following Eddington, ontological questions will now have to do with the nature of sameness rather than with the nature of existence.

So what can we say about sameness? At first thought we would say that uniform sameness means no pattern whatsoever. No pattern? That is precisely what white noise is. Or how about a continuously repeating pattern like an unmodulated wave? Such may have a sinusoidal pattern, but in repeating over and over it becomes uniform sameness. Both white noise and continuous waves are candidates for Eddington type non-existence.

¹For making everything from nothing one [method] suffices.

* Nagarjuna

Now Leibniz says we need only one approach to generate something out of nothing, and under the Eddington sameness = non-existence equation we already have two sub-approaches. However, in both the white noise and the uniform wave case, a single operation suffices to destroy sameness. This operation is **modulation**. In the first case, consistent with the central limit theorem, white noise modulated with white noise generates a gaussian or bell shaped distribution. Repeated iterations of this operation result in gaussians with decreasing dispersions. After a few iterations the result begins to look like a Dirac δ function. Hence repeated auto modulations of white noise lead to a very definite here and now pattern. The sameness has become non-sameness and non-existence has become existence.²

In ancient^{times} there was another westerner who philosophised on non-existence. This was Pythagoras.

Two kinds of Nothingness represented by 0 and 1,

0 ~ Nagasvnu

1 ~ Eddington

Two (or more) kinds of ex-nihilo

$$\neg x \leftarrow 0 \rightarrow x$$

$$\frac{1}{x} \leftarrow 1 \rightarrow x$$

$$x^{-a} \leftarrow 1 \rightarrow x^a$$

²The generation of various entities through the modulation of a continuous carrier wave having the planck frequency of 10^{43} hertz will be discussed in Part II.

also 98 #24

97# 89

97# 85-

ON NOTHING AND NON-EXISTENCE

Over millennia human experience and language developed a large set of relations between things that exist, symbols and words for them, and logical systems for organizing them. But the concepts of no-thing, non-existence, saw no need for symbols. Indeed it is paradoxical to have a symbol for something that does not exist. What is meant by existence in this context is that which is perceivable by the senses, originally directly perceivable. However, awareness of existence moved beyond direct perception. It was enlarged through instrumental adjuncts to the senses, telescopes, microscopes, etc. through inferences from patterns of behavior and patterns of organization, and most abstractly through mathematical modeling. The word existence was maintained for the inputs from all these sources, but that may have been a huge epistemological mistake.

Kant made a distinction between the world whose existence is knowable through any available means: the phenomenal world, and that which is not available to us by any means of knowing but nevertheless exists: the noumenal world. A very important distinction but increasingly insufficient. With only one word for existence we are not able to construct valid ontologies by rational means.

An alternative available to us is an apophatic approach. To investigate along with the various species or levels of existence the levels or species of non-existence. One of the earliest to use this approach in the West was Pythagoras. Pythagoras concluded that ONE does not exist. If there is but one of anything that thing does not exist. If there is but one color, then color does not exist. If but one tone, sound does not exist, If but one universe, the universe does not exist, If but one God, God does not exist. If any parameter has but one value that parameter does not exist. Pythagoras recognized the need for a symbol for non-existence and found that the number ONE had that attribute.

Some twenty five centuries later the physicist Arthur S. Eddington wrote the second sentence to Pythagoras' thesis. Eddington maintained that "Uniform sameness is philosophically equivalent to non-existence". This is an extension of apophasis into the realm of perception. It can be argued that Eddington should have said, "Uniform sameness results in non-awareness". But is not uniform sameness the same as Pythagoras' ONE? If so then non-awareness is the human equivalent to non-existence. This brings again into focus the question of the relation between consciousness and existence, between epistemology and ontology.

In Pythagoras' day there was no symbol zero, "0". Had there been perhaps he would not have settled on ONE as a symbol for non-existence. The origin of zero is not certain. It apparently came from India and was passed by the Arabs to Europe around the seventh century. It was also independently invented by the Mayans or other peoples of meso-America, possibly about the same time as in India. The paradox of having a symbol that stood for nothing was finally penetrated. But is the nothing of zero the same as Pythagoras-Eddington's non-existence of ONE? Are nothing and non-existence the same?

Three possibilities occur:

- Non-existence = Nothingness
- Nothing is but one form of non-existence
- The class of non-existing is a sub-class of the class of nothings.

The usual idea of null-set, or empty set is not implied here.

Of course $0 \neq 1$ contradicting the first premise.
 Since $1 > 0$ the second premise is still in the running.
 but it looks dim for the third premise. But this is predicated on the quantitative attributes of zero and ONE not on their Pythagorean attributes.

So tentatively we conclude:

"Nothing is but one form of Non-Existence"

and along with Pythagoras:

The whole does not exist only diverse parts exist.

The opposite of the conclusion of Nagarjuna

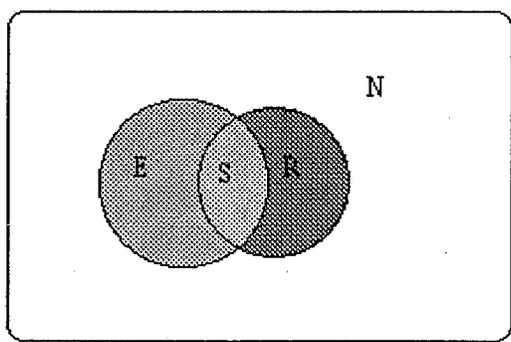
*composites
 All combinations are temporal
 - Sakamuni*

DRAFT

NOTHINGNESS: THE HIDDEN QUADRANT

The door to NOTHINGNESS is open, but looking through and seeing nothing there we never enter. Instead we toss through the door those perplexing things which we do not wish to encounter. We use NOTHINGNESS as a trash bin for those contradictions and paradoxes we label too absurd to be taken seriously. Yet, paradoxically, NOTHINGNESS hangs albatross like on the necks of all our logics and reasoning. Null sets, apophatic definitions, falsification, "none of the above", and many more concepts reside on the verge between somethingness and nothingness. In the West we have taken refuge in Fortress Aristotle, secure within the walls of the law of excluded middle, allowing us to create the insulated categories of sense and nonsense. But in the East a logic that supports statements that are simultaneously true and false has permitted nonsense to be considered as sense resulting in a penetrating and critical worldview.

Making sense can mean either fitting empirically with sensory experience or fitting logically with prescribed canons of reason, or sometimes fitting both, which case is labeled scientific. Much lies beyond our sensory limits, and as Gödel has shown, much lies beyond our logical limits. And the domain of science is even more restricted, being the intersect of the sensory and the logical. Beyond the union of the sensory and the rational lies Kant's noumina, which, like Schrödinger's Cat being either alive or dead, may be either something or nothing.



E = Experienc^{ed}able; R= Rational; S= Scientific; N = Nouminal
 Intersect = S; Union = ~N

The sensory may be extended to the experiencable, the logical may be extended to the imaginable, but as before beyond their union lies a domain which may be something or nothing. And as some philosophers (like those from Copenhagen) would have it, what lies beyond the bound is both something and nothing (or perhaps neither something nor nothing) until experienced, observed, measured, or axiomatized.

ONTOLOGICAL LEVELS

The scientific worldview assumes a reality that is matter-energy, and that all phenomena can ultimately be explained in terms of the interactions between particles and forces. This one level worldview, largely inherited from the 17th and 18th centuries, still prevails in many quarters, but is currently being undermined by the findings of science itself. That is not to say that science is ready to resort to non-material explanations, but that the patterns of thought required in understanding quantum reality, for example, are forcing a departure from the traditional canons of Aristotle, Bacon, and Descartes. Current "thinking out of the box" does not return to theistic explanations, but invokes such notions as "parallel universes", "non-localism", and an underlying ubiquitous vibratory essence. These concepts are not easily packaged with the traditional properties of a material universe.

The wisdom of the ancients had little difficulty with the world's possessing many levels. For example, in some ancient models there were four cosmic levels:

In the Kabbalah:

- Level One: Assiah, the material world
- Level Two: Yetzirah, the specific pattern for the material world.
- Level Three: Briah, the set of patterns defined by an archetype.
- Level Four: Atziluth, the world of the archetypes

In Hindu tradition:

- Level One: The manifest material world, enduring for a Day of Brahma.
- Level Two: The many material worlds belonging to the life time of Brahma
- Level Three: The many Brahmas
- Level Four: Brahman, the unchangeable rules, ground for existence, from which all is derived.

We might say that the Kabbalah tradition favors the engineer's FDMA, Frequency Division Multiple Access, while the Hindu cosmology favors a form of TDMA, Time Division Multiple Access.

In the Greek tradition, there is Plato's world of appearances and archetypes, and the two levels of Parmenides and Herakleitos: the unchanging and the ever changing. Similar to Plato, the Hopi and other native American groups, spoke of the two levels of manifest and unmanifest. And now the French structuralists are dividing the world into the visible [things] and the invisible [relationships]. (Even a physicist has to admit that while particles may be visible, forces are invisible.)

While lacking precision, the models of the ancients were both comprehensive and non contradictory. Their rejection, about the beginning of the 17th century, was through their inability to deal with the details, something that the new scientific method did very well. Precision in the specifics vs. a comprehensive wholeness led to a split in man's approach to understanding the world, the split between science and theology. Today that split is being bridged, allowing us to utilize the thinking of both.

Perhaps it is time to ask what would a modern multi-level worldview look like? Perhaps something like this:

The universe we live in is a universe whose properties are basically determined by the fundamental constants of physics, such as c , G , \hbar . We know that if the values of these constants were different, even by small amounts, the universe, like a chaotic system, would evolve to a completely different attractor. Although our universe is **delimited** by the given values of the fundamental constants, it is not **determined**. There are many variations possible, not all of which are realized. And this is the fundamental property of a multi-level cosmology: A template exists on each level but what is realized within the constraints of the template may assume great variety.

And now to levels themselves:

First, the level of a **set** of universes, of which ours is one, delimited by the particular values of the fundamental constants: $c = 299,792,458$ m/s, $G = 6.673 \times 10^{-11}$ m³kg⁻¹s⁻², and $\hbar = 1.054571596$ Js [Note: This is a **set** of universes, not a single universe, because the values delimit but do not determine.]

Second, the level of a set of universes all defined ^{by} a *template* that uses various values of the constants, c , G , \hbar ... [Note: For each group of values of c, G, \hbar , there would be a distinct *set* of level one universes.]

Third, the level of a set of templates of which the template of level two is but one variety.

Fourth, the level of rules of structure governing all templates of whatever form, something unchanging pervading each universe that persists whatever the template. [Would not this be Brahman?]

I am left with the question: Is it not possible to have both specificity and multi-levels? Must one be abandoned in order to have the other? Is this split but a twist from the ego battles of history?

APPROACHES TO ONTOLOGICAL MODELING

SPACES

P-SPACE: The spaces of location

First, the space of three spatial dimensions, the space of **entities**. (Events do not exist in this kind of P-SPACE because permanence or long duration in time is required for existence). In this space entities are located with respect to each other by the parameters distance and direction. Note that distance and direction may be considered to be LINKS.

Second, the space of space-time, the space of **events**. Events are located with respect to each other by not only the parameters distance and direction but by instant of occurrence and duration.

H-SPACE: The spaces of form

- First, the space of shape or form only
- Second, the form space that also allows scale

B-SPACE: The space of linkages, the factors underlying both **events** and **entities**.

- First, the space of forces
- Second, the space of bonds
- Third, the multi-level space of sets of linkages, and sets of sets, etc.

I-SPACE IDENTITY SPACE

EPISTEMOLOGICAL STRATEGIES (Each of these has its counter part in military strategy).

PENETRATING SINGLE FOCUS

- Can advance rapidly, limited territory, fixed goal,
- Strip map, Eventual stagnation with encrusted dogma

→ *lost in details*

BROAD FRONT

- Glacial advance, wide territory, receding goal,
- Coastal map, Runs out of energy and ossifies

BOUNCING

- Rapid movement, local territories, no goals except to keep moving,
- No map, Illusion of accomplishment

LINKED SELECTED SECTORS

- Moderate advance, territories with gaps, continually redefined goal,
- Accurate but partial map, Self energizing
- Success in any sector or parameter, attracts energy to that sector, resulting in the neglect or ignoring of alternatives. So LINKED SELECTED SECTORS may transform into PENETRATING SINGLE FOCUS.

→ *insight possible*

THE FACE ON THE CLIFF

PART I: THE EVENT

Early in 1978, the year I became sixty, my older son Art sent me a challenging request. He said, "Dad, you have been a scout out there exploring on the borders of the unknown for the past few decades, now that you are turning sixty how about reporting back to the rest of us what you have found. Why don't you write down what you feel you have come across that is worth passing on." After recovering from the flattery and thinking about it, I agreed that this might be a worthwhile thing to do. It turned out that it was not only challenging, but it was also fun. The result was a small booklet called "Sixty Years" which contained some of my more bizarre personal experiences, but mostly included what I had come across in my studies and research that had particularly impressed me. About sixty copies were printed and passed out to friends at my Sixty Birthday Party. The pamphlet included quotes from various sources that I felt were useful guides for how to live one's life. I recall the final quote in the book was something to the effect, "The last of life, for which the first was made, is yet to come". (Robert Browning, I believe.) This seemed to license me not to stop but to keep on exploring and really go after some of what I had up to then only glimpsed. So began the race between the Achilles of the ageing process and the Tortoise of my search for the truly significant that Art had asked for in the beginning.

About a week after the birthday party the Tortoise moved into the next interval of the race. At a family reunion in Flagstaff, my son Charles, my grandson Clayton, my son-in-law Tom decided they would like to see Lake Powell on the Colorado River up on the Arizona-Utah border. They wanted to swim, fish, and explore. Explore? How about inviting me to join? O.K., but are you sure you are up to it? I recalled Browning and felt I had to show these young whippersnappers that the hill is always ahead and you are never over it until you are in your grave (and I am not sure even then).

Our first day at the lake we only loafed, swam, and made a few plans. On the morning of the second day we rented a small motorboat and headed east, our destination Rainbow Bridge National Monument. On the way we frequently detoured and explored some of the strange side canyons. Very few places in the world, (another is Petra in Jordan), do canyons have such large height to width ratios. We took the boat up canyons but three or so feet wider than the boat, but whose vertical sandstone walls on each side rose several hundred feet. The entire scene seemed extra-terrestrial because of the complete absence of vegetation. Everywhere the water met rock without any intervening strip of plant life.

After lunch in a secluded cove, we resumed our trip to Rainbow Bridge, reaching the end of the inlet that leads to the bridge at about two in the afternoon. Before the Colorado was dammed creating Lake Powell, Rainbow Bridge was difficult to reach, involving packing in for several days. But with the lake visitors could go by boat to within a short hike of the bridge.

For me this trip was a pilgrimage. I had always wanted to visit the bridge for I knew it to be held as a sacred place by the indigenous peoples of the Southwest. On arriving, I was not disappointed in either the geologic magnificence of this great red stone arch, nor in the spiritual presence that suffused the area and which qualified it as a temenos to native peoples. I shared their reverence. But I was not only a pilgrim, I was also a tourist and I wanted a memento of our visit. So I found a small stone of unusual shape that I could add to my stone collection which I had gathered over the years from various sites around the world. Shortly after I picked up the stone Charles came up and said, "Dad there may be a storm coming up I think we had better get started back".

Charles was right, when we left the inlet and returned to the lake we were alarmed at the change. A strong wind from the west was blowing and the lake was covered with white caps. As we moved away from the shore we realized that we were in for a rough ride. Our course was about 45 degrees from the wind, but in so small a boat and with the increasing height of the waves we decided our best heading was directly into the wind. As the wind freshened the waves grew. We estimated their height at about a third the length of the boat. It became very rough. After a few minutes the timing of the arrival of the storm occurred to me. It had begun right after I had picked up the strange shaped stone near the bridge. I was wondering if there were some connection, when Charles said, "Dad, did you do something you shouldn't have back at the bridge?". He looked hard at me and I felt he was reading my thoughts. I replied, "You think I'm a Jonah connected with this storm?". "Well, are you?" "Could be, but certainly not intentionally." The waves pounded us and the boat pitched like a wild horse. I then began an inner dialogue with the storm god. "If my taking the stone is forbidden, then I shall return it." And within minutes the storm began to ease. I concluded that I was not to have removed the stone.

Charles, who had been at the helm, said that we were making very little headway and it looked as though we couldn't possibly get back to the base before night. The storm was indeed abating, but we estimated that we had covered less than a fourth the distance back in the last two hours. We decided it would be better to land somewhere and spend the night than to try to find our way back in the dark. Although we were making better headway now that the storm was subsiding, we could see no place to land for almost everywhere the banks of the lake consisted of rock cliffs descending vertically to the water. Then Tom shouted that there was a sand bar ahead on our left. We could land there. This might be the solution. We approached and saw that there was a shoal rising a few feet above the water, displaying some large rocks but separated from the south bank of the lake by some hundred yards. We eased forward and found we could bring the boat to a secure mooring. By now the lake was regaining its customary calm and we were easily able to get our gear to shore. We had not come prepared to spend the night, but had some food and our jackets so if we could find a sheltered spot among the rocks we should be O.K.

The sun was low in the August sky and was casting long shadows. I was thinking of my promise not to remove the stone and wondered if I must return it to where I had picked it up, when looking across the lake toward the northeast, I was amazed to see a great face staring at me from the cliff. The shadows cast by the irregularities in the rock on the opposite cliff composed a human face closely resembling that of an Indian chief.

The likeness was striking, the features were strong and stern, yet quite handsome and constituted a presence that commanded the entire scene., I thought that this must be pure imagination coming out of my inner dialog with the storm god. "Hey, Charles, Tom, Clayton, look at that cliff over there do you see anything?" They stared, "See what?" "Anything on the face of the cliff." After a few moments, "Yeah", said Clayton, "There's a funny looking face over there." Thank goodness, I am not yet totally crazy. "Can you describe it?" "It kinda looks like an Indian." Charles and Tom then saw it. We watched as the shadows lengthened and the face distorted and then disappeared. A few minutes later the sun was down and the stone I had picked up at the bridge was restored to a hollow niche in a large rock with hopes this would suffice as non removal from the area, praying the incident was closed.

It turned out the stone-storm incident was closed but the gestalt of 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, following the storm had seen 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 was greater than the sum of the parts. To complete the picture one additional fact was needed. Would the face be there again at the same time on the next evening, or was it a one time occurrence? The set of coincidences explanation would be falsified if the face were not there. But we did not return to find out.

PART II: AN INTERPRETATION

All of my life I have had what some would call paranormal experiences. But these have for the most part been mild, like seeing ghosts and other apparitions. Although I am convinced that there is far more out there than the scientific method is capable of digesting, I am its colleague in the crusade against woo woo and quackery. So perhaps a better label than paranormal for my experiences would be abnormal. I certainly recognized the face on the cliff as something abnormal. Something not to be dismissed but to be encountered. What was this experience trying to tell me? What could be learned from it? On reflection, the stone and the storm were probably purely coincidental, except that the storm had forced us upon a shoal at such a place and time for the face to materialize. If the message is the medium, which medium, the storm or the cliff? I selected the cliff for the message of the cliff possessed a certain familiarity. It had a resemblance to a message that Plato had remarked some twenty five centuries before: In what sense is reality an illusion, a pattern of shadows? For Plato on the wall of a cave, for us on the face of a cliff.

The thought came that human sensory experience can be isomorphically compared to communication: First, there is a message source, second a communication channel, and third a receiver. In the present case, the source is the configuration of actual rock indentations and protuberances on the face of the cliff, the channel is the sunlight falling on and reflected by the cliff, and the receivers are we gawkers standing on a sand

bar. The sunlight interacts with the rock shapes to create a pattern of reflected light and shadow which is perceived by observers but noted only in the event the pattern triggers something either already familiar to them, such as in this case, a human face, or is "recognized" perhaps as a *deja vu* experience. This means that in addition to the basic three communication components, in order for there to be communication, there must be a fourth component. The receiver or observer must also have a code book by which messages are discriminated 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 with the right lighting. . It is these elements of code book, place, time, and channel that force us to re-examine our views of what we know and how we know it.

To begin with let us agree to call the rock shapes on the cliff, Reality with a capital R. These rock shapes are independent of time and the positions of the sun and observer, and therefore possess a different order of existence than do the patterns of light and shadow created by their interaction with the sunlight. Let us call a configuration consisting of the intensity, color, and direction of the initial and reflected light a channel. Every channel interacting with Reality creates a set of patterns. The totality of those patterns received by a particular observer let us call the observer's world, and that subset of patterns which are contained in the observer's code book will constitute the particular observer's reality

The observer's world consists of a set of patterns resulting from synchronicities of time and place. The observer finds some of his world's patterns of interest and records them while ignoring others. Those which repeatedly occur get recorded, remembered, and are recalled whenever they recur. But some forms, not repeated, and therefore not stored in memory, are nonetheless "recognized". The observer's reality is thus composed of two orders of patterns: those remembered and those recognized; those the observer puts into the code book and those which are already in the code book. Thus one epistemological question raised by the face on the cliff metaphor is, "What is the origin and source of that portion of the observer's code book not placed there by memory?"

In addition we see that a world is dependent not only on the observer being at a particular location but on a concatenation of cyclical temporal configurations of which the observer may or may not be aware. The world is thus "granularized" in both space and time. It exists only at certain times, at other times it non-exists. Further at times of existence it exists only for observers at certain places and not for observers at other places.. Experience of the spatial and temporal granularity of the world led the Ancients to the concepts of *temenos* and *kairos*, special places and special times, places and times of opportunity, sacred places and sacred times. Today's communication engineers prefer the language of 'multiplexing': for special times, TDMA (Time Division Multiple Access); for special places ADMA (Area Division Multiple Access); for special illumination FDMA (Frequency Division Multiple Access); and for special code book possession CDMA (Code Division Multiple Access). In multiplexing science-technology has at last given us a useful metaphor for understanding Reality->reality.

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as the fence

THE CLIFF IS A USEFUL EPISTEMOLOGICAL/ONTOLOGICAL METAPHOR

Another basic question: Is Reality knowable? Can it be deduced from knowledge of our world? Must several worlds be known in order to grasp Reality?

We can agree with the Buddhists that reality is an illusion.

It seems the immediate first step is to become aware of the portion of the world that is filtered from us by our code book. How do we extend the code book, our awareness? Lower case reality consists of phenomena. There are several levels of noumena.

- 1. world not in code book
- 2. other worlds, all facets or spin offs of Reality
- 3. are there other light sources? Using 2 or more light sources may be the path to grasping Reality!
- 4. Is there more than one Reality?

The message is that we are **sharing** Reality with others, per CDMA, TDMA, FDMA, and ADMA. Multiplexing is about sharing.

The sensory spectrum of the observe

what we behold in the world is a synchronicity of time, place

<i>outer</i>	<i>inner</i>	<i>the sensory is illusion</i>
<i>cliff</i>	<i>code book</i>	
<i>light</i>		

meaning

The search is for the code book

what is in it. How did it get there

what is its source.

Thus we are not experiencing Reality

except as filtered by our codebook

by TDMA, ADMA, FDMA, and CDMA

MULTIPLEXING ⇒ SHARING

First draft

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→ TEMPLATONICS

REDUCTIONISM VS. TEMPLATISM

cf 96-65
96-67

For the past three centuries reductionism has been the philosophical basis of Western science. Reductionism consists, not of *post hoc ergo propter hoc* causality, but of bottom up causality. That is the cause and explanation of phenomena are to be sought and found in their component sub-parts. Biological phenomena are to be explained in terms of chemistry, chemical phenomena, in turn in terms of physics. And each level of physical phenomena to be explained in terms of components. Molecules in terms of atoms, atoms in terms of electrons and baryons, these in terms of quarks, It is not certain how far this sequence continuous, whether it ever ends.

*A story that ends
but never stops*

As an alternative to reductionism it is proposed that there exists a 'template' that manifests itself in the same abstract form, but in different observables, at each level of the ontological scala: sub-atomic, atomic, molecular, cellular,... This view would hold that the sub-systems do not determine the properties of a system, but that both the sub-systems and the system derive their properties by being isomorphic at some level of abstraction to a universal template. This template would be a sort of "code book" that is contained in all material systems, from quarks to Hubble universes. Humans being part of the picture would also possess this same code book. This would explain why we find the universe comprehensible, let alone experientable.

Several instances point to the possible validity of a template type hypothesis. There is, for example, the fact that von Neumann's construction of the essentials of reproduction in cellular automata are isomorphic to those found in the components of bio-reproduction. (von Neumann made his construction a decade before the work of Watson and Crick.) There is also a basic eight-foldedness that occurs on many levels, from sub-atomic symmetry groups through the periodic table of elements, on up to stellar and galactic types. (One could also throw in diatonic musical scales and the I Ching.)

One of the criticisms of reductionism has been its inability to account for emergence. Can templatism do any better? Speculatively, we might answer, yes. Assuming that a portion of the template includes the algorithms for self organization.

As far as determinism goes, templatism would appear to be less deterministic than reductionism. Templatism has both deterministic and open ended aspects. The interface may vary with each level of manifestation.

Templatism would have less demand on temporal sequences of evolution or emergence. Development could be occurring simultaneously on several levels, it not being required that all the bricks be available before construction of the building

begins. The universal code book would assure in advance that the bricks and the building would merge in a totally compatible way.

Both von Bertalanfy's General Systems Theory and J.G. Bennett's Systematics are predicated on some form of templatism. The search for commonalities in systems is inspired by the idea that at some level there exists a single Platonic archetype that is manifested in each system. The systems may be quite diverse, but on a certain level of abstraction, they are constructed around the same archetype or template. Even the importance of the concept of equivalence in human thought processes stems from the experience of the templated structure of the universe.

The most common realization of templatism is in mathematics itself. That the same equations are so broadly applicable to so many systems infers that these equations are the abstract templates on which multitudes of systems are constructed. The Pythagorean assertion that number is the basis of all extends these mathematical facts to the level of metaphysics.

At some point it becomes necessary to formalize the role of time. We may think of a template as a pattern, a process or both. Usually the idea of a template is static, a spatial description of the organization of a system. But it may also be a pattern in space-time, in which case it includes a dynamic. Or it may be a purely temporal pattern. The same three categories, spatial, temporal, or both, are also present in the concept of archetype. Indeed, the importance of Templatism may be but a reassertion of the fundamental role of archetypes.

In our experience of the world matter and information are never separate. Indeed, they may be inseparable. But until the differences in the kind of existence which matter and information possess can be clarified, we may postulate pure information. That is a separate level for the existence of archetypes-templates. But pure information or not, archetypes and templates require a multilevel world: one level on which archetypes-templates exist and another level for their manifestations. Modern science avoids such a view, choosing to restrict all causes to a single level. Since causality is also viewed as locked into temporal sequences, this approach forces explanations to conform to a linear view of time. The archetype-template view liberates causality and explanations from narrow linearity. It allows both determinism and entelechy.

cf. ^{Buddhist} The story of the dismemberment of the king's chariot

TEMPLATONICS

INTRODUCTION

Basically the subject of causality is about linkages, with the usual notion being that causality is about a particular kind of linkage, viz., about uni-directional linkages. [cf graph theory] But the usual notion of a linkage is a linear one. So contemporary views of causality are restrictive in being both linear and uni-directional. These restrictions limit applications to infrastructures or grounds that are either chain-like or tree-like. Linear, uni-directional linkages are not readily applicable to more complex networks or to interactions between network and ground (vertical interactions). This has resulted in a third restriction, all causalities must be horizontal or one level. [These notions may be traced to John Locke's three restrictions to critical thinking or modeling: What is earlier is primary, what is smaller is primary, and what is visible is primary. id est, causality is from past to future, from small to large (reductionism), and does not need to consider the infrastructure, only the horizontal context.]

Computer simulation is revealing the severe limitation of these 18th century views which have been absorbed into modern thinking. Parallel computing allows computations to involve several evolving processes simultaneously, freeing from "Lockean causality". [see James Bailey's book, After Thought]. But simultaneous processing is not total liberation from linear uni-directional thinking. An entirely new paradigm for both figure and ground is needed. An attempt at this is what is here labeled, TEMPLATONICS.

OVERVIEW

The term templatronics is appropriate since the central idea involved is that of a template. But the fortuitous occurrence of PLATO within the word is also appropriate, for the idea of template is closely related to Plato's concept of archetype. What we shall here refer to as a template is an informational pattern, either static or dynamic, that governs the form(s) that matter and/or energy may assume. Plato's archetypes were also patterns or scenarios of an abstract nature that manifested themselves from time to time on the material level. Manifestations could vary considerably in setting and personae, but the plot would always be the same. Until we have better understanding of the relation between information and energy, we assume that templates or archetypes exist on an "informational level" which is the source of the information that governs all material structures. (Whether the templates/archetypes are "pure information" is for the present unanswerable.) In assuming the existence of (at least) two cosmological levels, we are not making a radical departure from present views which posit fields, forces, and other representations that disregard Locke's insistence on visibility. The principal advantage of the template/archetype model is that it divorces causality and time, allowing not only past-future, future-past, and bi-directional causalities, but also *sine-temporum* causality. However, instead of Plato's pre-existence of the archetypes, the templates may pre-exist, evolve, or be created and governed by some "meta-template".

EPI

DIALECTO.WP6

97/04/03; 97/05/01; 97/05/08; 97/05/12

ON DIALECTICS

The terms 'dialectic' and 'dialectics' have been defined and redefined by various philosophers from Plato to the present. Aristotle, Kant, Hegel, and Marx each gave different meanings to the terms. Why 'dialectic(s)' should be repeatedly redefined instead of replaced by neologisms is either because its roots allow different emphases [The Greek, δία = right through or one against another; λεκτικός = good at speaking; διαλεκτικός = argument]. or because each philosopher is seeking to grasp and articulate some elusive fundamental essence that linguistically underlies the word. Plato held that dialectic referred to first principles; Aristotle to the level of ideas that required no hypotheses; Kant for the difficulties and errors that arise in conceptualizations beyond the world of phenomena; Hegel for an adversarial process consisting of principles or forces he called theses and antitheses, that resolved themselves through syntheses; Marx and Engels married Hegel's definition to an ontological materialism, elaborating with such attributes as all entities consist of opposing elements making their stability temporary.

With this antecedent of philosophical freedom in how one may use the term 'dialectic', I here propose to name by 'dialectic' any basic pair of forces or principles that operate with or against each other to effect emergence. Unlike Marx, I allow that certain dialectical forces cooperate instead of compete. I also allow that certain dialectical forces do 'time sharing', they multiplex in the TDMA mode. I also postulate with Plato certain primary dialectics that create the 'ground' for the 'figures' of other dialectics; that is, the primary dialectics form and sustain the stage that supports the changes, the dramas, that take place on that stage. Hence, the following definition:

DIALECTICS: Forces, energies, ^{OR TRENDS} or principles, that work with and/or against one another, whose interaction effects emergence or obliterates existing order.

At dialectical interfaces, 1) some form of emergence occurs either through synthesis or creation; or 2) some species of obliteration or extinction removes existing inhibitors, resulting in the release of energy and the renewal of potential. Dialectics are engines that generate complexity, manifest new levels, ~~or~~ even create new worlds.

EPI

DIALECTICAL PROCESSES

SOME EXAMPLES:

▷ YIN/YANG

The usual generic term for dialectics is Yin/Yang. However, many more specific dialectics have been subsumed in this term, such as Masculine/Feminine, Concentrated/Dispersed, etc.

▷ INDIVIDUALIZING/HOMOGENIZING

This is a dialectic that I have never seen mentioned but that seems very pervasive. I call it Uniqueness/Equalization. There is a great struggle in the world between the forces of homogenization and the forces seeking to generate and protect uniqueness. For brevity, I have labeled these GEP, a General Equalization Principle and GUP, a General Uniqueness Principle. In physics, the second law of thermodynamics is a special case of the former, and Pauli's exclusion principle is a special case of the latter. In theology, orthodoxies are homogenizations, heresies are pursuits of uniqueness.

References: GUP/GEP 1996#69; The Glory of Uniqueness 1994#30;
Kinship and Uniqueness 1991#83

▷ CONTACT/SEPARATION

This dialectic, sometimes called Departure/Return or named Isolation/cosmopolitanism by Chamberlain and Moulton of the University of Chicago who first enunciated it early in the present century. It was used to explain much of what happens in bio evolution. Unlike some other dialectics, it is oscillatory or time multiplexed.

▷ FORMING/DISSOLVING

This is the dialectic expressed in mythology by the opposition of Apollo and Dionysus. Dionysus is always escaping the forms that Apollo would capture him in. The human spirit is always escaping the prisons that the human intellect would imprison it in. This is fittingly symbolized by the bread of intellect and the wine of spirit. We must have worldviews, but we must ever abandon and transcend them. We must go from Ptolemy to Copernicus to Digges to Wright to Shapley to Hubble to ... This is also a time multiplexed dialectic.

References: Bread and Wine 1996#59;

- ▷ EXTINCTION-RADIANT ~ forming/dissolving
- ▷ SPLITTING-BRIDGING ~ departure/return
- ▷ STANDARDIZING-COMPETING
- ▷ ORDER-FREEDOM
- ▷ ACTUALIZING-POTENTIALIZING
- ▷ ETHERIALIZATION-MATERIALIZATION

RESERVING - CHANGE

"TALL SKINNY BOX" REVISITED

Models are constructed as analogues, as metaphors, out of words, out of symbols, out of equations, out of archetypes,...

A model is a bridge between human understanding and a cosmos. A cosmos is multi-faceted, it can accept many projections, i.e. be modeled in many ways. Examples are the spiritual world, the Great Pyramid, both can accept many projections. Humans as finite creatures must select facets to serve as the total, it is our finiteness that underlies our requirement of consistency.*

In selecting a cosmos and a model for it, we are trying to understand ourselves for we are also a cosmos. Thus a model is a device to match four cosmoses. Man and World, Material and Spiritual.

cosmoses?

The value of a model is measured basically by three parameters:

- Comprehensiveness or Inclusiveness (how many fits) i.e. the extent of the domain or range of phenomena fitted.
- Precision or Accuracy (how good the fits) i.e. the degree of closeness of fit
- Simplicity or Succinctness (how straight the edges) i.e. the number of axioms ("epicycles") in the model; the number of inputs, of arbitrary constants, etc.

wise prediction

There is also the matter of consistency, of which there are two kinds, self or internal and consistency with other models. (This is the domain of Ratna Sambhava). The criterion of consistency

is related to the value of monism, the goal of total unity within the one. However, sometimes unity is a synonym for simplicity.

Other values, such as utility, range of applicability, or elegance are in large measure determined by the above three.

If we imagine a "cognition space" of three dimensions along whose axes are the measures of the above three parameters, then the value of a model is measured by the volume of the model in such a space. However, the reciprocal of simplicity must be used as the third axis.

In such a space we used to say the the notion of God, as a model or explanation, was like a tall skinny box. The inclusiveness was almost unlimited, the simplicity was in one sense ultimate, but the precision was almost entirely lacking, in that no predictions could be made with the model. A replacement hypothesis or model in modern times is the notion of 'Chance'. Its volume, like God's is very large in IP/S space. Its inclusiveness is somewhat less, its simplicity is about the same, but its precision is much greater. In any event at the present, the two models with the greatest volume are God and Chance. [i.e. Dice]

The approach of Karl Popper is to look at the negations of the parameters: What is the extent of non-fits or contradictions of the model, what is the extent of precision. Negation either delimits the inclusiveness or stretches the precision.

* There is really no such thing as inconsistency only there are different views of a more profound whole.

What is the plural of cosmos? - a word for which ~~is~~ a plural of universe?

PATERNO4.DOC

March 11, 1993

From BELONGING TO THE UNIVERSE p117-118

Self-organization

COG
FOUR THOUGHT
3 - THOUGHT

FRITJOF: The funny thing about the concept of self-organization is that it can be presented as having a "trinitarian" nature. These are the aspects: the pattern of organization, the structure, and the process.

The pattern of self-organization is the totality of relationships that define the living system's essential characteristics. This pattern can be described in an abstract way without referring to energy, physical substances, organisms, and so on, without using the language of physics and chemistry. It's an abstract pattern of relationships.

The structure of a living system is the physical realization of this pattern. The same pattern may be realized in different biological structures (a cell, for example, or a leaf or a flower), and these structures are described in the language of physics and chemistry.

The error most biologists make today is to work on the structure level and to believe that by knowing more and more about the structure, they will eventually know life. But, they will never know what life is as long as they limit themselves to its structural aspects. Only when they also take into account the pattern will they be able to really grasp the phenomenon of life.

Now, the continual realization of the pattern of self-organization in a specific biological structure involves a dynamic process, the life process. It involves the continual self-renewal of the organism, adaptation of the environment, learning, evolution, and so on. And this life process, according to Bateson, is essentially a mental process. That's the third part.

DAVID: Once you step from your pattern into the process of its realization, how do you avoid the idea that by studying, for instance, neurophysiology, you will come to understand psychological processes!

FRITJOF: You can not derive the pattern from the structure. You have to study and understand it independently. You see, I can tell you whether a given system is self-organizing or not. But if you give me the condition that I will have to stick to the language of physics and chemistry and not go beyond it, then I won't be able to tell you. I have to go beyond the material aspect and speak about abstract patterns of relationships.

Fritjof's three elements--pattern, structure, and process--are what I have been phrasing as Information, Matter/Energy, and Will/Enterprise. These are not independent. Information requires substance for manifestation. And information is related to the 'quality of energy', i.e. entropy. The presence of matter ~~by itself~~ creates density time, but kinetics requires that there be conversion from density time to motion time. This conversion process is covered by the word will.

PATTERN - A WORD THAT INCLUDES FORM

See also Scraps, 2000, #77, #78

THE IMPROBABILITY CHANNEL PART III

The "formal age" of empirical science may be said to have begun with the publication of Francis Bacon's inductive canon. [Novum Organum] in 1620. Scientific laws were to be established on the basis of the number of observations of the repetitive occurrence of an event or by consistent reproducibility of a result in the laboratory. Since Bacon there have been some epistemological modifications to his concept of induction. Principal among these has been the introduction of the statistical nature of so called "laws". This modification was required in order to incorporate the implications of quantum mechanics. Modified induction allows statistical validity in the face of negative instances, which is to say that probabilistic propositions or laws cannot be falsified, only rendered less probable. Statistical validity in replacing classical induction has replaced the concept of "truth" with the notion of "a probability of one".

Elementary probability theory tell us that the probability of repetition of an event equals,
 $P = k^n$

where k is the probability of occurrence of a single event and n is the number of repetitions that occur without an interruption. For example, in the case of tossing a coin, $k = 1/2$ [heads or tails] and n is the number of times heads is thrown without a tail occurring.[or vice versa] The inference of this is that for any event that repeats unvaryingly for large values of n, k must be equal to one. Otherwise P tends to zero as n increases. From this it can be inferred that the events in the natural order that unvaryingly repeat over and over possess no alternative but $k = 1$. Such events either belong to a part of the cosmos that is rigidly deterministic; or they are part of a highly improbable sequence that occurred throughout a certain length of time.

Consider the case where k is a very small number. That is, a great number of options are possible. The greatest probability for the occurrence of such an event is $n=1$. [The non-occurrence of such an event has the probability of one, i.e. $n=0$]. The inference is that the more variety and options involved in an event, the more remote its occurrence. [to say nothing of its repetition]. Knowing that a very large number of conditions must be met for the existence of life, we must conclude that its occurrence is highly improbable, unless of course there is some unknown built in parameter that limits the number of arrangements open to a large set of variables.

All of this has been predicated without its embedment in time.

In essence, induction predicates validity on the number of observations of the occurrence of an event. Most commonly, this *validity number* is the total number of independent observations of an event that give a consistent result. The validity number may be taken as the product of the number of occurrences of an event times the number observations of the event. Falsification is concerned with another number, the number of exceptions.

Basic questions that arise in the such an approach include: What is an event? What is an observation? What is meant by independent? and What results should be considered as satisfying the criteria labeled , "expected". These questions have been extensively discussed by many authors, but what is of interest beyond the repetitive and reproducible are the "fringe" cases that may possess high validity in spite of having a very low validity number, that is, those occurrences that may be valid but are extremely rare. How are these cases to be evaluated, in particular what degree of validity is to be assigned to a single occurrence of a unique event? Here the epistemological use of stochastics requires supplementing.

If, when a certain number of improbable events occur, and through some similarity they form a recognizable *pattern*, then, although each event is improbable, the pattern itself may acquire statistical validity. The problem reduces then to "what is the difference between a statistically established *law* and a statistically established *pattern*" First, the occurrence of events indicating the existence of a law must be quite frequent while the occurrence of those events constituting a pattern may be quite rare. Second, the structure of a pattern may be of a more general or abstract nature than the structure of what we commonly consider to be a law. However, the similarities must be readily recognizable in order for there to be a pattern. Third, and most important, the specific incident of an event belonging to a pattern must possess some extremely improbable feature. In fact, paradoxically, it is the very improbability of the feature that supports the events validity! We can then assert, the validity basis of a law lies in the high *probability* of its events; while the validity basis of a what we are calling a pattern lies in the high *improbability* of its events.

One approach to constructing a bridge between time and meaning would be to postulate two worlds each occupying the same space but each operating at its own characteristic frequency. A slow universe and a fast universe, so to speak. [The communication engineers' FDMA, Frequency Division Multiple Access]. Jung has said that there are no such things as "accidents". When what we call an accident occurs, our world momentarily transfers command to the other world . The other world takes over and dilates time and leisurely adjusts causal sequences so that when compressed back to the clock speed of our world the events appear acausal and simultaneous, i.e. a synchronicity is created.

It appears that the "other", or "spiritual" realm, speaks to us through the improbable, while the physical world speaks to us through the probable. However, the improbable does not falsify that which has been inductively established, it only temporally interrupts it. Nor does the probable falsify the improbable. Highly improbable is not the equivalent of false.

~~EOG~~
EPI

BEYOND WORLD REVOLUTION (To the left of Lenin and Trotsky)

Marx called for a social revolution. Einstein called for a cognitive revolution. Neither of these revolutions will succeed until there is first an epistemological revolution. And what would be an epistemological revolution? It would be the

The real task is not to speculate about the world, but to change it. -Karl Marx

ability to perceive the world in an entirely different way. And a different way to perceive is more than a different way of organizing, more than a different way of thinking. It amounts to transcending our traditional

subjective point of view and discovering further sensory channels to complement our physical senses. And how is this to be done? It has already been done. Done by those who have learned the transforming power of meditation. Meditation changes the way we perceive everything, the world, ourselves, and each other.

Meditation is thus an alternate epistemology, a different way of knowing. Those who have practiced extensively indeed see the world quite differently, and quite contradictory to the way we traditionally have perceived it.

We shall require a substantially new manner of thinking if mankind is to survive. -Albert Einstein

Also those at the forefront of discovery who have employed traditional epistemology, have in this century concluded that the world as we have known it is not the world as it really is. Penetration into the micro- world, the world of quantum mechanics, has revealed that many of our perceptions are illusions. Everything is far more interconnected than we have ever perceived. Entities we have accepted as distinct are but facets of a single entity. Entities we have accepted as localized in space and time exist far beyond their visible boundaries. Divided entities, whatever their spatial separation, seem to be able to communicate instantly. These and other findings of modern physics closely resemble the nature of things as perceived by some who have achieved understanding from their commitment to the epistemology of a meditative practice.

The epistemological revolution taking place, whether from visions in the zendo or from interpretations of accelerator data, requires us to review and revise our ontologies, our axiologies, our theologies, our cosmologies, in short our entire world view. In time revised knowledge will alter our way of thinking and will "trickle down" to our modes of social and political organization. Then we shall have a successful social revolution and a successful cognitive revolution.

EPI

ON DIALECTICS

The original meaning of the term *dialectics* was an iterative exchange of questions and answers, the method used by Socrates to develop deeper insights and understanding. We are not quite sure whether Socrates already had in mind an answer he wanted to reach or he was using the method as an exploratory device to enhance his own enlightenment. Plato proposed a similar iterative process for the acquisition of more comprehensive hypotheses for explaining increasingly inclusive sets of phenomena. The basic ideas involved in dialectics were exchanges and iteration.

Several centuries after the Greeks, the idea of iterated exchanges was again taken up by G. W. F. Hegel (1770-1831). He used the term dialectics for the placing of two contrary propositions in juxtaposition to produce a more inclusive proposition. Hegel called these contrary or opposing positions *thesis* and *antithesis* and the resulting product, *synthesis*. Hegel also included the operation of iteration: the synthesis resulting from the preceding dialectic would become the thesis for the next dialectic. And if the process were iterated a sufficient number of times, Hegel felt that the final synthesis would be an *absolute idea*. While Hegel did not specify the source of the subsequent antitheses, he was careful to discriminate between contraries and contradictions. The dialectic process would only work with contrary ideas not with contradictory ideas. In other words the ideas had to face each other in the same arena, not walk past each other.

While Hegel's dialectics focused on contrary theses, Karl Marx extended dialectical interactions to struggles between general categories, such as the struggle of man against nature. He called the man vs. nature interaction *dialectical materialism*. Marx became fascinated with interpreting dialectical synthesis as resulting from a struggle between the components. With the help of Friedrich Engels, he focused dialectical materialism on the economic realm and the struggle between social classes. But a prize fight, a war, a class struggle is not a dialectic. There are winners and losers but rarely any synthesis or emergence, and except for revenge no iteration. Marx' ideas when put into practice resulted in dystopias not utopias. But unfortunately the term dialectics became largely associated with Marx and Communism and has been challenged and discredited. But if we return to the methodology described by Socrates, Plato, and Hegel, dialectics need to be reconsidered.

The key to dialectics is in Hegel's term *contraries*. Warring nations, prize fighters, economic classes may be opponents, but they become contraries only when their interactions and exchanges result in a synthesis. Confusing opponents with contraries not only mislead Marx, it has been a trap for many. In addition to opponents another pair not to be confused with contraries is *opposites*, such as male/female, good/evil, yin/yang. That two opposites engage one another does not necessarily effect a synthesis nor constitute a dialectical process. Zarathustra's eternal struggle between Ahura Mazda (good) and Ahriman (evil) has had neither a winner nor loser, much less a synthesis. We have no reason to expect opposites entering an exchange to

effect an emergence. Indeed, if the antithesis is the complete *opposite* of the thesis, then the resulting synthesis will turn out to be a null, that is,

$$T + (-T) = 0.$$

Of course zero or nothingness is an absolute idea, but when does the synthesis of opposites result in anything beyond a cipher?

Another discrimination that must be taken into account is that between repetition and iteration. The ball going back and forth from court to court is repetitive exchange. But for there to be iteration there must result a change in the overall situation as a consequence of the exchange. If one player faults, there is a change in the score. The court to court exchange resumes until again there is a change in the score. In this example, repetition is the court to court exchange, iteration is the step wise change in the score. Confusion between repetition and iteration also results from the fact that different dialectical processes operate at a different frequencies. [Even a single dialectic process may operate at several frequencies.] At low frequencies we can follow Socrates question and answer exchanges, and perceive the emerging syntheses. But at high frequencies, in Newton's third law, action and reaction appear to be acting simultaneously. Repetition and iteration merge and disappear. ¹Recapitulating: For there to be a dialectic there must be a pair of contraries, they must engage by exchanging, there must result a synthesis or emergence from their engagement, and there must be iteration employing the synthesis in a new engagement.

INVERSE DIALECTICS

The iterated dialectical process is an homogenizing process, leading to some ultimate single absolute idea, be it symbolized by zero or one. [both are species of nothingness] Consequently, we ask, Is there an "*inverse* dialectical process" that leads to the creation of variety and diversity? [Something besides splitting a zero, creation ex nihilo.] In western culture the drive to a monistic world view (a theory of everything) has been so great as to preclude looking for processes leading to the creation of differences. [We have been so involved with the homogenizing cancer cell that we have neglected the wonders of the stem cell. Also, while a converging series, like iterated Hegelian dialectics, goes to single value, some diverging series take on multiple values. Divergence a possible metaphor for an inverse dialectic?] Stephen J. Gould has claimed that bio-evolution itself is a process that creates diversity. Granting that this is so, the king pin of the process is mutation, and mutation is swept under the rug of randomness, which is about as specific and illuminating an explanation as "God did it". But if the random, or iterated random, can generate diversity, then we have been ignoring something of basic importance. ¹

¹ It can be shown that white noise modulated by white noise results in a gaussian, and iteration reduces the dispersion, on and on to a dirac function. [cf, the central limit theorem]

EPI

FOURDIAL.WPD

June 9, 2001

MORE ON DIALECTICS

Type 1. Dialectic The Hegelian Dialectic

Simultaneous operation of opposing forces or principles resulting in creation or innovation at the interface. The Hegelian dialectic is an example. Thesis, antithesis resulting in a synthesis.

Type 2. Dialectic The Antiphonal Dialectic

The operation of opposing forces or principles acting alternately rather than simultaneously. All engines are examples of this form of dialectic. It is symbolized by the caduceus. [cf Wheeler's form of the game of 20 questions]

Type 3. Dialectic The Skew Dialectic

The operation of opposing forces or principles acting simultaneously but on two different levels or in two different SPACES, resulting in increase in one SPACE and simultaneously decrease in another SPACE.

Type 4. Dialectic The Inverse Dialectic

The effect of reversal of the direction of operation of a Type 1 dialectic resulting in the creation or emergence of opposing forces or principles out of a null. An example is the emergence of matter and anti-matter from the null Planck particle.

A universe is a set of fixed boundaries within which certain rules obtain, but open to what may occur within the bounds and through the operation of the rules. All four types of dialectics operate in a universe. The sequence in which they operate on Brahman or the Sunyata determines the properties and contents of a universe. Furthermore, universes may be imbedded within one another in the manner of Russian matroska dolls, that is in an hierarchical manner; or may be organized into strange loops, uroborus universes; or in a holographic manner.

Two force dialectics are analogous to Kepler's laws regarding the dynamics of two bodies. Triadics, the involvement of three forces or principles, would result in complexities, chaos, and non predictability, as in three and multi-body problems in dynamics.

Placing centrifugal force (expansive) against the planck force, \implies the planck force is contractive: Equilibrium at the Schwarzschild limit: $Mc^2/R = c^4/G \rightarrow M/R = c^2/G$
 Placing gravitational force (contractive) against the planck force: $GM^2/R^2 = c^4/G$ gives $GM/c^2R = c^2R/GM$, or $M/R = \pm c^2/G$, not a conventional equilibrium, but an "inversion".
 The question arises when is the planck force contractive and when expansive?
 Is this a type 3 dialectic?

EPI

FOUR BASIC ISSUES

I. The Homogenization-Diversification Dialectic

Diversification within a whole. e pluribus unum,

Examples: The Jewish experience, Ecologies as wholes, Life as a whole

Survival of a whole depends on the diversity it contains.

Survival of diversity depends on the whole it supports.

Homogenized sets self-destruct.

An homogenized set ceases to be a whole. Such a set can survive only by becoming a unique element in a larger set.

II. Cause vs Will

The universal causality principle of science contradicts freedom of will.

UCP predicates an unbroken chain of causality since a "first cause" [eg the Big Bang]

Freedom of will predicates the ability to break such a chain.

Agents, such as living organisms, may possess the power to break the chain.

There is also the possibility that all innovation originates outside the system.

This issue may involve the nature of time and the ability of life to make desired consequences play a causal role.

Cause vs Will underlies such issues as design vs chance, even religion vs science.

Morality is meaningful only if there is choice.

There is choice only if UCP can be violated.

III. Power over the Table

In the social order ultimate power lies in the control of what is on the table of discourse.

Control over what is allowed on the table and on what is selected from the table.

This is a matter of who and what. Of chefs and menu makers, of selectors and choices.

In fact there are three levels: Chefs who create the dishes,

Managers who decide what is to be on the menu,

and the public [or media] who select from the menu..

In the arts and literature getting onto the table, dishes onto the menu, is relatively open.

Selection from the table is largely free, but somewhat guided by the media.

In science and philosophy not only the dishes but also the Chef

must be pre-approved by the menu managers.

This limits what is on the menu largely to tradition [with occasional exceptions]

In politics, even in so-called democracies, the menu is carefully controlled by managers.

The dishes and the menu are restricted and framed, but selections from what is allowed on the table are open to voting with decisions determined by a majority.

IV. Representation vs Reality

More significant than the mind-body problem is the representation-reality problem.

One school holds that representations are to be as isomorphic to reality as possible.

[eg logical positivists]

Another school holds that representations are necessarily

floating and that this is a good thing. [cf Wittgenstein]

DYADIC PROCESSES

Much has been written about the two perspectives of time-- time as linear and time as cyclical. Some cultures such as Modern Western and ancient Hebrew view time as linear. This is the view that time is only duration. It is the view that manifests itself in history, in evolution, in progress, and in learning. Other cultures such as ^{the} Celtic and Mayan view time as cyclical. This is the view that time has quality. It manifests itself in kairos, the existence of propitious and unpropitious times for certain activities. Time is an engine that drives or governs nature and human activity. Some philosophers maintain all time is cyclical; if it appears linear it because the current cycle has such a long period that we perceive only a small portion of the cycle. Cosmologists cannot decide which kind of time is ultimately overriding. It seems to depend on whether the universe is open or closed.

In this essay we want to focus on dyadic processes: cyclical processes that are representable by two states. Perhaps the most general dyadic process is departure and return. Toynbee considers this process to be the fundamental cyclical process underlying human history. Chamberlain and Moulton have extended departure and return to cover geological periods and bio-evolution. In one sense all dyadic processes are special cases of departure and return.

Some dyadic processes:

MATERIALIZATION AND ETHERIALIZATION (cf. Mumford)

This process presupposes the existence of two worlds, the material and the spiritual, or in modern physics the quantum and macro worlds. In classical Christian tradition there is the materialization of the Incarnation and the etherialization of the Transfiguration. There is in the Eucharist the etherialization of transubstantiation, the bread and wine becoming the Body and Blood. In quantum physics the collapse of the wave function is a form of materialization, an incarnation. Observation bringing the particle which was everywhere and nowhere, everywhen and nowhen, into here and now.

STRUCTURING AND DISOLVING

This process is represented by the opposing gods Apollo and Dionysius. Apollo is ever ordering and structuring, Dionysius ever is dissolving and liberating. "Dionysius is always escaping the forms that Apollo is creating for him". or "The human spirit is ever escaping the molds that the human intellect is

casting it in". This process, similar to materialization and etherialization, requires however only one level or domain not two. (The alchemists' concretization and sublimation can belong to either dyadic process depending on the number of levels involved).

SEPARATION AND UNION

Chamberlain and Moulton considered that in evolution departure and return took the special form of isolation and cosmopolitanism. There was a period in which the elements were insulated from one another followed by their coming again into communion. A physical example of this is the action of an airfoil moving through the air. The air is split by the foil resulting in a 'dialogue' between the air flow above the foil and the air flow below. The result of the dialogue is *lift*. The two flows return to one after producing lift. This process is basic to the creation of *consciousness*. An entity must split in order that there can be dialogue. The dialogue is the internal interchange that facilitates the development of self-awareness and consciousness. The split results in creator and creation, two separated parts in dialogue. But after the dialogue the two separated parts desire to come together and be one again, in order that there be fulfillment and completion. Other examples of separation and union include: development and testing, genotype and phenotype, monopoly and divestiture.

fragmentation + consolidation

Other dyadic processes include:

- ▶ Plotinus' Ascending and Descending
- ▶ Caution and Courage
- ▶ Pessimism and Optimism
- ▶ Bear market and Bull market
- ▶ Expansion and Consolidation
- ▶ Innovation and Assimilation
- ▶ Switching between
 - open and closed
 - specific and general (local and global)
 - wide field and high resolution (zooming)
- ▶ Giving and Receiving (sending and taking)

It is interesting that bread and wine can be used to symbolize many of these dyadic processes. The bread of materialization, the wine of etherialization; the bread of Apollo, the wine of Dionysius, or the bread of Brahma, the wine of Shiva. The bread of isolation, the wine of communion; The bread of form, the wine of emptiness.

EPI

CAUSALITY and DIALECTICS

This is a look at some of the ways in which we interpret our encounters with diachronic sequences of events.

Add definition of diachronic perichronous

SINGLE STREAM SEQUENCES *Monob*
Causality

The common interpretation of a diachronic sequence of events is causality. Each temporally preceding event is thought to cause the succeeding temporal event. This form of causality is past oriented. *κairos*

Finality

The cause of the events in the sequence is some state yet to be realized. This is goal or future oriented causality.

DOUBLE STREAM SEQUENCES *Duals include telematonics*

Synchronicity

Two streams of events intersect in a meaningful manner without visible causal connections. Or, the interposition of an apparently extraneous or anomalous event meaningfully into a diachronic sequence. A special case is called 'serendipity'.

Dialectics

The repeated intersection and interaction of two streams of diachronic events which modify one another and create interpositioned causal chains. The Caduceus of Hermes symbolizes the dialectical process. One example is the Hegelian or Herakleitian dialectic: Thesis interacting with Antithesis resulting in a synthesis.

SPECIAL TYPES OF CAUSALITY

Some Species of Determinism

I. External formulae processes

In general II can be → I

A sequence is generated by a formula or recipe which produces the n^{th} event by substituting n into the formula. *- a template? ∫? dual + mono templates?*

II. Implicit processes

Horizontal non-dual

1) The n^{th} term of the sequence is generated from the properties of the $(n-1)^{st}$ term. That is the structure of the next event is defined completely by the structure of the last event.

2) Markovian process: The n^{th} term depends jointly on the structure of the $(n-1)^{st}$ and $(n-2)^{nd}$ events. An example is the Fibonacci sequence in which each term is equal to the sum of the two preceding terms.

3) The structure of the n^{th} term is determined by the structure of the preceding sub-sequence of m terms where $m > 2$ and less than the total number of preceding terms. *~ Maxwell's singular point, also chaos theory*

4) The structure of the n^{th} term depends on the entire history of the sequence, on all the preceding events.

5) Each successive event is independent, *Camus' existentialism*

6) Causality and Time completely divorced

wreak Calvinism God can intervene scientific determinism + strong Calvinism

ONT

But preservation of uniqueness alone would not assure Brahma of having his variety. It is also necessary that something new be created.

The Pauli Exclusion Principle:-

In an atom there can never be two or more electrons with the same 4 quantum numbers.

The 4 quantum numbers defining orbits:

- s spin rotation +, -
- n shell ~ energy
- l ~ angular momentum, revolution
- m tilt inclination of orbit

Uniqueness in atoms is basic to chemical bonding, the formation of molecules, i.e. → complexity

See also 1995 #25 Gurdjieff's Cosmogony, + Heisenberg's quote
Successive Removal of Constraints allowing access to potential

See
Some notes on back of 1996 #45 re Science & the already homogenized

ONT

EDWHITE1.P51

DISK:TIME

December 12, 1991

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.

ONT

UNIVTYPE.WP6

October 1, 1997

WHAT IS A UNIVERSE?

The usual concept of a universe is that entity which includes all that exists, with the additional property of possessing an overall interrelatedness among the parts that results in "oneness" of the whole. Apophatically, one could alternately say that outside the universe or besides the universe there is nothing. These same attributes are sometimes also assigned to the concept labeled God. Whether universe or God, it must be added that any entity with such attributes is totally alien to common experience.

But in our times the term universe has taken on different meanings and attributes. The term is one used by cosmologists and astronomers to refer to the totality of physical objects that exist, whether directly observable or inferred by theories. The attributes of totality and oneness have been maintained but restrictions are placed on the nature of the included objects. These are limited to those that possess some degree of physical energy, that is have mass, motion, and/or extension in some form or other. But while the concept of universe has retained its attributes of totality and oneness, the models used to describe the universe have evolved.

The Ancient idea of an earth centered universe consisting of a set of transparent spheres containing the planets or wanderers, culminating in a final sphere that contained the non-changing starry objects, has been modified time and again over the centuries. The center was moved to the sun, the starry sphere was replaced by three dimensional space filled with objects at various distances subsequently recognized as being other suns. More recently the universe became the Milky Way, billions of stars with the sun not even near the center, but orbiting planet like about the distant center with a period of some 200 million years. Then earlier in the present century came two radically major modifications. First that there were many galaxies, like but exterior to our milky way, and at greater distances than hitherto conceived. And second, these galaxies were all moving away from one another. If the ultimate physical denizens of the universe were galaxies, then the universe was expanding. Finally in recent decades it was observed that the universe was of a fractal nature, with the galaxies clustered and with the clusters themselves clustered, with great voids or gaps between the successive orders of clustering.

Sometimes concept occurs before percept. Something is theoretically predicted then later observed. Such was the order of the arrival of black holes to the assemblage of known denizens of the universe. But these objects, informationally sealed off from their exteriors, challenge not only the traditional models of the universe but challenge the traditional concept of universe. It is now a completely new ballgame.

A universe traditionally consisted of all that existed, now it seems that a universe consists more properly of all that is informationally accessible. This idea leads to two views: a universe is all that is observable, or a universe is all that is knowable (by whatever means). The existence attribute must be abandoned. Kant long ago made similar distinctions, differentiating phenomena and noumena.

I. The phenomenal: experienced by the senses (or their instrumental extensions)

II. The quasi phenomenal: extrapolated from the phenomenal by rational or mathematical constructs.

III. The noumenal: exists, but is inaccessible to either our senses or our formal extrapolations. [An extrapolation of Gödel's results regarding axiomatic systems.]

[There is a curious dualism between the noumenal and human fantasy. The noumenal exists but is unknowable, fantasy does not exist but is knowable. It here becomes necessary to postulate orders of both knowledge and existence.]
imagination + knowledge
levels

IMPROB.WPD

OCTOBER 30, 2000 rev NOVEMBER 30, 2000

THE IMPROBABILITY CHANNEL PART I

Since I find it difficult to accept the reality of any highly improbable occurrence, and since I have personally experienced several very improbable events, I have sought a rationale for their treatment. Part II of the "Improbability Channel" [Scraps 2000#78] is a draft attempt to get a handle on this matter. In Part II it says, *When a sufficient number of improbable events occur that fit the same pattern, while each event is improbable, the pattern itself acquires statistical validity.*

The specific pattern I am concerned with here could perhaps be labeled "the resurrection pattern". It is the pattern that is recorded in a Bible story where Mary Magdalene encounters one who had been precious to her and who recently died. In her story she actually saw, heard and spoke with that person who was physically dead. This story has been interpreted and elaborated to fit any number of theological dogmas. I can readily disbelieve many of those interpretations, but I can also readily believe that this story describes a specific occurrence of a recognizable and perhaps not altogether rare manifestation of an archetype. The story being well known allows the useful name: The Resurrection Pattern.

I recount here two personal experiences of this pattern:

When Art and I brought my wife Donna's ashes here a few days after her death. We were unloading the car and were each occupied with different tasks, being some 20 feet apart, when suddenly, independently and simultaneously, we both felt a strong presence. We turned to each other and at the same instant each of us yelled to the other, "Did you feel that? It's Donna!" We knew the reassuring presence was Donna. That event occurred in early June 1998.

The second event occurred in late October, 2000. My close friend, Robin, had been ill for several weeks with terminal cancer and the inevitability of her death was soaking into our psyches. On Sunday evening October 29, Susan called me about 8:00 p.m. telling me that Robin had passed away about an hour earlier. A few minutes later that night I went outside and looked up and saw the new moon. I was struck that the moon was exactly as it appeared in Woodland hills as I left the hospital an hour after Donna died. Did Robin and Donna both chose the same time-of-moon to die?

But the improbable event occurred the next morning. For several weeks I had been going at least twice daily into my meditation room and focusing for Robin's recovery and freedom from pain. It was my ritual to touch a special candle dedicated to her while supporting her in my thoughts. But I must mention here that for several months, as far back as February, the fluorescent light in the meditation room had become defective. When the switch was thrown, the light would come on only partially, at low intensity. On one occasion during all of those months when I was at a deep level of meditation the light suddenly jumped to full brightness and remained high until turned off at the switch. But routinely it only came on and stayed low. I should have repaired the light, but I felt it unnecessary. Bright light is not really needed in a meditation room.

Early on the morning after Robin had died, I got out of bed and went directly to the meditation room and turned on the light switch. The usual low light came on and I could see my way across the room to the altar where Robin's candle stood. I walked across and stood silently for a few seconds before the altar, then reached to touch the candle. At the nanosecond my hand touched the candle the light instantly turned up bright! Overwhelmed, I sat and meditated for some time in the brightly lit room, trying to interpret what had happened. On leaving I turned the light off. About an hour later I went back, entered the room, threw the switch, but the light remained low. And it has not turned bright since.

What did all of this mean? At the instant the light came on, I somehow knew it had to do with Robin and that she or something had devised a physical way to send me a message. This was a last gift coming from a dear friend, reassuring me and telling me that she was alright and in a state of bliss in a place of intense joy and happiness. The same message Donna had sent to Art and me.

It is recorded that when asked whether he believed in a life after death, Jung said "I don't believe, I know" After all I have witnessed of the transitions from this life of those two most remarkable souls, Donna and Robin, I can now join Jung in that special way of knowing.

Certainly there are many ways to interpret these events. Coincidence, random fluctuations in the circuitry, or perhaps certain mental powers that are activated at singular times that can affect physical systems. But the interpretation that resonates with me is that these improbabilities did not originate in the physical world but in an interaction between the physical world and some other realm that has often been called "spiritual".

THE IMPROBABILITY CHANNEL PART I

*HUMAN LIFE IS DRIVEN FORWARD BY ITS DIM APPREHENSION
OF NOTIONS TOO GENERAL FOR ITS EXISTING LANGUAGE.*

—A. N. WHITEHEAD

The age of empirical science may be said to have begun with the adoption of Bacon's inductive canon. [Novum Organum, 1620] Scientific laws were to be established by repetitive observations of their occurrence and by their consistent reproducibility in the laboratory. Since Bacon two epistemological modifications to induction have been adopted: The falsification notions introduced by Karl Popper, and the statistical nature of "law" introduced since quantum mechanics. While Popper limited generalizations, quantum mechanics, on the other hand, allowed statistical validity in the face of negative results, which is to say that probabilistic propositions cannot be falsified. [only rendered highly improbable]. In essence, induction predicates validity on the number of observations of the consistent occurrence of an event. Most commonly, this *validity number* is the total number of independent observations of an event that give the expected result. Falsification is concerned with another number, the number of exceptions. What ratio of the *exception number* to the *validity number* leads us to acceptance or rejection of a law? Statistical validity has replaced classical induction and the concept traditionally called *truth* has been replaced with probability one.

Basic questions that arise in the such an approach include: What is an event? What is an observation? What is meant by independent? and What results should be considered as satisfying the criteria, "expected". These questions have been extensively discussed by many authors, but what is of interest beyond the repetitive and reproducible are the "fringe" cases that may possess high validity in spite of having a very low validity number, that is, those occurrences that may valid but are extremely rare. How are these cases to be evaluated, in particular what degree of validity is to be assigned to a single occurrence of a unique event? Here the stochastics of epistemology require supplementing.

If, when a certain number of improbable events occur, and through their similarity they form a recognizable *pattern*, then, although each event is improbable, the pattern itself may acquire statistical validity. The problem reduces then to "what is the difference between a statistically established *law* and a statistically established *pattern*" First, the occurrence of events indicating the existence of a law is quite frequent while the occurrence of those events constituting a pattern is rare. Second, the structure of a pattern may be of a more general or abstract nature than the structure of what we commonly consider to be a law. However, the similarities must be readily recognizable in order for there to be a pattern. Third, and most important, the specific incident of an event belonging to a pattern must possess some extremely improbable feature. In fact, paradoxically, it is the very improbability of the feature that supports the events validity! We can then assert, the validity basis of a law lies in the high *probability* of its events; while the validity basis of a pattern lies in the high *improbability* of its events.

Among events of high improbability must be included what C.G. Jung called a *synchronicity*. These are improbable happenings that intrude into an ordinary sequence of events in a meaningful manner. There are no visible causal connections, but there are meaningful consequences. Synchronicities interact with probable events in such a way as either to meaningfully redirect them or bring them to an unforeseen but meaningful conclusion. The question that arises here is, what is meant by meaningful? Meaningfulness has to do with subjective expectations regarding fitting a well recognized [hence probable] pattern or archetype. Thus a synchronicity reconciles the improbable with the probable, the acausal with the causal, and infers that there is innovative creation continually joining with what already exists. [Subject to the approval of Ratna Sambhava].

Another species of improbable event is known as a *miracle*. Over centuries countless so-called *miracles* have been well documented. But since the laws of nature are basically statistical, a miracle is neither a violation of an inductively established law nor a falsification of that law. From the viewpoint of probability theory, a miracle is but an improbable event. However, when a sufficient number of miracles constitute a pattern, as pointed out before, that pattern has far greater statistical significance than any of its improbable components.

Supplementary to the probable, the so-called "laws of nature", we need to note four kinds of improbable events:

- 1) Events that are exceedingly rare, but may be re-occurrences of some long term cyclical phenomenon.
- 2) Improbable events that taken collectively follow a recognizable pattern.
- 3) Synchronicities
- 4) Miracles

For the first, there must eventually emerge some kind of temporal regularity. For the second, there must eventually emerge some other kind of recognizable regularity. The third and fourth are individually validated, not a part of a pattern. The third is validated both by acausal meaningfulness and some high improbability feature; the fourth by a high improbability feature alone. As with every occurrence, improbable as well as probable, in each of the four kinds a message is being sent. With laws of nature the message is affirmation. With the improbables it is "There are more things in heaven and earth, Horatio, Than are dreamt of in your philosophy."

Independent means different observers, different places, different times.

HAMLET Act I, scene II

THE IMPROBABILITY CHANNEL PART II

*Human Life Is Driven Forward by its Dim Apprehension
Of Notions Too General for its Existing Language.*

—A. N. WHITEHEAD

Of equal, or possibly of even more significance than the probable events we tend to classify as “laws of nature”, are various kinds of improbable and unique events. These are usually denied or ignored by an epistemology which restricts itself to the repeated and reproducible. [read the scientific method]. Here we note four kinds of improbable events:

1) Events that are exceedingly rare, but may be re-occurrences of some long term cyclical phenomenon. Eclipses were such phenomena for the ancients.

2) Improbable events that taken collectively follow a recognizable pattern. If, when a certain number of such improbable events occur, and through their similarity they form a recognizable *pattern*, then, although each event is improbable, the pattern itself may acquire statistical validity

3) Synchronicities

Among events of high improbability are those that C.G. Jung called *synchronicities*. These are improbable happenings that intrude into an ordinary sequence of events in a meaningful manner. There are no visible causal connections, but there are meaningful consequences. Synchronicities interact with probable events in such a way as either to meaningfully redirect them or bring them to an unforeseen but meaningful conclusion. One of the questions that arise here is, what is meant by meaningful? Meaningfulness has to do with subjective expectations regarding fitting a well recognized [hence probable] pattern or archetype. Thus a synchronicity reconciles the improbable with the probable, the acausal with the causal, and infers that there is innovative creation continually joining with what already exists.

A basic feature of a synchronicity is timing. Synchronicities always involve ~~of~~ temporal improbabilities. For a synchronicity consists of a confluence of events, whose occurrence may individually be probable but taken in toto constitute an improbable coincidence. That is, the basic improbability in a synchronicity lies in the improbability of the coming together of the constituent events at the same moment in time. And as Jung defines, a synchronicity in addition always involves meaningfulness, either a meaningful message or an action that meaningfully redirects the course of events. Time, ^{and} meaning and improbability, a curious triad that has traditionally been called either luck, fortune, or fate.

4) Miracles

Another species of improbable event is known as a *miracle*. Over centuries countless so-called *miracles* have been well documented. But since the laws of nature are basically statistical, a miracle is neither a violation of an inductively established law nor a falsification of that law. From the viewpoint of probability theory, a miracle is but an improbable event. However, when a sufficient number of miracles constitute a pattern, as pointed out before, that pattern acquires far greater statistical significance than any of its improbable components. We must agree with Hamlet, "There are more things in heaven and earth, Horatio, Than are dreamt of in your philosophy."

With reference to the first event reported in "The Improbability Channel Part I" [Scraps 2000#77], Jung might hold that its significance derives from the improbability of the "presence" *simultaneously* striking two observers. The event was not confined to one individual. As for the second event, Jung might view its significance as residing in the improbability of the *precise timing* of the light with touching the candle. In both events there is an element of a high improbability in the timing. In fact, considering the rarity of the light's turning bright over a period of months, the probability of this coincidence was infinitesimal. Both of these events readily fit Jung's concept of synchronicity, a highly improbable event that occurs at the intersection of the physical and the non physical, and is the conveyer of meaning.

THE IMPROBABILITY CHANNEL PART III

The "formal age" of empirical science may be said to have begun with the publication of Francis Bacon's inductive canon. [Novum Organum] in 1620. Scientific laws were to be established on the basis of the number of observations of the repetitive occurrence of an event or by consistent reproducibility of a result in the laboratory. Since Bacon there have been some epistemological modifications to his concept of induction. Principal among these has been the introduction of the statistical nature of so called "laws". This modification was required in order to incorporate the implications of quantum mechanics. Modified induction allows statistical validity in the face of negative instances, which is to say that probabilistic propositions or laws cannot be falsified, only rendered less probable. Statistical validity in replacing classical induction has replaced "*truth*" with "*probability of one*".

Elementary probability theory tell us that the probability of repetition of an event equals,

$$P = k^n$$

where k is the probability of occurrence of a single event and n is the number of repetitions that occur without an interruption. For example, in the case of tossing a coin, $k = 1/2$ [heads or tails] and n is the number of times heads is thrown without a tail occurring. [or vice versa] The inference of this is that for any event that unbrokenly repeats for large values of n , k must be equal to one. Otherwise $P \rightarrow 0$ as n increases. From this it can be inferred that the events in the natural order that similarly repeat over and over possess no alternative [i.e. $k = 1$]. They belong to a part of the cosmos that is rigidly deterministic; or they are part of a highly improbable sequence that occurred within a certain length of time.

Consider the case where k is a very small number. That is, a great number of options are possible. The greatest probability for the occurrence of such an event is $n=1$. [The non-occurrence of such an event has the probability of one, i.e. $n=0$]. The inference is that the more variety and options involved in an event, the more remote its occurrence. [to say nothing of its repetition]. Knowing that a very large number of conditions must be met for the existence of life, we must conclude that its occurrence is highly improbable, unless of course there is some unknown built in parameter that limits the number of arrangements open to a large set of variables.

All of this has been predicated without its embedment in time.

In essence, induction predicates validity on the number of observations of the occurrence of an event. Most commonly, this *validity number* is the total number of independent observations of an event that give a consistent result. The validity number may be taken as the product of the number of occurrences of an event times the number observations of the event. Falsification is concerned with another number, the number of exceptions.

Basic questions that arise in the such an approach include: What is an event? What is an observation? What is meant by independent? and What results should be considered as satisfying the criteria, "expected". These questions have been extensively discussed by many authors, but what is of interest beyond the repetitive and reproducible are the "fringe" cases that may possess

high validity in spite of having a very low validity number, that is, those occurrences that may valid but are extremely rare. How are these cases to be evaluated, in particular what degree of validity is to be assigned to a single occurrence of a unique event? Here the epistemological use of stochastics requires supplementing.

If, when a certain number of improbable events occur, and through their similarity they form a recognizable pattern, then, although each event is improbable, the pattern itself may acquire statistical validity. The problem reduces then to "what is the difference between a statistically established *law* and a statistically established *pattern*" First, the occurrence of events indicating the existence of a law is quite frequent while the occurrence of those events constituting a pattern is rare. Second, the structure of a pattern may be of a more general or abstract nature than the structure of what we commonly consider to be a law. However, the similarities must be readily recognizable in order for there to be a pattern. Third, and most important, the specific incident of an event belonging to a pattern must possess some extremely improbable feature. In fact, paradoxically, it is the very improbability of the feature that supports the events validity! We can then assert, the validity basis of a law lies in the high *probability* of its events; while the validity basis of a pattern lies in the high *improbability* of its events.

One approach to constructing a bridge between time and meaning would be to postulate two worlds each occupying the same space but each operating at its own characteristic frequency. A slow universe and a fast universe, so to speak. [The communication engineers' FDMA, Frequency Division Multiple Access]. Jung has said that there are no such things as "accidents". When what we call an accident occurs, our world momentarily transfers command to the other world. The other world takes over and dilates time and leisurely adjusts causal sequences so that when compressed back to the clock speed of our world the events appear acausal and simultaneous, i.e. a synchronicity is created.

It appears the "other", the spiritual realm, speaks to us in the language of the improbable, while the physical speaks to us in the language of the probable. And the improbable does not falsify that which has been inductively established, it only temporally interrupts it. Nor does the probable falsify the improbable which lies in a realm that is beyond reason.

pattern or clustering of event → concept of causality

THE IMPROBABILITY CHANNEL PART III

A synchronicity is a confluence of events, whose occurrence may individually be either probable or improbable but taken in toto constitutes an improbable coincidence. That is, the basic improbability in a synchronicity is the improbability of the timing of the constituent events. Unlike miracles and other improbable events, a synchronicity always involves a temporal improbability. And as Jung defines, a synchronicity in addition always involves meaningfulness, either a meaningful message or action that redirects the course of events. Time, meaning and improbability, a curious triad that has historically been labeled, luck, fortune, fate, or destiny.

One approach to constructing a bridge between time and meaning would be to postulate two worlds each occupying the same space but each operating at its own characteristic frequency. A slow universe and a fast universe, so to speak. [The communication engineers' FDMA, Frequency Division Multiple Access]. Jung has said that there are no such things as "accidents". When what we call an accident occurs, our world momentarily transfers command to the other world. The other world takes over and dilates time and leisurely adjusts causal sequences so that when compressed back to the clock speed of our world the events appear acausal and simultaneous, i.e. a synchronicity is created.

MYTH, MATH, and METAPHOR

How We Try to Understand the World

The best way to explain things to children is with a story. In fact for most of us stories are a very good way to help us understand many things. So it is not surprising that our first attempts to explain the world to ourselves was with stories. And these stories are called *myths*. They are not necessarily true in either a literal or historical sense, but they contain profound insights about ourselves and the world we live in, about origins and destinies. What is special about myths is they ~~can~~ speak to our feelings as well as to our intellects. They can, with ~~the same~~ ^{one} set of words, convey several messages ranging from the tautological to the profound. What they say to us depends on our own experience, on what our ears are able to hear. Myths usually describe basic principles, forces, and archetypes ^{with} anthropocentric models. Principles become gods, forces become tathagatas, and archetypes become specific ^{dramas} ~~accounts~~. What we can say about myths is that ^{they} ~~they can be~~ more inclusive ^{of all} ~~of all~~ the species of human experience than any other representation we have so far found.

While myths may be inclusive, they lack ^{the} here-and-now accuracy or precision which our intellects oftentimes require. But we have discovered that there is a necessary trade off between inclusiveness and precision. This trade off is metaphorically similar to the trade off between field of view and resolving power in a picture where there are only a finite number of pixels or bits available. These pixels may be distributed for enlarging the field of view or for increasing the resolving power but their finiteness forces a trade off. So if we require high precision the price is truncation of the extent of the ~~picture of~~ world we can describe. ^{This} brings us to mathematics, a powerful and precise representation of a *subset* of what we experience of the world. This subset consists of what is enumerable and measurable, of what is repetitive and regular.

With mathematical representations we focus on our intellects, on reason, on logic, and on consistency. We exclude most of what is not quantifiable, the portions of our experience involving feeling, compassion, beauty. This is not to say that we may someday find more precision for representations of quality, but we must not become obsessed with any one representation to the exclusion of others. It is well to have both inclusive [mythic] and precise [mathematical] representations at our disposal.

10 rec 13 10m 44 comp 10/28/03

COSMOS TO CONSCIOUSNESS

AXIOM 1.

The cosmos is here taken to be the totality of all that in any sense exists. It is all that there is. All parts of this cosmos are interconnected, making the cosmos a unity, a plenum, a continent, no islands. In addition no part of the cosmos exists independently or independent of the other parts. *[This implies that Brahman or whatever existed prior to cosmos did not exist in the same sense that cosmos exists. But that with cosmos now existing, Brahman becomes part of and one with what it may have created.]*

AXIOM 2.

The cosmos may be divided into two parts which we shall call Subject–Object, such as I–Thou, observer–observed, knower–known. However, this dichotomy may be made in many ways. What is included in Subject and what is included in Object depends on the manner in which cosmos is “sliced” into the two parts. But what is not included in Subject is Object, and what is not included in Object belongs to Subject. Here the whole (cosmos) is the sum of the two parts. Further, each division or slice creates a set of ontologies.

AXIOM 3.

A particular “bridge” between the two parts of an ontological set which selects a specific member of the set is called an epistemology. Each epistemology thus describes a specific ontology that belongs to the particular ontological set created by the original Subject–Object slice.

AXIOM 4.

Each division or slice also creates a particular species of consciousness. Thus there are many possible consciousnesses each resulting from a particular dichotomy. And each governing the epistemologies that may be used.

SELECTIONISM

also Selective Skepticism
#

SELECTIONISM is the name chosen for a philosophical system based on the following premises:

- 1) An ontology is a representation, model, or picture of the universe. It is not a symbolic homomorphism of the universe, but is at best isomorphic to some facet of the universe.
- 2) Reality is a term used to designate the particular ontology that is accepted by a general consensus of the current population.
- 3) The tool by which an ontology is fabricated is called an epistemology. Epistemologies differ in their rules and methodologies regarding how to select those experiences and observations that are to be considered in the construction of an ontology, and on how the collection of selections is to be interpreted and organized [i.e. by theory]. But more basic is the feedback that these rules and methodologies have in determining what experiences and observations become accessible or inaccessible, including the bio-built in cognitive and sensory limitations of the designers of the epistemology themselves.
- 4) An epistemology consists of two parts: an infrastructure or framework with which to contain and organize the observational or experiential inputs, and the inputs themselves.
- 5) Order is an attribute exhibited by an ontology, imposed in part by the epistemological framework, in part by the human subjective sense of order, and in part a reflection of the indigenous structure of the universe.

=====
The Epistemological Process Involves:

- A) Collecting a set of experiences or observations
 - These are selected not created,
 - Their selection depending on conscious and unconscious criteria and the cognitive and sensory limitations of the selectors [eg humans]
- B) Representing, symbolizing, and simulating the experiences
- C) Significating the experiences according to assumed criteria
 - Some Signification criteria:
 - a) Frequency and regularity of Repetition
 - b) Conformity with the picture that has already been built
 - This involves a question/answer dialectic, the questions directing future observations derive from the existing picture, directing a deterministic path of evolution
- D) Selecting or rejecting experiences on the basis of the significations
- E) Organizing the representations into a model or picture
- F) Interpreting the picture,
 - Testing its correspondence with the previously selected set of experiences

Since the experiences collected are initially "randomly" encountered, it cannot be claimed they are created, except in the sense that they are the imprint of the result of an interaction between the observer [human] and an already existing context. Since humans derive from some initial selections, *pure* creation is pushed back to a "beginning". The above processes do not speak to an ab initio creation, which may be either ex nihilo or per some "mutually causal" dialectic.

Selectionism

03-07-11
SPRING LAKE

Note 03-07-10

The selection becomes the selector
The creation ~~replaces~~ ^{become} the creator
takes over from

wheeler } Loops
Merria }
and loops
create existence

Games of 20.

Creator & committee decides object

Wheeler version

Selector guided by his selections
i.e. the selections take over

Selectionism \Rightarrow determinism, inevitability
or creation " "
or effects " "

ПРОШЛОЕ НЕ ПРЕЖДЕ

including in inevitability of its self-destruction c.f. Derrida

It considers its destination to be ^{one} ~~the~~ Truth, selectionism $\Rightarrow \exists$ TRUTH

Selectionism is disjunctive, exclusive, [OR] \rightarrow vs / them
reduces or destroys options

Selectionism = simplification, leads to conflict
 \rightarrow 1 parameter

Empiricism to determine what remains on the table ^{mano}

But empiricism is not, as conventionally thought, an "absolute" selector

Empiricism is itself a menu, depending on the selected

~~the~~ manner in which the experiment or observation
is designed c.f. Q.M. \rightarrow wave or particle

further, Empiricism is directed by selected questions

\therefore dialect can become a fool of selectionism

Selectionism admits menus and seeks ~~criteria~~ ^{law} criteria, e.g. empiricism, rules
by which to select. Its goal is many to one, e pluribus unum

Assumes there is a right result
or right answer

VARIETY IN EXTINCTIONS

On the planet earth a phenomenon occurred called "*life*". While possessing the capability of generating much variety, this particular development, *life*, showed early signs of contesting Brahma's Theme: The actualization as many varieties as possible. As *life* evolved it became increasingly clear that its primary intent was its own survival. Survival in itself could consistently operate in accord with Brahma's Theme, but some species of *life* succumbed to the illusion that the best way to survive was by dominating and controlling contexts. This delusion became particularly evident when a particular sub-aggregate of *life* called humanity appeared. This species not only had the resolve to control and dominate but began to use its creative talents to facilitate that goal. They even established gods that commanded them to dominate and to subdue [Genesis 1:28]. It further developed that sub-aggregates of humans iterated this injunction to dominate and sought to subdue and control other humans. In fact the drive to dominate and subdue all that differed manifested itself recursively down to each human sub-group.

The threat posed by humanity to Brahma's Theme caused alarm and Lord Shiva was sent to earth to investigate. He reported back that much of life harmonized with Brahma's Theme of actualizing variety. Many species lived symbiotically and formed ecologies that enhanced variety. However, the species *homo sapiens* was definitely threatening to the Theme. Humans rendered species extinct, destroyed ecologies, and did not even live in harmony with members of their own species. After dominating other species [except for a few bacterial and viral species] their drive to dominate led to them to focus primarily on the means to dominate others in their own species. This they did with countless wars and increasingly sophisticated weapons. Lord Shiva reported, "As the situation stands today, if not thwarted, this species will make impossible any fulfillment of Brahma's Theme on earth.

Brahma, on hearing the report, instructed Lord Shiva to remove this threat to the Theme. Lord Shiva recalled that when threats to destroy diversity on earth had occurred in the past, he deflected asteroids to remove the threatening sources and restore the proliferation of variety. But to be in best accord with Brahma's Theme, there should be variety even in the modes of extinction. Lord Shiva then decided that an alternative way to extinction would be to leave humans to their own devices. Let them develop more powerful weapons and continue in their illusions. At a certain point their obsession with power, their will to dominate, in combination with the increased power of their weapons would solve the problem. But Lord Shiva was concerned that self-destruction of humanity by humans might do extensive damage to other agents on earth that were in harmony with Brahma's Theme. Measure was taken and while it was regrettable that many who served the Theme would be terminated, the risk of leaving *homo sapiens* on the planet was too great. Lord Shiva concluded that after the extinction a radiant would again occur and in good time the planet earth with its particular phenomenon, *life*, would rejoin the cosmos in contributions to Brahma's Theme.

MODELS OF MEANING SOME META ONTOLOGIES

The Zwicky-Feyerabend Paradigm

Two California physicists, questioning the dogmas that were creeping into science, independently proposed a radical paradigm. Each feared the trends to dogmatism that occur in any evolving system which limit and oppose alternative perceptions and ultimately result in stagnation. Fritz Zwicky, an astrophysicist at the California Institute of Technology, maintained that we know only partial answers to our questions and insufficient solutions to our problems. He concluded that we stop putting our energies into conflicts over what to select and what to reject and put our energy into the search for new alternative answers and solutions. Paul Feyerabend, a physicist and philosopher at the University of California at Berkeley, said Leave all views and perspectives on the table and replace any current criteria of right vs wrong or true vs false with a search for the deeper content common to all. Feyerabend maintained that there was no idea or system, however ancient or simple, that did not contain something to teach all others. Yes, these views are radical, even if they make good sense. Human history is mostly about struggles between religious, political, economic, and philosophical systems. None of which are without flaws and none of which are without a measure of validity. What Zwicky and Feyerabend are calling for is replace choice and conflict with search and synthesis.

Some Past and Present Ontological Views

World views formulated to give meaning (location, direction) to humans in the universe

Zarathustrian basic conflict

Buddhist basic harmony

Taoist a path

Scientific indifferent random

Utilitarian made for us

Transfigurative as you grow you will know

Chosen dominate take control

Michael Angelo reaching up and reaching down

Growing up then no parents

Selectionism

information ↔ material
matrix

emergence is about
a new man

each approach leads
to different questions

The selection becomes the selected

Godobi

NUMBER AND NOTHINGNESS

When it was found that there was no ^{Natural} number that could represent the diagonal of a square, whatever the ^{Natural} number that represented the side, a crisis in human cognition occurred. The quantity that we represent today by $\sqrt{2}$ was a bill of divorcement between geometry and arithmetic, between the continuous and the discrete, pattern and number, quality and quantity, [dimension and scale?]. The inferences were overwhelming. One of the most important being that there were numerical gaps between the natural numbers. Gaps? Gaps, indeed, gaps are nothing, nothingness, ignorable with impunity. However in the centuries since the crisis at Kroton, we have found ~~that it is~~ what we discover in the gaps repeatedly liberates us from our dogmas of perception and reason.

Continuity, the continuous, is the illusion we employ to enable us to ignore the gaps, to relegate nothingness, emptiness, the void, the domains of Nagarjuna, to meaninglessness. It has always proved easier to banish from thought something without a name than something with a name. But nothingness proved too powerful to ignore so it was finally felt better to corral it than to let it run namelessly wild. To fortify our stance against nothingness, we finally found it useful to give it a symbol, "0", zero. But along with the symbol came the fences to enclose it. It really was not a number like the others and to dignify this "no-thing" as a number was totally inappropriate. Further there were rules to be strictly followed in handling this deformed alien, such as never allow it to be a divisor! Once safely confined this no-thing could even be useful in our commercial pursuits, as a place holder and bottom line watershed between profit and loss. But beware, never to let the no-thing out of its cage.

But Zero leers at us threateningly from the bars of its cage. We know its power since it can send any quantity directly to an arithmetic trash bin, by the simple multiplicative operation,

$$A \times 0 = 0.$$

It challenges us with examples like this: "What is the solution of the equation,"

$$1) \quad X + 1 = 1$$

No problem, that's were we will let you temporarily out of your cage, answer $X = 0$.

"OK, what is the solution of the equation,"

$$2) \quad X + 1 = X$$

There is no solution, stay in your cage, there is no answer.

"Alright, what is the difference between the nothing "0" in case 1) and the 'no-solution' in 2)?"

Both are a form of nothing. You try to squeeze all my meanings into one symbol. Look at it this way: $\mathcal{N}_0 + 1 = \mathcal{N}_0$ an equation you accept. Is this not a solution to 2)?" Uh huh

"Then why not allow $A/0 = \mathcal{N}_0$? Or even $A/0_0 = \mathcal{N}_0$, $A/0_1 = \mathcal{N}_1$, ... $A/0_n = \mathcal{N}_n$?"

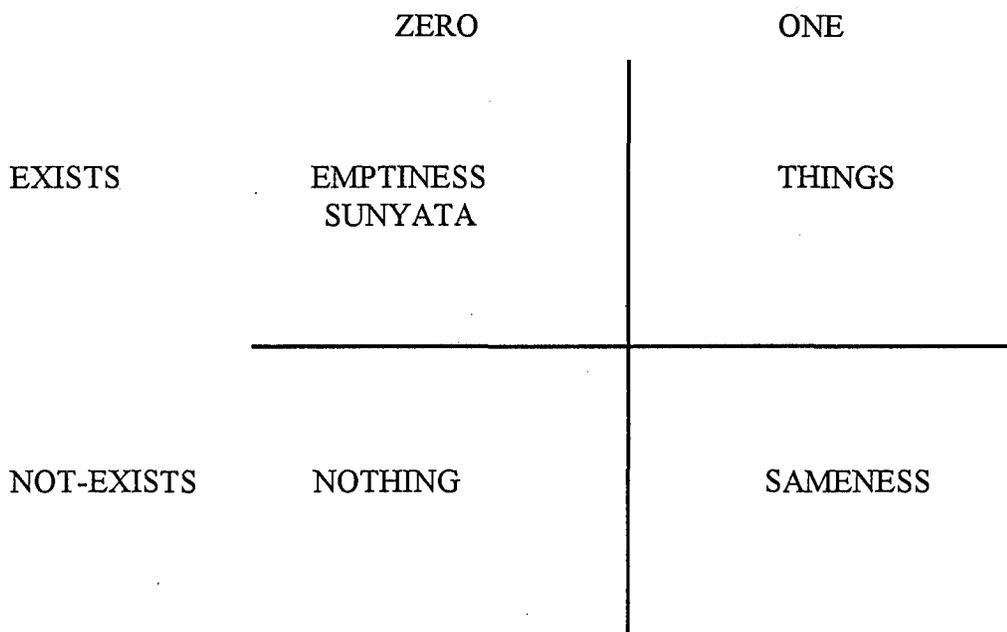
There are as many species of nothingness as there are of thingness, or everythingness. "

Yeah, but if we went along with your nonsense we would have to revise all our concepts from the law of the excluded middle to null sets. No way. We have done it this way for centuries and are not about to change.

NONTOLOGY PART I

THE NON-EXISTENCE OF ONE AND THE EXISTENCE OF ZERO

This paradoxical proposition can best be introduced with a quadric diagram:



Our conventional view of symbolizing is that of the upper right and lower left quadrants. We associate zero with nothing or the absence of things, with non-existence. We associate one (or some higher number) with the presence of things, with existence. However, the inverse symbolization using zero for existence and one for non-existence as in the upper left and lower right quadrants also makes sense if we pursue the following reasoning:

Consider the lower right quadrant: Eddington noted that "uniform sameness is the philosophical equivalent of non-existence."¹ Centuries earlier, before the introduction of zero, Pythagoras concluded that the number one was the correct symbol for nothing. He held that at least two of anything had to be present to confer existence. Eddington required that there be **diversity** in order for there to be existence. Pythagoras required that there be **multiplicity** in order for there to be existence. We may argue that Eddington and Pythagoras were really talking about perception rather than existence. Where there is no difference we perceive nothing. If there were only one color we would not be aware that there was such a thing as color. Only in there being two or more colors does the parameter or attribute of color come into existence or awareness. If there were only one tone (frequency), then there would be no tone. Only when multiple tones are perceived do we become aware of the existence of tone. The same argument may be made for texture, taste, aroma.

The Eddington perspective is that a parameter or attribute does not exist unless it takes on two or more distinct values. The Pythagorean perspective is that an object does not exist unless it has at least two realizations or manifestations. In either view, the necessary condition for material existence is diversity of quality or multiplicity of quantity, that is, a difference in some value. Human epistemologies require that material existence be experienced through perception—no perception, no existence. The epistemological requirements for non-material existence also depend on multiplicity of experience, either one event experienced by many observers or a multiple (repeatable, reproducible) event by more than one observer. **The key to what we call existence is multiplicity and diversity.** Hence one logically represents non-existence.

*9 things have
two possible*

Turning now to the upper left quadrant: The symbolization of existence with zero.

*If a thing has but one attribute
it does not exist*

*size mass
charge position*

*a point
point - not point*

THE EXPLORATION OF NOTHINGNESS—PART I

At the time of Pythagoras there was no **zero** in the number system. The association of the abstract concept of number with quantity of objects had over millennia been gradually developed, but the association of number with complete absence of objects was felt to be wrong: No object, no number. But Pythagoras felt uneasy about this and thought that there should be a numerical symbol for nothing. He concluded that "1", **one**, could stand for nothing, for the non-presence or non-existence of objects. Perhaps he reasoned from ordinals. If there were no second, no third, etc., or if there were simply no second, then saying something was first was meaningless. Whatever his reasoning, the implication of **one** representing or being nothing was that there had to be two or more of anything in order for it to exist. Equipped with the symbol "0", **zero**, which was introduced to the West centuries later¹, we hold Pythagoras' solution to nothingness to have been a quaint stroll down a dead end street.

However, there is something to be said for Pythagoras' view. Let us say that there is only one color, then we would not have the concept of color. Color would not exist. Only when there is more than one color does color come into existence.² Or if there were only one temperature, say 70° F all the time, we would not be conscious of temperature. Or more likely in Pythagoras' mind, the example of tone. If there were but one tone, then there is no tone. Only when there are many tones does sound or the awareness of sound come into existence. (Is this the origin of the Music of the Spheres which, it is said, we never hear because we hear it all the time?) It could even be said that Pythagoras' reasoning was supportive of paganism and pantheism. If there is but one God then there is no God. Monotheism infers atheism.

But what is valid in Pythagoras' approach is the fact that for a parameter (e.g. color) to exist or be recognized it must assume two or more values. We can then see the relation between conventional or **zero** nothingness and Pythagorean or **one** nothingness: There are two levels involved, the level of parameter and the level of values of the parameter. A parameter with one value is not recognized as a parameter; only when there are two or more values of a parameter does it come into existence (or awareness, depending on your ontological selections). **One** on the value level corresponds to **zero** on the parameter level; two or more on the value level corresponds to **one** on the parameter level. So when Pythagoras says that **one** can represent nothing, he means having only **one** value effects a **zero** or null parameter. This is not a quaint dead end at all. It reminds us that there may be many parameters of which we are not aware that are basic to the definition the world. We do not notice them because we perceive only one value, or they do not vary or change within our resolving power of space or time. Finally, we must give Pythagoras credit for a preliminary construction of what we now call category theory.

¹Although the Babylonians had a symbol for void as early as 500 BCE, Zero, our symbol for nothing was introduced to Europe by the Arabs in the 9th century. The Arabs obtained it from India, but exactly when it was devised in India is not certain. It is also of interest that the Mayans in meso-America had quite independently created a symbol for nothing as early as the third century.

²There is an ontological argument here which we shall avoid for the present. We will not here probe into existence versus awareness of existence.

THE EXPLORATION OF NOTHINGNESS PART II

Uniform sameness is the philosophical equivalent of non-existence—Eddington

From PART I we saw that Pythagoras felt that if there were only one of anything, it did not exist. He accordingly concluded that the number "1" could be used to represent nothing or non-existence in the manner we use the number "0" today. But it appears that what Pythagoras really had in mind was that the number "1" signified something that took on only one value, did not change, always remained the same. This would be something that we would be unlikely to be aware of. Centuries later Eddington came up with the same idea: uniform sameness in space or time would escape perception and as far as we were concerned would not exist. But if we make the distinction between existence and our awareness of existence, we can go along with Pythagoras and Eddington and use **one** to represent uniform sameness and hence non-awareness, but still use **zero** for non-existence.

In Part I we discriminated parameters and values. These may be represented as number pairs, $[p,v]$ with the provisos: If $v \leq 1$, then $p = 0$; and if $v > 1$, then $p = 1$. That is if there are two or more values, then the parameter exists in the sense of being in the domain of our awareness. But if no value or only one value (sameness) then the parameter does not exist for us. We shall take the first member of the pair to represent awareness or non-awareness with the possible entries p (a number > 1), and 1. p in the first place means awareness exists, 1 in the first place means no awareness. The second member will represent existence or non-existence, with possible entries v (a number > 1), 1, and 0. v in the second place means physical and perceptual existence, 1 in the second place means non-physical existence, and 0 means non-existence. There are six possibilities:

- $[p,v]$ represents that which physically exists and is perceptually experienced, the visible, the domain we usually designate as physical reality [Kant's phenomena]
- $[1,v]$ represents ontological domains which may physically exist, and even though changing ($v > 1$) for some reason (such as epistemological limitations) we are not aware of them, (or choose to ignore them), [Kant's noumena]
- $[p,1]$ domains which have non-physical existence, but of which we are aware. These are cognitatively rather than perceptually experienced. Example: mathematics
- $[1,1]$ domains which have non-physical existence, and of which we are not aware.
- $[p,0]$ domains which do not exist, but of which we are cognizant
 - Fiction, realms created by imagination
 - This could also include awareness of nothingness, the exploration of the gaps in existence, exploration of these realms may reveal that the non-existing portion of the universe may be as rich as the existing portion. And this non-existing portion may be knowable.
- $[1,0]$ no awareness and no existence, the domain of Nagarjuna and Buddhist contemplation.

Finally we must add $[0,0]$, our symbol for Total Nothingness.

The Meditations of Nagarjuna

First, if there be but one value of an attribute, then that attribute ceases to exist.

Second, if an entity has but a single attribute, then that entity ceases to exist.

Consider the Planck Particle and its attributes of energy, force, extension, time, and mass.

What are the energies of the Planck particle?

$$\text{There is } m_0 c^2 = 16.291442$$

$$\text{There is } G m_0^2 / l_0 = 16.291442$$

$$\text{There is } \hbar v = 16.291442$$

$$\text{There is } e^2 / \alpha l_0 = 16.291442$$

$$\text{There is } (\hbar c^5 / G)^{1/2} = 16.291442$$

According to the first proposition, since there is but one value for the attribute energy, the Planck particle does not possess energy.

What are the forces of the Planck particle?

$$\text{There is } m_0 c^2 / l_0 = 49.082989$$

$$\text{There is } G m_0^2 / l_0^2 = 49.082989$$

$$\text{There is } \hbar v / l_0 = 49.082989$$

$$\text{There is } e^2 / \alpha l_0^2 = 49.082989$$

$$\text{There is } c^4 / G = 49.082989$$

Again, since there is but one value for the attribute force, the Planck particle does not possess the attribute force.

Energy/Force = Extension. For each energy and every force, the quotient is $= -32.791547 = l_0$. It follows from the first proposition that the Planck particle does not possess the attribute size.

What are the times [or frequencies] of the Planck particle?

$$\text{There is } l_0 / c = -43.268366 \quad \text{There is } (l_0^3 / G m_0)^{1/2} = -43.268366$$

$$\text{There is } G m_0 / c^3 = -43.268366 \quad \text{There is } \hbar / m_0 c^2 = -43.268366$$

$$\text{There is } \hbar l_0 / G m_0^2 = -43.268366 \quad \text{There is } (m_0 l_0^3 / \hbar c)^{1/2} = -43.268366$$

$$\text{There is } m_0 l_0^2 / \hbar = -43.268366 \quad \text{There is } G \hbar / l_0 c^4 = -43.268366$$

$$\text{There is } G^2 m_0^2 / l_0 c^5 = -43.268366 \quad \text{There is } (G \hbar / c^5)^{1/2} = -43.268366$$

By the first proposition, the Planck particle does not possess the attribute time or frequency.

All Forces, ML/T^2 , are identical; all extensions, L , are identical; all times, T , are identical; therefore all masses, M , are identical. If all masses are identical then by the first proposition the Planck particle does not possess mass. By similar arguments, the Planck particle does not possess density, power, or charge.

The Planck particle does not possess any of the attributes: Energy, Force, Size, Time, Mass, Density, Power, Charge. What attributes then does it have? If only one attribute, then by the second proposition, the Planck particle does not exist. If no attributes at all, then it "doubly" does not exist!.

NUMBER AND NOTHINGNESS

When it was found that there was no ^{Natural} number that could represent the diagonal of a square, whatever the ^{natural} number that represented the side, a crisis in human cognition occurred. The quantity that we represent today by $\sqrt{2}$ was a bill of divorcement between geometry and arithmetic, between the continuous and the discrete, pattern and number, quality and quantity, [dimension and scale?]. The inferences were overwhelming. One of the most important being that there were numerical gaps between the natural numbers. Gaps? Gaps, indeed, gaps are nothing, nothingness, ignorable with impunity. However in the centuries since the crisis at Kroton, we have found what we discover in the gaps repeatedly liberates us from our dogmas of perception and reason.

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"OK, what is the solution of the equation,"

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There is no solution, stay in your cage, there is no answer.

"Alright, what is the difference between the nothing "0" in case 1) and the 'no-solution' in 2)?"

Both are a form of nothing. You try to squeeze all my meanings into one symbol. Look at it this way: $N_0 + 1 = N_0$ an equation you accept. Is this not a solution to 2)?" Uh huh

"Then why not allow $A/0 = N_0$? Or even $A/0_0 = N_0, A/0_1 = N_1, \dots A/0_n = N_n$?"

There are as many species of nothingness as there are of thingness, or everythingness. "

Yeah, but if we went along with your nonsense we would have to revise all our concepts from the law of the excluded middle to null sets. No way. We have done it this way for centuries and are not about to change.

"Until you begin to treat me as a collection of quantities, instead of a single quantity I will plague you with a rain of singularities"

$X+1=X$
 i.e. $1=0$ Pythagoras and Eddington understand that this equation is not a contradiction but has deep validity

when does $0=1$
 c.g., one option is the same as no option.
 • no difference = sameness or oneness

Non Standard Analysis
 the species of infinitesimals

Difference in the numerator \rightarrow multiplicity
 Difference in the denominator \rightarrow variety

same way in numerator multiplicity

same way in denominator multiplicity

$\frac{1}{2}, \frac{2}{2}, \frac{3}{2}, \dots$ a multiplicity of halves

$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$ a variety of fractional parts

but same 0 in denominator

[cf. G and $\Delta\mu$ switching from numerator \rightarrow denominator

$\Delta\mu$ in numerator \sim space

$\Delta\mu$ in denominator \sim mass

also $\frac{hG}{c^3}, \frac{hG}{c^5}, \frac{c^2}{G}$
 Space-time mass

N	D	
S	S	Pure Multiplicity
S	D	Semi Variety
D	S	Semi Multiplicity
D	D	Pure Variety

? Type of matter pure variety
 • Mass \sim variety
 \Rightarrow Space-Time \sim multiplicity
 flat 5-7 \sim pure multiplicity

$1^3 + 2^3 + \dots + n^3 = (1 + 2 + \dots + n)^2$
 a multiplicity of cubes one square

Proportion: $\frac{1}{2} = \frac{2}{4} \Rightarrow$ the sameness in difference and the difference in sameness

June 20, 1997

Some of the concepts that appear to be basically involved in exploring the structure of the world:

SYMMETRY

As defined by Herman Weyl: A structure that remains unchanged after the performance of a certain operation is symmetric with respect to that operation. Symmetry is thus associated with invariance, and consequently with conservation principles. It refers to an attribute that is changeless within change. [Therefore ~ SAT, the eternal. Symmetry provides a clue to the extra-temporal or is a bridge between the temporal and extra-temporal] cf 1995#65, re "perfect symmetry"

DIALECTICS

These are the forces of change, oftentimes being adversarial pairs obeying Newton's Third Law, "to every force there is an equal and opposite reaction". At other times dialectical forces may be mutually supportive in which case they are temporally multiplexed thus avoiding Newton's third law. In the case of opposing forces novelty occurs at the interface, in the case of supportive forces, the action is in effect an "engine" producing some form of change.

ORTHOGONALITY

Independence and interdependence are determined by orthogonality. Orthogonal forces or parameters operate independently of one another. However, orthogonal instruments must at some time and place intersect. Non-orthogonal parameters, on the other hand, are interdependent with a modification in one parameter effecting modifications in other parameters. The orthogonals intersect one another; the non-orthogonals modify one another. Orthogonal parameters are parameters that cannot be expressed in terms of one another. Orthogonality is the essence of dimensionality. Examples are the x,y,z dimensions of geometric space and the physicists' Mass, Extension, and Time. Parallelism is a special case of non-orthogonality in which there is independence without intersection. [quadric diagram: orthogonal:non-orthogonal::intersect:modify] [also skew instruments]; [zones of immunity to interaction, e.g. light cones]

LIMITS

Infinity is an illusion. In nature bounds are placed on all parameters. Bounds are discriminated from limits in that bounds are contextual while limits are internal. Bounds and limits take one of two forms: Cyclical or wall-like, [Kreisgrenze oder Mauergrenze]. The conditions of open or closed refer to the existence of intrinsic or self-imposed limits within systems. Open and closed have no meaning with respect to bounds which are SAT. A bound or limit is usually expressed mathematically by an

inequality, $a \leq b$. Among the bounds so far discovered and believed to be universal are:

- ▶ The Einstein Bound $v \leq c$
- ▶ The Heisenberg Bound $E.T \geq \hbar$
- ▶ The Schwarzschild Bound $M/R \leq c^2/G$
- ▶ The Bell Inequality

*also
absolute zero*

These bounds govern what is possible or not possible in the cosmos.

It is difficult at this point to causally order the fundamental concepts. Some items are independent, some are the results of others. What belongs to SAT, to primary dynamic principles, to resulting forms and structures remains to be discriminated. This study must be done by "successive approximations".

HIERARCHIES

Hierarchies consist of sets of levels where levels are discrete categories usually separated by existential voids or gaps. Levels may usually be indexed according to values of a single parameter, such as scale. Several classes of hierarchies may be distinguished:

REGRESSIONS

Regressions are hierarchies characterized by inclusion or containment. Commonly a regression is a set of systems within systems within systems, ... say in the manner of nested Russian dolls. Usually the members of a regression at all levels are similar in that they differ only with respect to the value of a single parameter such as size. Fractals are an example of a regression.

MODULAR HIERARCHIES

Whenever a hierarchy is a containment hierarchy in which the levels are not similar, it is usually referred to as a modular hierarchy. An example is the observed astronomical universe consisting of stars contained in galaxies contained in clusters contained in super clusters, ..

MODULATION

Modulation is a type of hierarchy in which a set of similar operations act between the levels. The most common form is a two level system in which the amplitude or frequency of one wave is modulated i.e. modified according to the properties of second wave. This process could be carried on beyond two levels.

STABILITY

Configurations equipped to resist the dialectics of change; perhaps in some sense possessing orthogonality to most dialectic vectors. Or possessing internal clocks that operate much more slowly than the clocks of "proper time". [Orthogonal to prevalent zeitgebers?]

In those days we had no money,
we had to substitute thinking

- Rutherford

Theory + Experiment

EXPLORATIONS: JULY 2001

The cosmos is a vast tapestry. It appears different at varied resolving powers or fields of view. We can select various scales of space and time from which to examine the cosmos, but there is no one position from which the whole can be viewed. Do the patterns woven into the tapestry repeat at different scales? [fractals] Does the texture determine what patterns are possible? [reductionism]. We ask: what is this tapestry for? who wove it? and how? And are we just viewing it or are we in some way weavers ourselves, not just making copies, but also participating in weaving the great tapestry itself, implying it is not yet completed? Or more fundamentally, is it even possible for us to ask the right questions?

We devise models which are bridges between our limited experience of the cosmos and what we imagine its total nature to be. We design coordinate systems in which we plot *facts* and *processes*. But from time to time we experience something that cannot be plotted in our coordinate system, then we realize that our coordinate system is not valid, and awaken to its being only a scaffold, an *interpretation* and that it must be replaced.

what already exists plays a role in what subsequently happens and comes into existence. Hence, what is missing from the casino model is a feedback from the distributions that can modify the pin pattern. For the falling balls gravity supplies the force or dynamic that operates the model. The role that *gravity* is playing in the model is played by *time* in the real world. Feedback in the model must operate against the direction of gravity, in the cosmos against the flow of time. How can a distribution alter the pin pattern? How does what currently exists shape the future? Is time a force like gravity? Or are both different types of a "meta-dynamic"? Isomorphism between the casino model and what is acceptable in physics appears to have broken down.

SYMMETRY

This file is read
in scraps

NUMLEVL2.WPD October 27, 1998 October 28, 1998

THE BASIC DESIGN INGREDIENTS OF THE COSMOS.

There is an interesting parallel between the discovery of the various kinds of numbers and the increase of human understanding both of the physical world of determinism and of the moral world of choice. This parallelism is not only an affirmation of the role of mathematics as a valid and extensive symbolism for the nature of the world, but also that mathematics can serve as a useful guide on a spiritual path. But Pythagoras understood this many centuries ago and organized communities dedicated to the mathematical path to knowledge and spiritual growth. Over time the fullness of the power of mathematics was ignored, as the doctrines of competing religious institutions prevailed over the philosophy of Pythagoras, relegating mathematics to a purely secular role. But in the present century the extensive implications of the role of mathematics in such realms as aesthetics and ethics are liberating it from its long confinement solely to matters of quantity. It is timely to reopen the qualitative aspects of number, not in the sense of the pseudo science of numerology, but in the sense of seeking deeper interpretations for what the numbers found in nature have to tell us. The grammar of mathematics, after all, underlies the grammars of music and art as well as of physics and biology. It is our best symbolism for representing the cosmos.

This approach to cosmic structure is based on levels of numerical symmetry.

Arithmetic Symmetry

In the first Pythagorean level, the structure's essence is symmetry and balance. The numbers involved are the positive and negative integers. The null or fulcrum of the first level is symbolized by the quantity *zero*. [$-x \rightarrow 0 \rightarrow +x$] The conservation laws of physics such as conservation of charge, angular momentum, or energy all derive from some basic symmetry. [The relation between symmetry and conservation was pioneered by Emmy Noether]. Symmetry-balance appears in modern game theory in the, "tit for tat" strategy. In the fields of morality and ethics symmetry-balance takes the forms of justice, level playing field, middle way (Madyamika). Many religions have this first level ingredient in their teachings, as for example, in orthodox Judaism, the teaching, "an eye for an eye, a tooth for a tooth". The logic of this level is Aristotelean two value logic based on the law of the excluded middle. The operation involved is negation. This level is cyclic (repetitive) and reversible.

Geometric Symmetry

The second Pythagorean level is based on reciprocity or inversion. The numbers involved are the rational numbers. The null is symbolized by the quantity *one*. [$x^{-1} \rightarrow 1 \rightarrow x^{+1}$] Inversion in the unit circle or unit sphere maps the exterior in a one to one manner onto the interior (and vice versa).

WHY DOES MATHEMATICS WORK ?

get quotes on this question.

Pythagoras answer was that the ultimate nature of reality is number. Before matter, before space, before time, even before there was thought, there was number. Kronecker said that, "God created the integers, all else has been the work of man. But Sir James Jeans held that God was more than the creator of numbers, God was a mathematician. Others go further and say that God is not only a mathematician, God is Mathematics. All of which is to affirm Pythagoras view that at the most basic level the nature of the physical cosmos derives from the properties of number.

There are several levels to the properties of number. Mathematics begins by considering the quantitative aspects of numbers and how they are combined. This area is called arithmetic. Next, intrinsic properties of numbers, relational properties and classes of numbers are considered, this subject is called Number Theory. From the arithmetic and number theoretic properties, new kinds of numbers are derived and abstractions and generalizations of all properties are constructed. This is what most mathematics in the past few centuries has been about. A third level of properties are the qualitative properties of number. This area, called numerology, has been avoided and denigrated by most mathematicians as having no rigorous basis. But the answer to why mathematics works might also require the unrecognized qualitative properties of number.

But beyond number are the plethora of things in the world . The question of why mathematics works, allowing the prediction of the properties and behavior of things involves the processes of referencing the observed properties of things to the properties of number. That is, how this referencing is effected plays an important role in why mathematics works.

EULER'S EQUATION

Perhaps the most famous and celebrated equation in all of mathematics is Euler's equation:

$$1 + e^{i\pi} = 0$$

It shows a relationship between the fundamental mathematical constants, 0, 1, e, π , and i ; a relationship which is both beautiful and surprising. But one cannot look at this equation without feeling it symbolizes some deep and important ontological property of the universe. It represents more than just how those particular constants fit together.

For example, let 1 represent existence and 0 represent non-existence. Then existence and non-existence are connected by

$$e^{i\pi} = \cos(\pi) + i \sin(\pi)$$

two orthogonal oscillations.

More Notes on Buddhism

EPISTEMOLOGY AND PRACTICE

For a Westerner, the first result from the study of Buddhism is that there are alternatives to the way we customarily look at the world. In the West we have focused on objectivity in the structuring of our worldviews. This does not take into account that so-called objectivity is but a particular subjective stance. The availability of alternatives arises from the experience of different subjective stances. In Buddhism a different subjective stance is acquired through the "Practice".

The Practice, or rather any practice, is in effect an epistemology in the sense that the result of the practice leads to a particular ontology and worldview. This has been noted in the West by saying that living a practice, such as a religious practice, is a step beyond a mere philosophical epistemology. The difference between a philosophical epistemology and a practice is the first results in knowledge, the second in understanding.

Since in creating a different subjective state of mind, as with a practice, we arrive at a new ontology, it is fair to say that an epistemology is a subjective state of mind. And since there is an isomorphism between epistemologies and ontologies, what is called reality is a product of a subjective state of mind. The traditional label for this situation in Buddhism is to call it *illusion*. I feel it is more to the point to recognize the non-essentiality of any world view, that reality is arbitrary rather than illusory.

Summarizing:

An Epistemology is a method of enquiry resulting in knowledge, in an ontology, in a world view.

A Practice is a meta-epistemology, a method of living resulting in both knowledge and understanding.

Adherents of different epistemologies naturally disagree on their ontologies.

All are neither right nor wrong, for there is no one right ontology. Each epistemology taps into a different facet of the *Mysterium of the Universe*.

Let us recognize the many faceted nature of the World and not use the term *illusion*.

Buddhists customarily recognize two facets of the World, that they distinguish as appearance and is-ness. Other ways to think about such a dyad are: material and spiritual, Eddington's two tables, form and emptiness, actuality and potentiality. (What is the difference between a facet and a level?)

Enlightenment has been called the ability to perceive simultaneously both is-ness and appearance.

November 14, 1998

TWO EPISTEMOLOGIES MEASUREMENT AND CONTEMPLATION

Measurement is an epistemology which leads to an ontology that exhibits the mathematical aspects of the cosmos. Contemplation is an epistemology which leads to an ontology that manifests the unity of all within the cosmos. Measurement is the parent of reason, the grandparent of logic, and the primary tool of science and technology. Contemplation is the parent of revelation, the grandparent of faith, and the primary tool of morality and religion. These two epistemologies, although displaying different facets of world, have frequently been regarded as adversarial. History has given us the conflicts of science vs. religion, reason vs. faith, chance vs. design, necessity vs. freedom, etc. But if what is exhibited by the world depends on the epistemological path by which we approach the world, then it is not a matter of which facet is true and which is false, but a matter of acquiring the ability to synthesize and integrate all facets of the world, whatever the epistemology of their source.

Contradictions, inconsistencies, and paradoxes are not properties of the world. They are the results of the limitations in the way we experience the world: Limitations of localization, limitations of biological structure, limitations of information processing capacity, ...and those acquired limitations imposed through our cultural presumptions and personal prejudices.

As humans we have two transcendent gifts-- Recognition and Imagination.

Recognition affirms for us that which is valid in experience. Recognition is not to be confused with recollection which depends on memory and therefore on previous experience. Recognition interfaces with the previously *unexperienced*, guiding us correctly in our encounters with the hitherto unknown. Nor is recognition to be confused with intuition, hunches or gut knowledge, all of which must subsequently be verified. Recognition contains in itself ultimate verification. It resides beyond proof, deduction, induction, verification and falsification. Indeed, it is that which establishes these methodologies as useful paths to knowledge.¹

Imagination is the great liberator, releasing us from the world of "is" to the world of "could be". It is the force that converts the static into the dynamic. It is the root of change, of evolution, and of all creation and creativity. It affirms the existence of facets of the world that lie beyond the determinism of the archetypes. It is the ultimate freedom from which all choice and options derive. It is more powerful than recognition which tells us of the "is", the actual, the facets of the world that exist. It is the open-ended creator of potential, of new facets, even of new archetypes. It dips into the Sunyata and brings forth new universes; it extracts the energies from white noise appropriate to create and sustain new forms. Indeed, it encompasses all knowledge. It is itself meta-knowledge.

¹Knowledge is either about that which already exists or that which is brought into existence by the act of knowing itself. cf Wheeler's version of 20 questions.

SOME NOTES ON ONTOLOGY, REALITY, AND EXISTENCE

I. The First Canon of Ontology

In traditional Western thinking it is logical to associate *nowhere* with non-existence and to associate *everywhere* with existence. This seems so fundamental it ~~needs~~ ^{requires} no comment. *However,* But the famous British astrophysicist, Sir Arthur Stanley Eddington asserted that "Absolute ~~uniformity~~ ^{uniformity is the ontological equivalent of non-existence.}" ~~Which is to say that sameness, invariance and changelessness are the proper logical associates of non-existence while difference, variation and change are the roots of existence. Nothingness is non-existent, not because it is nothing but because it is uniform and changeless.~~ It is not difficult to adopt ~~Eddington's~~ ^{Eddington would have} view if we substitute *perceptibility* for *existence*. Any substance which possesses absolute uniformity, all of whose properties are invariant throughout space and time, would be undetectable by our senses and its existence would escape our notice. Something must be here but not there or now but not later in order to be perceived. We can ^{thus go as far as to} agree that perceptibility requires there be **change** in space or time or both, but does it follow that if something is not perceivable in any way that it does not exist? We might go even further and agree that if something is not experientiable in any way then it does not exist. But is all experience reducible to perception? Are there not other modes of experience, other inputs to our minds than sensory inputs? Or does all experience rest ultimately on percepts alone? What about imagination? Before we can completely agree with Eddington we must answer these questions.

If, as is customary, we assert that that which cannot be perceived or experienced is for all material purposes non-existent, then we may conclude that **change** must be a necessary condition for existence. We may thus formulate the First Canon of Ontology:

UNIFORMITY-UBIQUITY <====> NON-EXISTENCE
CHANGE <====> EXISTENCE

Immanuel Kant ^{worked around this dilemma by} postulated two ontological domains into which the world could be divided: The phenomenal world was the perceptible or experientiable world, the noumenal world was the world that lay forever beyond perception or experience. According to the First Canon the noumenal world does not exist because it is imperceptible. Nonetheless, it is useful to postulate a domain beyond our usual powers of perception or experientiability, a domain in which there is no change, no here or there, no now or then, where x,y,z,t frameworks are meaningless; A domain of everywhere and nowhere, of forever and never, a domain without variables or whose variables are hidden.

We may speculate on the nature of this non-existent world. Since it is uniform and without change, existence/non-

which is to say that everywhere is not as much as nowhere, unless non-existence it everywhere is the same.

~~Sameness and changeless~~
→ non-existent
we might take a first step toward R's view if we could substitute -

* To go further with E we would have to be convinced that there exists ~~no categories~~ categories which we cannot perceive. We suspect there is much we cannot perceive, ~~the~~ ^{very} immediately the instantaneous and ubiquitous

Alternatively we might request E to allow us to substitute experience for existence

However,

notice

thus go as far as to

times
exists because can be informed if not perceived experienced

Domains of Existence
D1 Domain of Perception
D2 Domain of Experience
D3 Domain of Existence

D3 > D2 > D1
or if we say physical exist
P3 > P2 > P1

SOME NOTES ON ONTOLOGY, REALITY, AND EXISTENCE

EDMONTON 290-Y

I. The First Canon of Ontology

Samuel Butler, writing in the tradition of Thomas Moore's "Utopia", described an idealized non-existent country called "Erehwon", i.e. *nowhere* spelled backwards. His choice of name reflects the near universal association in our thinking of non-existence with nowhere. But the obverse association, non-existence with everywhere, strikes us as nonsense until we give the matter some thought. It was the British astrophysicist, Sir Arthur Stanley Eddington who asserted that "Absolute uniformity is the ontological equivalent of non-existence." What Eddington meant was that ubiquitous uniformity implies invisibility or imperceptibility, and further, in the tradition of Locke, that which is imperceptible to our senses does not exist. Any substance which possesses absolute uniformity, all of whose properties are invariant throughout space and time, would be undetectable and its existence would escape our notice. Something must be here but not there or now but not later in order to be perceived. In other words, perceptibility requires that substances **change** in space or time or both. And if, as is customary, we assert that that which cannot be perceived or experienced is for all material purposes non-existent, then we may conclude that **change** must be a necessary condition for existence. We may thus formulate the First Canon of Ontology:

we cannot perceive the world where things are everywhere (the spirit world?)

INVARIANCE UNIFORMITY-UBIQUITY <=====> NON-EXISTENCE
CHANGE <=====> EXISTENCE

PARADOX: we search for the invariants i.e. those things which do not exist on our level

Immanuel Kant postulated two ontological domains into which the world could be divided: The phenomenal world was the perceptible or experiential world, the noumenal world was the world that lay forever beyond perception or experience. According to the First Canon the noumenal world does not exist because it is imperceptible. Nonetheless, it is useful to postulate a domain beyond our usual powers of perception or experientiality, a domain in which there is no change, no here or there, no now or then, where x,y,z,t frameworks are meaningless; A domain of everywhere and nowhere, of forever and never, a domain without variables or whose variables are hidden.

this must be made into a dichotomous or vertical division

We may speculate on the nature of this non-existent world. Since it is uniform and without change, existence/non-existence is a dichotomy without meaning. The essential dichotomy seems to be that of everywhere/nowhere. But it is possible that this too is meaningless and everywhere = nowhere and forever = never. Or there may be some sort of binary switching between the two states of everywhere/nowhere which display themselves on the interface with our domain of existence as the laws of probability. It is interesting that humans have spent great time and energy in attempts to explore the noumenal world. Theologians, philosophers, physicists, occultists all have their views of this non-existent domain.

like a spinning wheel a coin heads and tails or is both heads & tails

EPICENTERS

SOME NOTES ON ONTOLOGY, REALITY, AND EXISTENCE

I. The First Canon of Ontology

Samuel Butler, writing in the tradition of Thomas Moore's "Utopia", described a similar idealized non-existent country which he called "Erehwon". Butler's land was named "Nowhere", but spelled backwards. A good choice for there is a strong association in our minds between nowhere and non-existence. But there is little or no association in our minds between everywhere and non-existence. It was the late Arthur Stanley Eddington noted that everywhere also implied non-existence. Eddington stated that "Absolute uniformity is the ontological equivalent of non-existence." More accurately, an absolute or ubiquitous uniformity implies imperceptibility, and we are conditioned to assume that that which is invisible or imperceptible to our senses is non-existent. Any substance which possessed absolute uniformity, all of whose properties were ubiquitously invariant throughout space and time, would be undetectable and its existence would escape our notice. Something must be here but not there or now but not later in order for us to perceive it. In general perceptibility requires substances to change in space or time or both. We may note in this connection that Torricelli discovered the atmosphere had pressure after he observed a change in the height of a column of mercury between the plain and the mountain top. If, as is customary, we assert that that which cannot be perceived or experienced is for all material purposes non-existent, then we may also assert that change must be a necessary condition for existence. It is change, spatial or temporal, that gives rise to existence. We may thus formulate the First Canon of Ontology:

UNIFORMITY-UBIQUITY $\left\langle \text{====} \right\rangle$ NON-EXISTENCE
CHANGE $\left\langle \text{====} \right\rangle$ EXISTENCE

Immanuel Kant postulated two ontological domains into which the world could be divided: The phenomenal world was the perceptible or experiential world, the noumenal world was the world that lay forever beyond perception or experience. According to the First Canon the noumenal world does not exist because it is imperceptible. Nonetheless, it is useful to postulate a domain beyond our usual powers of perception or experientiality, a domain in which there is no change, no here or there, no now or then, where x,y,z,t frameworks are meaningless; A domain of everywhere and nowhere, of forever and never, a domain without variables or whose variables are hidden.

We may speculate on the nature of this non-existent world. Since it is uniform and without change, existence/non-existence is a dichotomy without meaning. The essential dichotomy seems to be that of everywhere/nowhere. But it is possible that this too is meaningless and everywhere = nowhere

and forever = never. Or there may be some sort of binary switching between the two states of everywhere/nowhere which display themselves on the interface with our domain of existence as the laws of probability. It is interesting that humans have spent great time and energy in attempts to explore the noumenal world. Theologians, philosophers, physicists, occultists all have their views of this non-existent domain.

Lest we succumb to a semantic trap, we must avoid generalizing the concept of existence beyond its attributes given in the First Canon. We may meaningfully discourse on ontological domains that do not exist so long as existence is associated with experienceability in accord with conventional modes of perception. That is to say, an ontological domain may exist in accord with the most general use of the term exist, but not in accord with the definition of existence requiring the presence of change.

ON PERCEPTABILITY, ACUITY, AND AWARENESS

It is important to recognize the relationships between change and perceptibility. Perception does not automatically occur when change occurs, perception may occur only when the change occurs at certain rates. There is the well documented experiment of frog boiling. If a frog is suddenly immersed in very hot water it will immediately jump out, but if the frog is immersed in tepid water which is slowly heated, it will remain in the water and even boil to death. Perception has to do with acuity or sensitivity to rate of change. Thus the phenomenal world is the world filtered to us not simply by the binary changing/unchanging dichotomy, but by our acuities to change rates. Rates of change are called 'second derivatives' by mathematicians and physicists. It is not surprising that the basic equations describing the world of classical physics are for the most part equations involving second derivatives. Our mathematical descriptions of the world reflect our perceptive filters.

II. The Second Canon of Ontology

Chang Tsu, the Chinese sage tells of his dream of being a butterfly. When he awakened he puzzled over his confusion between his dream condition and his wakeful condition. "Am I a man dreaming I am a butterfly or am I a butterfly somehow dreaming I am a man?" If when we fell asleep and dreamed our dream would always begin where it left off when we awoke, just as our wakeful existence always begins where we left it when we went to sleep, then we certainly could not distinguish between our dream and wake states. The factor that makes the wake state more real than the dream state is continuity. We may thus hold that at root of what we call reality is continuity.

Ontology + Religion

(A) at
in Zones or Interstices

DECPRO.P51

DISK:JOURNEYEAR03

May 6, 1991

We live our earthly lives restricted to a narrow zone like the shore between a great ocean and some broad expanse of land. Indeed the shore along which we live lies narrowly within three zones each bounded by barriers which we may hardly probe.

A-1

First: We live in a narrow spatial zone at the boundary between earth and sky which we call the **zoosphere**, a zone that maintains us with air, moisture, warmth, and food, while below there is impenetrable solidity and above invisible vacuity.

A-2

Second: We live in a narrow temporal zone at the boundary between past and future which we call the **present**, a zone that permits us to exchange information and energy with the world, while before is only memory and ahead only speculation.

Third: We live in a narrow ^{structural} zone at the boundary between the inanimate and the ^{conscious entities} immortal which we call the **living**, a zone that allows ^{vision} vision and choice, while underneath is chance and beyond is ^{mortality} death.

A-3

Each narrow region contains what we call the known, but beyond all is unknown.

also the zone between sameness, recurring
The Eddington - Whitehead Zone

Both the impenetrable solidity of the earth and the invisible transparency of the air conceal their natures from us albeit in different ways.

Both the volatile recollections of the past and the misty curtains before the future delimit the permanence of the known.

Both the well spring of life and the high wall of death hide our origins and our destinies.

It is only that part of us within the confines of the prison defined by these six barriers that we know. Beyond the barriers we know not how far we may extend, how long we may endure, nor how significant we may become.

Fourth: The zone between sameness → 0 and recurring The Eddington - Whitehead Zone

add E-W ZONE
i.e. sameness + repetition
and The Buddhist human zone
→ animal
< demi-god

What is required of those who must walk on this shore whose path is obscured? If our destination is hidden, if only the immediate path may be discerned, how do we proceed? We can only focus on how we walk and where we place our feet, taking each step with care. For no matter what direction we may choose to take, the way ahead is obscured. Since this is so, the wisest among us no longer dispute the directions to take, but search for how ~~most~~ ^{best} safely to walk.

A-4

OEC PRO

(A) p2

A-5

But there is further wisdom to be found. Careful observation will permit us to discern greater portions of the path than those that lie within our prison. We notice that certain features repeat after so many steps, and counting we see the same patterns repeating at different scales and the path begins to emerge as a fugue of interlaced melodies, which despite our limited perceptions can become familiar. When we take our steps in time with these melodies, we find the path may be followed not only with safety but with joy. Then as our skill increases, we find we may also safely step to variations of the familiar themes, and finally we learn confidently to ^{dance} step to melodies new and more beautiful than any we have known.

Also 95 - #62
on E-W Loop

THE E-W LOOP CYCLE

THE DYNAMIC OF THE MOVEMENT OF PHENOMENA
INTO AND OUT OF OUR COGNITIVE WORLD

- 1) Repetition is essential for recognition and awareness Whitehead
- 2) However, Repetition reduces information Shannon
also invokes the Weber-Fechner Law
- 3) Therefore, Repetition increases entropy Szilard
- 4) Therefore, sameness increases Boltzman
- 5) Therefore, awareness decreases to non-awareness Eddington
- 6) Hence we no longer hear the 'music of the spheres' Pythagoras

*Recognition => happens before
but I primarially recognition
nothing to do with time*

ON ONTOLOGY

- The Universe is many faceted, but humans are capable of experiencing only a few of its facets. We further restrict our experience of the Universe by ignoring much of what we experience. We do this by 1) limiting acceptable experience to what is articulatable and communicable, frequently to the most common level; 2) by restricting "reality" to those experiences filtered by a consensus based epistemology; and 3) by logical consistency.
- By choosing to emphasize certain experiences and ignore or deny others, we in effect "elect" a universe, i.e. select a sub-set of the Universe and call it the universe.
- Some specific factors operating in our epistemological filter are:
 - Recurrence and Repetition. Accepted experience must possess a large probability of occurrence in order for it to attract our notice. Only those situations which repeatedly happen are incorporated into our world views.
 - An exception to this is an event of great magnitude. Such events, even though not repeated, are marked as possibly having happened. But unless such events are repeated at least once, there is strong disbelief in them (the Aksobyia effect) An example is the Resurrection.
 - Beyond a critical frequency of occurrence the experience is shifted from figure to ground. The experience is so ubiquitous it is no longer noticed. (Possibly because of the Weber-Fechner Law). This leads to the state noted by Eddington: **Sameness is indistinguishable from non-existence.**
- All phenomena from material existence to life and intelligence seem to occur at interfaces between density (i.e. time and frequency) domains. Galaxies occur on the periphery of voids, life occurs at a solid/gas interface. And as noted above, our cognitive world lies in the zone bounded by a frequency of occurrence sufficiently often to afford recognition, and a frequency so high as to drown itself in sameness.

On Epistemology

An epistemology is a strategy for encountering an unknown (or partially unknown) world. In general its goals are to

- Make a map or model or theory that represents that world
- Discover the bounds or limits of the world
- Enumerate the variety of phenomena (species) encountered together with their frequency of occurrence.

An epistemological strategy is a dialectical process. That is, it is a process that oscillates between two phases. The typical epistemological dialectic consists of 1) constructing a framework (model, theory, map) to contain all of the data (experience, phenomena, terrain) encountered. And 2) placing the data in the framework. Whenever there is no place for the data in the framework, return to phase 1 and reconstruct the framework. This process is like going forward by walking, moving the left foot then the right foot. Sometimes the frame foot is not moved forward, the data that does not fit is instead ignored or discarded. This limits further movement of the data foot. Sometimes a frame will handle only part of the data, while another frame will take care of other parts. Sometimes several frames are needed, some perhaps overlapping, but no one of which is capable of containing all of the data. There seems to be an **epistemological imperative** that requires reduction of all frames to a single frame.

It must not be assumed that the unknown world is immune from the acts of the explorer or from the consequences of being explored. In the case of the astronomical universe, we assume that our observations of it have no affect on its structure or behavior. However, there are other domains in which our observations and exploration alter their nature. Examples include the anthropological study of native tribes, and the micro quantum world. Hence it is wrong to think of an epistemology as purely a strategy of exploration. Encountering or engaging the unknown world may involve creation as well as exploration, invention as well as discovery, and teaching as well as learning. The explorer may alter the world he explores. His map may describe himself as well as of the unknown world. The world of mathematics is an example of one in which the boundary between discovery and invention is uncertain. Thus unknown worlds lie in a spectrum that extends from frozen in concrete to be encountered purely by exploration, to amorphous and pliable to be encountered purely through creativity.

It follows that a more general epistemological strategy must allow for both discovery and invention, for both exploration and creation, for both science and art. How then are the above three goals of an exploration epistemology to be generalized for an exploration-creation epistemology? What are the criteria for discrimination between frozen and pliable domains, between domains for discovery and domains for invention.

*the story of the stranger
who comes to town: "what
kind of people does one find
around here?" "what kind
where you came from?"
That the kind you will find here.*

FOR PRAYERBOOK FOR ATHEISTS

To be right for the wrong reasons ^{in the presence of} seems to be the ultimate principle that guides humans in their experiencing this world. We are ultimately guided, not by our reason, but by some higher and more penetrating aspect of intelligence. The rational well serves us as our local guide over ground open to our vision, but frequently fails us when we try to walk in the dark, and is critically limited when we push out from the shores of solid land. But here another kind of guidance comes into play to help us navigate, and we find we may safely abandon the shackles of a ground based logic.

Examples of right for the wrong reason:

There are the examples of Lowell and the discovery of Pluto, Zwicky and the supernovae. But there is also the entire matter of transubstantiation where the Church Fathers came to a correct conclusion, but their arguments were woo woo. They misread Aristotle: When matter is informed it is no longer simply matter but also acquires the structure of that which informs it. A book is matter, paper and ink, but it also contains imbedded in it a non-material structure which has informed the paper and ink. Eating the bread and the wine of the Eucharist is like reading the book.

SOME EPISTEMOLOGICAL APHORISMS

It seems even more of a mystery than nature itself, that we can create an object which can contain so many projections (or has so many facets).

Knowledge of nature is not extracted from nature, it is projected onto nature. And a Cosmos or Universe is that which is capable of receiving all projections.

A mystery is like a partially silvered glass. It is both a window and a mirror, opening onto the Other but also showing us to ourselves.
We are both observer & participant - Bohr

In nature evolution tends toward increasing complexity. But human history is filled examples of loss of complexity, loss of knowledge and understanding. (Sometimes called the Fall of Man)

We project ourselves into other cultures just as we project ourselves into nature.

The epistemology of archeology (exploration of artifacts) is not the same as the as the epistemology of natural science. Someday when we encounter ruins left by aliens, we shall need a third epistemology.

The detection of life and intelligence in the universe boils down to determining what is local as against what is global. Structures and activities that are local, not global, reveal the presence of opposition to the second law. Universal or global laws belong to the natural order, local anomalies belong to something like life and intelligence.

Behind the divisible there is always something indivisible.
Behind the disputable there is always something indisputable.
Chuang Tzu

Sometimes we discover patterns in our own creations that we did not consciously build into them. Whenever we get more out than we have put in, we have tapped into truth.

Investigations and theories are often directed by prejudice and the "truth" that they come up with is often only one truth from many and that truth is the one which their predisposition has led them to discover.

Roger T. Stevens
Fractal Programming in C p21

The pentagon is the figure of life, growth, and change.
The hexagon is the figure of crystals, snowflakes, and stasis.

SOME EPISTEMOLOGICAL APHORISMS

page 2

The method of our time is to use not a single model but multiple models for exploration. [cf Fritz Zwicky] The technique of the suspended judgement is the discovery of the twentieth century as the technique of invention was the discovery of the nineteenth.

Marshall McLuhan

We are called to confront nature and the cosmos with the multi-faceted, pluralistic approach of art rather than the mono-view of science. *and religion*

Electric circuitry is orientalizing the West. the contained, the distinct, the separate--our Western legacy--are being replaced by the flowing, the unified, the fused.

Marshall McLuhan

In the last analysis magic, religion, and science are nothing but theories of thought; and as science has supplanted its predecessors so it may be itself superseded by some more perfect hypothesis, perhaps by some totally different way of looking at phenomena.

Frazer

In his **Accent on Form** L.L. Whyte regards pattern as the dynamic idea of the science of the future, just as number, space, time, atom, energy, organism, mind, unconscious mind, historical process and statistics have each in turn been the dynamic ideas of the past, serving as he says, "directly as instruments for understanding the universe, To understand anything, one must penetrate sufficiently deeply towards the ultimate pattern. Only a new scientific doctrine of structure and form, i.e. pattern, can suggest the crucial experiments which can lead to the solution of the master problems of matter, life and mind."

Diagram p137

APHORISMS RE ONTOLOGY-EPISTEMOLOGY

We never hear the music of the spheres because we hear it all the time.

Pythagoras

Awareness of a parameter requires that it possess alternative values. A parameter having but one value does not exist.

Uniform sameness is philosophically indistinguishable from non-existence.

Eddington

Apart from recurrence, knowledge would be impossible; for nothing could be recognized nor referred to past experience. Further, apart from regularity of recurrence measurement would be impossible. In our experience as we gain the idea of exactness, recurrence is fundamental.

*But regularity
is subject
to the W-F law*

Whitehead

(The World of Mathematics Vol I p411)

The precepts of Eddington and Whitehead lead to the paradox that the world, in order to be experienced, requires both absence of sameness and recurrence of sameness.

Li Kiang

Sameness may be endless repetition of the same pattern regardless of the simplicity or complexity of the pattern.

Li Kiang

The domain of the experiencable lies along the interfaces between different patterns of sameness.

Li Kiang

This world can only be known by what is in motion.

Heraklidos

Fragment #43

We understand change only by observing what remains invariant and permanence by what is transformed.

Where there is no change, existence ceases;
Where there are no alternatives, awareness ceases.

There is no awareness of entity except through change;
There is no awareness of form except there be alternatives.

*time creates one level
of existence
multiplicity creates another
level of existence*

A new world is naught but a new mind

*of
Romans 12:2*

The opposite of every great truth is also a great truth.

~~Heisenberg~~? Bohr? Plato?

There are two kinds of truth: those truths which must be repeated every day in order to ^{reiterate} become true, and those truths which be^{so} even if never uttered.

Persian adage

Whosoever shall seek to save his life shall lose it;
and whosoever is willing to lose his life shall preserve it.

Luke 17:33

Those elements which can never be completely joined will ever seek union; those elements which can never be completely separated will ever seek detachment.

[Male and Female will ever seek union, Psyche will ever seek to be free of her shadow.]

The Venerable Sage Zarathustra pronounced a great dichotomy for the world--the dichotomy of Ahura-Mazda and Ahriman. But this dichotomy itself was the formulation of Ahriman.

God and Satan as rivals ever seeking dominance is Satan's view. God and Satan as complementary elements, not uniteable, but ever seeking union is God's view.

Persons, nations and species must choose between committment to a higher ontological level and extinction.

Wherever the option space is under-delimited by decision criteria, orthodoxy and heresy will develop.

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and the Unique

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Chuang Tzu

*conditioned
or
unconditioned*

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Diagram p137

Magic does not work, but belief in magic does.

Isaac Asimov

Logic does not convince, repetition does.

Li Kiang

Induction succeeds where deduction fails.

Li Kiang

Do not look upon the world as reality but as the message that is sent to us by reality.

David Spangler

A paradox is only a conflict between reality and your feeling of what reality ought to be.

Feynman

Reality is for people who can't handle drugs.

- Amon

The 3 Umpires:

1° I calls ~~them~~ ^{how} the way I sees ~~them~~.

2° I calls ~~them~~ the way they ~~see~~ ~~are~~.

3° They ain't nuthin till I calls em.

OUTLINE TOPICS--ONTOLOGY

THE ONTOLOGY OF THE FIVE TATHAGATAS

The Five Tathagatas seen as "ontologists"

Remember all first periods

- .1 THE ONTOLOGICAL SCALA
 - .1.1 THE SUNYATA, THE VOID, NOTHINGNESS = ∞ Potential
 - .1.2 NOTHINGNESS INTO POTENTIAL → Bliss
 - .1.2.1 VAIRACONA EFFECTS POTENTIAL
 - .1.2.2 THE ACTIONS OF VAIRACONA
 - .1.2.2.1 CREATION FROM NOTHINGNESS
 - .1.2.2.2 PROVIDING OF CONTINUITY
 - .1.2.3 CREATION BY INJUNCTION
 - .1.2.3.1 "IN THE BEGINNING WAS THE WORD"
 - .1.2.4 THE BREATHING OF BRAMHA
 - .1.3 POTENTIAL INTO BEING → EXISTENCE
 - .1.3.1 AKSOBYA EFFECTS BEING
 - .1.3.2 THE ACTIONS OF AKSOBYA
 - .1.3.2.1 SELF REFERENCING
 - .1.3.2.1.1 MIRRORING
 - .1.3.2.1.1.1 PAIRS OF OPPOSITES
 - .1.3.2.1.2 NAMING
 - .1.3.2.2 SEPARATING THE OPPOSITE
 - .1.3.2.2.1 DIFFUSING THE OPPOSITE
 - .1.3.2.2.2 EXILING THE OPPOSITE
 - .1.4 BEING INTO EXISTENCE → REALITY
 - .1.4.1 RATNA SAMBHAVA EFFECTS EXISTENCE
 - .1.4.2 THE ACTIONS OF RATNA SAMBHAVA
 - .1.4.2.1 FILTERING FOR CONFORMITY WITH ALL PRIOR CREATION
 - .1.4.2.2 SEALING
 - .1.4.2.2.1 "AND GOD SAW THAT IT WAS GOOD"
 - .1.5 EXISTENCE INTO REALITY
 - .1.5.1 AMITABA EFFECTS REALITY
 - .1.5.2 THE ACTIONS OF AMITABA
 - .1.5.2.1 THE FILTERING OF FACETS
 - .1.5.2.2 SELECTION AND CONSENSUS
 - .1.6 REALITY INTO ACTUALITY
 - .1.6.1 AMOGA SIDDHI EFFECTS ACTUALITY
 - .1.6.2 THE ACTIONS OF AMOGA SIDDHI
 - .1.6.2.1 OPERATION ON THE REAL
 - .1.6.2.2 ACTUALITY DESTROYS POTENTIALITY

THE OPERATIONS OF THE LAST THREE TATHAGATAS ALL FILTER AND REDUCE THE BEING CREATED BY VAIRACONA-AKSOBYA

pH
 of pH Alkaline - Acidic
 7.0
 ↓
 WATER

Reality HIGHER WORLDS GAMES

NATURE

OUTLINE TOPICS--ONTOLOGY

1 THE ONTOLOGICAL SCALA

- 1.1 THE SUNYATA, THE VOID, NOTHINGNESS
- 1.2 NOTHINGNESS INTO POTENTIAL
 - 1.2.1 VAIRAONA EFFECTS POTENTIAL
 - 1.2.2 THE ACTIONS OF VAIRAONA
 - 1.2.2.1 CREATION FROM NOTHINGNESS
 - 1.2.2.2 PROVIDING OF CONTINUITY
 - 1.2.3 CREATION BY INJUNCTION
 - 1.2.3.1 "IN THE BEGINNING WAS THE WORD"
 - 1.2.4 THE BREATHING OF BRAMHA
- 1.3 POTENTIAL INTO BEING
 - 1.3.1 AKSOBYA EFFECTS BEING
 - 1.3.2 THE ACTIONS OF AKSOBYA
 - 1.3.2.1 SELF REFERENCING
 - 1.3.2.1.1 MIRRORING
 - 1.3.2.1.1.1 PAIRS OF OPPOSITES
 - 1.3.2.1.2 NAMING
 - 1.3.2.2 SEPARATING THE OPPOSITE
 - 1.3.2.2.1 DIFFUSING THE OPPOSITE
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 - 1.6.1 AMOGA SIDDHI EFFECTS ACTUALITY
 - 1.6.2 THE ACTIONS OF AMOGA SIDDHI
 - 1.6.2.1 OPERATION ON THE REAL
 - 1.6.2.2 ACTUALITY DESTROYS POTENTIALITY

also material in Codes, WP5

*NEWORV1.WP5
NEWORV2.WP5*

x w x(1-x)

Progress w exhaustion of potential

THE OPERATIONS OF THE LAST THREE TATHAGATAS ALL FILTER AND REDUCE THE BEING CREATED BY VAIRAONA-AKSOBYA

Selection of Reality

Psychological & Mental of Consciousness

Secret Consciousness

Order, Disorder, Chaos

Essence, Image and Illusion

Figure & Ground

Fact & Non Universe

Relationalism Lesson

Whitehead Lesson

Entity, Process, Relation

NCCO, Link, Traffic

Man, Adjective, Verb

Noun, Grammar, Force

Scale & distance

Sequence & duration

Mesh & Size of Net

Resolving Power & Field of View

On Perception Reality

*Information & Optical Conv
(Moon Illusion)*

GOGENT IDEAS FOR THE NEW WORLD VIEW

1 ONTOLOGY-EPISTEMOLOGY

- 1.1 Ontology and Epistemology cannot be considered as separate disciplines. They are intimately inter-related.
- 1.2 The jigsaw puzzle metaphor for a general epistemological and ontological framework.
 - 1.2.1 The static puzzle (ordinary puzzle)
 - 1.2.2 The entropic puzzle (pieces decay to square tiles)
- 1.3 The species of deterministic systems
 - 1.3.1 Laplacian = No branch points
 - 1.3.2 With determined branch points
 - 1.3.2.1 determined branch choices and determined choices (but not Laplacian)
 - 1.3.2.2 determined branch choices but open selection of branch
 - 1.3.3 Open branch points
 - 1.3.3.1 structured or sequential choice
 - 1.3.3.2 random choice
 - 1.3.4 Random
- 1.4 Linear and Non-linear systems
 - 1.4.1 Attributes of linear systems
 - 1.4.1.1 superposition
 - 1.4.2 Attributes of chaotic systems
 - 1.4.2.1 Sensitivity to initial conditions
 - 1.4.2.2 Sophisticated attractors

*Search for simultaneous
search for consistency
& paradoxes
leads to
re design
of the met*

2 Theology

- 2.1 The Great Dialectic
 - 2.1.1 Sequential creation of Man by God and of God by Man.

3 Facetism

- 4
- 5

*The Brain-Filled Reality
a special case of Total Reality*

OUTLINE TOPICS--ONTOLOGY

1.EXISTENCE

- 1.1.SELF-REFERENCE, AKSOBYA A/\bar{A}
- 1.2.CHANGE, EDDINGTON $A \leftarrow 0 \rightarrow A$
- 1.3.PHENOMENAL/NOUMENAL,KANT
 - 1.3.1.EXPERIENCE vs INFERENCE
 - 1.3.2.PERCEPTION vs COGNITION
 - 1.3.2.1.COGNITION AND RECOGNITION

ENTIFICATION
REIFICATION

Experience vs Knowledge *Bohmer*

2.REALITY

- 2.1.CONTINUITY, CHANG TSU
- 2.2.NESTED REALITIES

Continuity and Consensus

2.2.1.GAMES

ELECTION OF REALITY

3.IDENTITY/LOCALITY

- 3.1.LOCATIVE I, MATERIAL REALM
- 3.2.LOCATIVE II, TRANSCENDANT REALM
- 3.3.HOLOGRAPH/PHOTOGRAPH

also for Sacred Space

*Fixed vs Moving locality
Identity*

4.MODELS

- 4.1.GODS
- 4.2.PRINCIPLES
- 4.3.CLOCKS
- 4.4.DICE
- 4.5.ALGORITHMS

THE P/M WORLD

THE I/V WORLD

KANT: PHEN/NOUM EXPERIENCABLE

Change must exist

for experience to be possible

4.5.1.ITERATED ALGORITHMS

5.DESCRPTION/INJUNCTION

6.ENTITATION AND REIFICATION

7.PARADOXES

7.1.INVARIANTS: THE NON-EXISTENTS

*QUANTUM REALITY
OBJECTIVE REALITY
LOCALIZATION
HERE/NOW
EVERYWHERE/ALWAYS
CHAOS & ONTOLOGY*

*Scale
Symmetry
Potentiality
Being
Presence
Reality*

*8. INFERENCES FROM THE
MOODS OF VERBS*

*Experientiality
Actuality*

*John 1:1-3 → EXISTENCE OF GOD
EDDINGTON - WHITEHEAD - CHANG Tzu*

CANT FIND FILE

ZOOMZONE.WPD

ZOOM ZONES

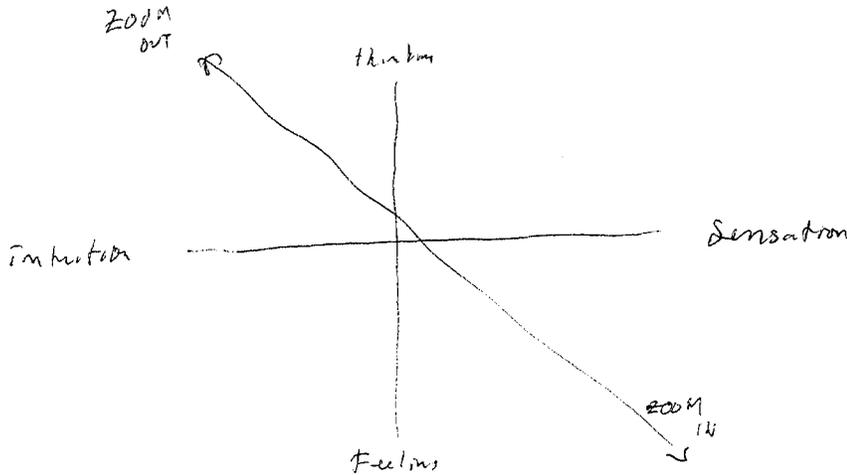
Introduction

The zoom lens is an excellent metaphor for the many ways in which we view the world. The internalization of experience involves not only what we look at, but also involves the resolving power and field of view with which we choose to look. In a general sense when we zoom in onto the details of some specific event we enter a zone of emotion and feeling. When we zoom in close to a personal tragedy we identify with those who suffer and are filled with feeling. But on zooming out the tragedy blurs and then becomes but a statistic. It is as though feeling morphs to thinking and the heart morphs to the intellect as the field of view grows larger. There are thus various *zoom zones* with which we experience the world.

Most of the time our zoom range is very limited. We tend to have but two or three fixed range settings. One for the regularly recurring events of everyday life, one for special rare but familiar events, and one for the highly unusual and unexpected. In each zone there are dominant feelings and dominant ways of thinking.

THE ZOOM DIALECTIC

WISDOM
BEING



DOING

COMPASSION

The Buddhist Paradox

Immediate Presence

Know when you are on the Zoom lens

Some Zoom Zone notes:

There are many parameters, spectra, or vectors along which a zoom can range.

Is scale a special case of zoom, or the basic parameter in all zoom?

It appears many times that zooms reduce to the purely historical

A Person Zoom

Friends and relatives

Professionals, *collaborators*

Political leaders, celebrities,
current heroes, the "news zone"

The famous of History, Saints, Explorers, Artists, Inventors

Great Sages and Teachers

Those for whom history alone does not suffice, their lives demand mythic augmentation

An Intellect Zoom

Archimedes

Leonardo da Vinci

Newton

Einstein

And there are those who enter a zone in which madness occurs:

Cantor, Gödel, Nash, etc.

A Spiritual Zoom

Moses

Lao Tzu

Maha Vira

Zarathustra

Muhammad

Shantideva

Gautama

Jesus

.....

A Logical Zoom

Pythagoras

Aristotle

Euclid, Venn, Boole

Russell, Whitehead

Gödel

The Light Darkness Zoom

In certain zones of some spectra,

the gods can speak to us, "When we have faces then we can meet them face to face"

That is there are zones in which parts and wholes can communicate, and zones in which one

vector can interact with another.

There are insanity zones, paralysis zones, action zones, transformation zones, recognition zones, and zones of despair.
(Woody Allen zones)

There are difference^s in time rates within and between zoom spectra. Time rate can itself be a zoom parameter.

In all there is the matter of “breathing”, the importance of zooming in and zooming out. The dialectic of departure and return.

Scale Waves

Zooming discloses fractal structure in many parameters. It is as though the zoom path is like a wave with the crests producing existence and the troughs producing gaps.

The most puzzling results of zooming come from scale wise inconsistencies. A set of consistent laws seen at one zoom setting falls apart at a different setting. [eg quantum mechanics] It is very doubtful that there is not also a change in rules from the meso to the macro as there is from the micro to the meso. Contiguity may require consistency, but gaps liberate the universe from consistency.

The merging of *contexts* reveals inherent inconsistencies is the structure of the universe. At some zoom settings the resolving power is such that objects merge. Things that are really distinct appear as one. There is the old question, Is mathematics invented or discovered? At a critical zoom setting this question is meaningless for

Invention _ Discovery

Does zooming encounter “curtains” inhibiting further ranging? Or can certain zooms see beyond the curtains ?

The vectors, spectra, or dimensions or zoom are both outer and inner and there are many symmetries.

The existence of discrete zones leads to fractals and hierarchy. Continuity and contiguity break down at various zoom settings.

One set of rules for us and another set for them seems to be common in the universe.

What is consistent at one zoom setting is inconsistent at another. And what is packaged at one resolving power is depackaged at another.

That which is viewed as individual and different at one setting is but one at another setting. Racism and genderism [a more inclusive term than sexism] are the results of a fixed zoom setting.

EPI

SSZ01.P51

DISK:EPIONTOLOGY

April 28, 1991

IMPROVING OUR WORLD VIEW

We view the world through the filters of our ^{tradition} scientific theories, our religious dogmas, and our cultural worldviews, and superimposed on these are the filters of our personal prejudices. We ask, is there some way to obtain an unfiltered view of the world, seeing it in its full richness free of the astigmatism of our conceptual constructs? For a totally concept-free view, the answer is no, since percepts and concepts are intimately interdependent and there can be no percepts without concepts. But there are some things we can do:

For one, we may select alternative filters and by comparing the results arrive at a somewhat less astigmatic view. On the subjective side, this approach requires a strong measure of skepticism in the accuracy of every filter and a strong measure of belief in the value of all filters. It also requires the maturity to live with the realization that all views are imperfect and the "true view" is a will-o-the-wisp. On the objective side, this approach requires the availability of alternative filters. These are usually in short supply because one of our cultural dogmas is that alternatives are disquieting and should therefore be suppressed. Hence back to the attic to dust off epicycles, phlogiston, caloric, ether, Bohr atoms, cosmological constants, tired photons, and steady state universes. Back to the photo album to look at Gnostics, Monophysites, Arians, Manicheans, Pelagians, and Cathars.

A second endeavor is to try to locate the hidden postulates and assumptions. After an assumption has been made for many years it becomes invisible and is accepted as belonging to the world itself. For example, Hubble took the doppler interpretation of red shifts as an assumption. Today it is dogma.

A third device is to go from linear causal patterns to multi-dimensional patterns. Whereas a missing link may derail a linear argument and block proof, even though pieces may be missing in a multi-dimensional pattern (as in a jig-saw puzzle) the picture may be discernable.

Fourth, look for broad patterns. Widen the field of view even if the resolving power must be reduced. Exceptions should serve to refine a generalization, not to preclude making it.

Fifth, employ the scan, select, zoom techniques of exploration. Technique 1) Select a field, scan it, select a portion of the field, zoom in, iterate. This is known as the reductionist technique. Technique 2) Select a field, scan it, select two (or more) portions, compare their zooms. This is known as the juxtaposition technique. Technique 3) Select a

ALTERNATIVE MODES OF MOVEMENT

In a culture resentful of any restrictions and limitations on freedom, and especially resentful of speed limits, the Einstein velocity limit, $v \leq c$, where c is the velocity of light, has posed a major challenge. This has been met by both scientific (tachyons) and science fiction (warp speed) alternatives. Since we propose to let neither Einstein nor the highway patrol have the last word, additional approaches on how to get there more quickly are outlined here. But first, a review of the most familiar mode, that of Aristotle as refined by Sir Isaac Newton.

I. The Newtonian Mode:

This is the traditional mode of movement from place to place, based on terrestrial experience and projected onto all cosmic motions. It assumes that space everywhere, both empty and occupied by matter, is essentially the same. Motion through this space is given by the equation, distance equals velocity times time. (And as already noted all velocities are bounded by the velocity of light). We term this kind of motion as being "totally horizontal" in the sense that the distances and times are locked to a single value of a scale parameter.

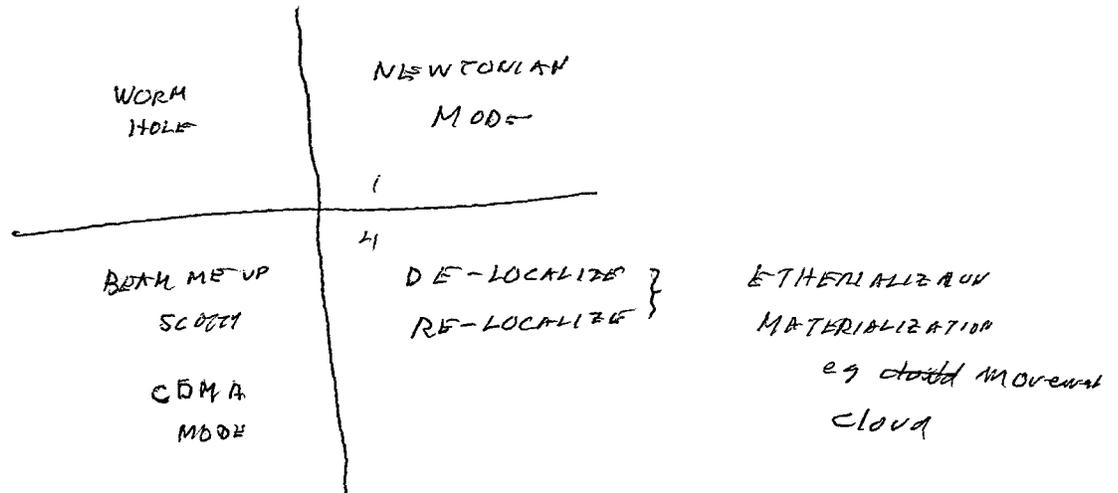
II. The Fractal Mode:

This hypothetical mode is suggested by certain brands of map software that provide the display of maps on various scales ranging from a city block to an entire hemisphere. In the operation of this software, I may be looking at the neighborhood of the Capitol building in Washington D.C. and wish to see where my congressman's home office is located in my own city. To go from Washington to home, I do not have to move in the Newtonian mode across a single scale map of the United States. Instead I zoom out from the city block scale to the continental scale and move horizontally from Washington to home on this low scale map. I then zoom in to my home city and fine tune horizontally on a high scale map.

The essence of fractal mode movement between places is first to move vertically (zoom out) from our ordinary space level to a low scale space level, then move horizontally on this low scale space level to the neighborhood of our destination, then move vertically (zoom in) to the original space level and finally move horizontally to the exact destination. (The process, however, is not restricted to two scale levels; more than two may be involved).

Say we wanted to travel to the neighborhood of the interesting star Eta Carinae which is about 7500 light years distant. If we were to travel in the Newtonian mode, even at maximum velocity, some 7500 years would be involved. If we adopt

TRAVEL MODES QUADRANTS



AT THE INTERFACE OF 1 and 4

THE REQUIREMENT ARISES THAT

c be the same for all observers
regardless of their Newtonian movement

CDMA w PDF R_{12}
Send an image
macro effect warp speed

SYMBOLS LIVE IN A DIFFERENT UNIVERSE
PARALLEL

THEY CRUMPLE SPACE-TIME

the fractal mode we would zoom out to the galaxy scale level in which our map would cover the entire milky way system; move horizontally (Newtonially) across the galaxy to near Eta Carinae, zoom partially in, correct horizontally, zoom in again, correct horizontally, etc, until we reach the desired location in the neighborhood of Eta Carinae.

In all of this, first, we do not know how to zoom, to move vertically, nor do we know what vertical velocities are possible. Second, we do not know what a scale change would do to Einstein's bound on horizontal velocities. Third, if fractal mode movement is not possible for physical bodies, is it possible for the movement of information?

An important model using the concept of vertically zooming up and down is based on the idea of a "wormhole", a tunnel from our universe to some other universe. In this model our universe is viewed as being at one space-time level and other universes as having different space-time levels. The concept of zooming or vertical motion translates into passing through a wormhole. Again, for example, say we want to go to Eta Carinae. We would enter a nearby wormhole, leaving our universe and entering some other universe. If this new universe possessed an appropriate lower scale value, then we could briefly move within it horizontally to another suitable wormhole, pass through it back into our own universe, and if we selected our wormholes well, be in the neighborhood of Eta Carinae.

III. The Local/Non-local Mode:

If macro bodies, like micro bodies, can alter between two states (local \sim particle and non-local \sim wave), then another hypothetical mode of movement is suggested. In this mode an object in the local state of being here and now, first diffuses (transforms) into its non-local state becoming everywhere and everywhen. Second, it selects where and when it wants to "un-diffuse" and finally transforms back to its localized state at its selected new position in space and time. This mode allows for time travel as well as space travel.

IV. The Depackaging/Repackaging Mode:

In modern communication practice, for example CDMA, a message is broken into parts. The parts are assigned a code name and are then transmitted by various routes at various times, (along with the transmission of the suitably encoded parts of other messages), and all reassembled in the correct order at their respective destinations. Perhaps the "Beam me up Scotty" mode is a special case of CDMA.

BELIEVERS AND KNOWERS

I have never cared for the use of the terms "believer" and "non-believer". I believe they must have been coined by a non-believer. And as illustrated here in the first two sentences the word *believe* has multiple meanings in English and is a precarious word to use if the goal is philosophical understanding. The story is told that when asked whether he believed in God, Carl Jung replied, "I don't believe, I know". And that is why I believe that "believer" is a misnomer. Some of those called *believers* are really *knowers*. So perhaps a more important and useful dichotomy would be that of "knower" and "non-knower" What then is a knower? A knower is one who through some direct personal experience has had a glimpse of another reality, and in addition has the courage to trust and stand by that experience against the forces of cultural skepticism.

At the heart of the difficulty is the matter of continuity. What we commonly call reality, the reality conveyed to us by our senses through our data processing filters, is continuous in time. Experiences of non-sensory realities lack continuity. They come in "glimpses" that occur only at certain moments in time. We tend to measure the "validity" of a reality in terms of its continuity and consistency. For example, most dreams, having neither continuity nor consistency, are labeled unreal. But there are experiences, while lacking continuity, that have a high level of consistency. These form the class of experiences which knowers hold to be valid realities. But a very large sub-class of such experiences is common to almost all knowers, just as the sensory reality is common to almost all humans. It is in the interpretation of these non-sensory realities that knowers divide among themselves. The experiences are common to all, the interpretations are arbitrary constructs. Many answers have been given to what lies behind the experiences, ...by Zarathustra, Moses, Buddha, Jesus, Mohammed,... The same is true of the sensory reality. The movements of the planets are observed as the same by all observers. Interpretations of what lies behind the movements vary, ...Ptolemy, Copernicus, Newton, Einstein...

But what is most important is the effect of the experience of a "glimpse". What a glimpse tells is that something exists! There is a momentary view of a distant mountain range of overwhelming beauty. Knowing that such a place exists, there is a undeniable urge to reach it and climb its peaks. It is the knowledge of "it exists" that differentiates a knower from the rest of us. It is the never turning back commitment of the knower to the search that inspires us and makes us ask, perhaps we, not they, are the crazy ones. What are we missing out on?

Jung's synchronicity, Poets connecting the same dots in different ways.
Glimpses, Painters and photographers isolating an element from its context destroying contiguity
extractions, selections,

interruptions breaking continuity Lehrs quote Discontinuity of sleep-wake, dreams
Chuang Tzu's question re reality

departure and return breaking continuity, Migration to break contiguity

*In order that spiritual continuity may be maintained within the coming and going
multitudes of nature's creations, the physical stream must suffer discontinuity at certain
intervals.*

-Ernst Lehrs

i. Fragmentation

LB Sent 17a

CODE1 [ORX] CODE2 []
2BSORT.ASK
CONTIGNB.WPD

August 12,

AREA
TIME
FREQUENCY
CODE

MULTIPLE ACCESS

From Spring Lake, 05-08-10 9:00 am

It appears that communication engineers invented ontological concepts that philosophers and metaphysicians never thought of, viz: ADMA, TDMA, FDMA, CDMA.

Contiguity and continuity are a sub-species of links or connections. In a TDMA reality manifested events could appear to have continuity (and causality) but be separated when measured with respect to some "primal" time. That is, the events would be experienced as continuous according to our own clock, but in prime-clock time would alternately exist and non-exist. It may be that what we sense, see, hear, etc, exists only for a few nanoseconds out of every hour of diachronic--clock time, but appears to us to have temporal continuity. But thousands of other realities may sequentially share in that hour of diachronic-clock time. Indeed, it is possible that the sum of all our history from the Big Bang may be included in some nanosecond of a great diachronic clock.

That is to say, in a TDMA ontology we can think of ourselves as being actors appearing in a play. But our play must share the stage with other actors in other plays. That is, many plays are running on the same stage, taking turns an act at a time. But is it possible that some of the same actors are participating in several of the plays and that some plays might even be sharing some acts?

In music at some point there is a switch from beat to pitch; time converts, or rather inverts, to frequency. And perhaps at some diachronic point, sequentially existing TDMA realities switch to coexisting FDMA realities, plays being played simultaneously on the same stage but at different frequencies or speeds. And perhaps intersecting from time to time. [eg Clock rate in globular clusters vs. diachronic clock rate for expanding universe.] Thus in addition to sequences of repetitive realities, as in TDMA, there could be intersects and verges between such realities creating even further realities, or there could be modulated realities in FDMA.

The same considerations could hold with reference to space in an ADMA reality. Places would appear to be contiguous in a particular space, but be non-contiguous in a more comprehensive and extensive space. And certain non-contiguous places in one space would appear to be contiguous in a different space. Parallel universes could be one form of ADMA.

Perhaps what has been said of continuity for TDMA and contiguity for ADMA could be said of consistency with reference to CDMA realities. While we can give metaphors and specific examples for some realities. What metaphor or specific example is can be made for CDMA realities?

Our "glimpses" of other realities could be the result of some momentary "phase shift"

with respect to realities of any species, ADMA, TDMA, FDMA, or CDMA, that is momentary phase shifts in place, time, frequency, or code.

The reality we perceive is filtered both by the spectral limits of our sensory channels and by the special way our brains are wired. {Also conditioned by cultural consensus, but that is another subject} This filtering confines what may be experienced to a particular range of temporal frequencies and to a limited range of spatial resolving powers. And certainly to limited information processing capacity.

August 12,

2005

Based on GNB Spring Lake 05-05-22 8:30 am

Having had glimpses of many things that lie outside our conventional reality, how do we explore beyond this present reality? One attribute to tune in on is the power of place. Why is it some places have a certain magic? And what is it that these magic places have in common? It is not contiguity! They seem to give us some special energy or insight, they empower us. But since these experiences are not intentional, we cannot reproduce them, and they fall outside our canons of scientific investigation. In fact, while improbable, they are not unreasonable, they resonate with something within us that we rarely exercise, we do recognize them. And recognition is our ultimate validator, both for the repetitive, the scientific, and the probable, and for the rare, the unscientific, and the improbable.

But it is not only place, there are also special times that have magic, give us special energies and empower us. And there are also special events, not only those in which we participated, but those recorded in history in which we could not have participated. (Or could we have?) And special historical persons with whom we readily identify. No continuities and no logical connections. What links us to these places, times, persons, and events? And what links them to one another. Certainly not continuity, not contiguity, not even consistency. There are strands of connectivity that interlace our reality and other realities, that we can sense but cannot comprehend. We ask what are the greater contexts in which all is embedded?

From Spring Lake 05-03-16

August 12,

A human being is one device for organizing events. —Lama Kunga

Einstein's space-time possesses contiguity and continuity and is therefore a special case.

Sacred groves do not have contiguity in P-SPACE, but do have contiguity in some other

SPACE.

Let us postulate an "M-SPACE" in which other species of connections and linkages exist.

I can claim that my being has contiguity and continuity in P-SPACE and in H-SPACE, but lacks continuity (and contiguity) in M-SPACE. But the magic moments themselves are contiguous and continuous in M-SPACE

From GNB 04-11-01 (All Saints Day)

August 12,

The organization of reality in terms of its sensory contiguities and continuities delimits and degrades life and vision. To escape the mind set of reality defined by continuity and contiguity is the first step needed in order to perceive Reality (with capital R).

From GNB 04-10-28

August 12,

There exist continuities and contiguities in other dimensions than space and time. Places a thousand miles apart may be joined by memories, by experiences, by a person, by a feeling.

Archetypes are patterns in time with similar plots, scripts, characters. Their occurrences have little to do with contiguities in space or continuities in time. Their link is an abstract similarity, not contiguity nor continuity.

Sometimes continuity is destroyed, but contiguity (and other links) remain.
Sometimes contiguity is destroyed, but continuity (and other links) remain

There exist many abstract continuities and contiguities that connect events, other than those of time and space. [There also exist links of a totally non-contiguous, non-continuous species] There are archetypes and synchronicities. We are connected with loved ones whether or not there is geographical contiguity. All Temenos are connected by some non-spatial contiguity, All Kairos are connected by some non-temporal continuity. There are some connections far more intense and profound than spatial and temporal contiguities and continuities.

Death brings certain discontinuities, but does not erase other continuities. Memory and records preserve certain continuities, lose others .

A ridge is a place where two realities have contiguity, earth and sky meet.
Samhain is a time when two realities have contiguity, indeed, intersect.

The world is discrete, not continuous. All that exists is separated by what does not exist. There are gaps of nothingness in every parameter. Continuity and contiguity are illusions, except as perceived as bridges across the gaps. But the gaps are not nothingness, they are differences in the values of one or more parameters from the non-gaps [perhaps frequencies].

Indeed, what we may consider to be nothingness may well be where the values of several parameters are opposite to those of existence. The inference is that non-existence as well as existence involves many parameters. There may be as many species of non-existence as of existence. As many values to zero as there are positive integers. [at least as many values of zero as there are Cantor's alephs.]

There exists a domain of many parameters, each with a range of values which contains our ability to experience. Our reality is bounded by this domain. Our sensory and cognitive [brain wiring] apparatuses select and connect the dots found in this domain to construct our reality. Our resolving powers obscure the gaps and project continuity and contiguity onto our reality.

Much of the suffering in life lies in our illusory contiguity / non-contiguity and continuity/non-continuity world view. A better metaphor than contiguous-continuous space-time for the nature of reality is membership in various abstract sets and subsets. (Kaross) With separation, non-contiguity, we suffer; with death, non-continuity, we suffer. How can a set theory view change this?

When we can realize that we are one in certain sets, and live eternally in other sets.

THE EASTERN HILLS

Sometimes when viewing hills that lie to the east, I feel that our destiny lies beyond them. Not in the valley that lies on the other side of the hill, but beyond the hill in some alternate dimension. As my view sweeps up the slope to the ridge, I note that at the summit the world splits into two. One part goes over the hill and into the valley beyond and on over the next hill and on and on, following the surface of the earth, a finite sphere of closed curvature. But another part separates at the summit and turns upward into an infinite space of open curvature. While both of these worlds are real, we live for the most part in the closed world. But now and then we are able to glimpse the open world; as perhaps when we watch the harvest moon mount above the ridge into the open and infinite space.

NOTED 9/5
2005

12]
 SUBJECT [GLIMPSES] TEXT [
Thought THE EASTERN CREST
 THE PARTIALLY HIDDEN
 THE CLOUDS THAT ARE BOTH MESSAGE and MESSENGER
 A CASE OF MUTUALITY (like compassion)

14]
 SUBJECT [WIDTH OF HERE] TEXT [
Thought HOW DO WIDTHS OF HERE RELATE TO HAPPINESS? TO PRODUCTIVITY?
 THE ROLE OF SUCCESSIVE CRESTS, UNDULATIONS.
 THE ROLE OF THE PARTIALLY HIDDEN FOR INITIATING SEARCH.
 THE ULTIMATE CREST AND THE SECURITY OF NON CONTIGUITY
]
]

opposes our primal urge to find it and explore it? We see evidence of this conflict of urges in the ongoing media dialog between those who know UFO's and crop circles reveal the presence of aliens and government agencies accused of covering up and denying the facts. Who are the opponents of the search? We have met the enemy and they are us.

EDMA

Experience has been compared to communication. Every experience is a message which is sent by other humans, by nature, or in general by Life, with a capital L, whatever that is. When seeking an answer to, "Are there alternate worlds and realities to be accessed and explored?" it is proper to begin by asking have we received any messages that could have originated in some alternate world. (Such messages are what were called "glimpses" above). Astronomers are currently searching the radio spectrum for signals from near by stars that might come from some alien civilization. How can they tell when some signal is a message and not just random noise? We can ordinarily identify a message only if we possess the proper code book. Which is to say that at a basic level all messages are encrypted, and they carry meaning for us only when we have gained access to the sender's code book. We are able to communicate with one another because having a common language is but another way of saying we all possess the same code book. The task of science has been to discover the code book of nature. Its ongoing success in this is probably due to our already possessing nature's code book, we only have to create a dictionary to translate nature's code book into the one we use for our common communication. (That may be the answer to Einstein's question, "Why is it that we are able to understand the universe at all?" It may also explain what is meant in the Scriptures by our being created in God's image--we share the same code book.)

But having the code book is only one of the requisites for receiving and interpreting messages. We have to be tuned to the right frequency, we have to be located where the signal can be heard, and we have to be listening at the right time.

CODE1 [ORX] CODE2 []
 2BSORT.ASK
 TIGTIN.WPD

September 28, 2003

CONTIGUITY AND CONTINUITY

W NON-LOCALITY

The discontinuous and finite are the modes by which God accomplished His task. The continuous and the infinite are the modes resorted to by our intellects, which are incapable of investigating the gaps in nature and of imagining the excessively numerous accumulation of its building blocks.

—Arnaud Denjoy

The perceptual box, which we call reality, has been defined by a sense of contiguity and continuity that we project on the world. Using the popular metaphor of “connecting the dots” to create a picture, what we have done is linked together our experiences of the world employing the continuous parameters, space and time. While this mode of linking appears self consistent and has created for us an enduring reality, it obscures the basic non-contiguous, non-continuous linkages by which the **essences** underlying our experiences are connected. In other words, the contiguous-continuous links have led us to replace the fundamental connections of **meaning** with the illusory connections of **cause**.

There is an incipient awareness of this illusory perception on many fronts. Scientists are beginning to suspect that the real nature of space is granular rather than continuous. And Hoyle has made a case for discreteness in the nature of time. Space has a binary aspect, consisting of extensions separated by gaps of nothingness; and time has its binary aspect consisting of durations separated by gaps of nothingness. But the real conceptual revolution lies in the possibility of there being alternative sequences between extensions and durations. It is being asked, Are there more fundamental sequences than the causal-temporal and more fundamental topologies than the spatial-topographic? And of course the ancient Buddhist question of, what are the species of nothingness?

It is not only in physics and cosmology that alternatives to the contiguous-continuous world are being considered, but as is usual the first explorers of such alternatives are the artists.

THE MUTUAL WORLD

We may think of the world as consisting of **nodes** [things, objects, or beings] and **links** [relations, bonds, or forces]. In the realm of human perception, the nodes are visible while the links are invisible, being in general perceivable only through their effects on the visible. Much of the history of religion, philosophy, and science consists in speculations or explorations of the invisible portion of the world, i.e. of the relationships that exist between the objects or things that are visible. The philosopher John Locke ["On Human Understanding", 1689] maintained that it was the visible that was important and meaningful and speculations about the invisible were meaningless. On the other hand, in the 20th century the Structuralist school of philosophy maintains the opposite: Reality is not composed of things but of relationships, and every object has both a **presence** and an **absence**. Therefore it becomes important to explore not only the relationships between objects but relationships between the relationships themselves.

We might distinguish:

Class I relationships: Relationships between objects

Physical forces such as gravity and coulomb forces would be examples of Class I.

Class II relationships: Relationships between Class I relationships

The relationship between gravity and coulomb force would be an example of Class II

But between Class I and Class II there is a "semi" class of a relationships, those between a class I relationship and an object. For example,

The *mutuality*, Force \longleftrightarrow Form.

The question involved is: Is form, being visible, an attribute of objects, or is it also a force?

Hence the need for this additional class of "*mutualities*"



Drawing Hands —M. C. Escher

FROM CAUSALITY TO MUTUALITY

The great paradigm shift taking place in Western thinking is that from causality, a one-way street, to mutuality, a two way street or even a multilane super-highway. While the idea of mutual causality has long been fundamental to Eastern thought, its penetration into Western thinking has been slow. Causalism, the past determining the future, has been dogma in Western thinking. The opposite, the future affecting the past, has been viewed as non-sense. But mutuality has crept into western thinking through both politics and economics: Jefferson's view of ultimate sovereignty residing in the people, i.e. democracy, is the mutuality of [people <~> government]. And the cornerstone of free market economics has been the mutuality of [supply <~> demand].

The curious aspect of this is that physics has been the last stronghold of causalism. But technological developments such as radar [emw out <~> emw in] or holograms [part <~> whole] have given indisputable illustrations of examples of mutuality. Then with quantum mechanics physics had to succumb. The mutuality of the experiment and experimenter, of the observer and the observed could not be ignored. The illusion of "neutral objectivity" went to the dust bin. And now with bi-directional time being theoretically possible, the mutuality of [past <~> future] or [causalism <~> finalism] is on the table.

Mutuality has also surfaced in the theory of general relativity. As J. A. Wheeler puts it, "Matter tells space-time how to curve and curvature tells matter how to move.", a form of the mutuality, [mass <~> space-time].¹ Einstein says that the [mass <~> space-time] mutuality is ontological. If there were no matter there would be no space-time, i.e. the existence itself of space-time derives from the existence of matter. This raises the question, if there is full mutuality, then in what way does space-time contribute to the existence of matter? Must they be mutually sustainable?

Other phenomena that have defied explanation by "causality science" are Jung's *synchronicity* and Walpole's *serendipity*. These are events that happen that in some way needed to happen, species of *deus ex machina*. The visible part of the mutuality is the event itself, the invisible part is some meaning bestowed on the event. It is as though there are mutual exchanges between invisible actors in the event and visible actors in the event. The event itself is visible, the scenario of which the event is a part is invisible. Viewing synchronicity and serendipity as mutualities may give clues to their explanations.

Finally, another phenomenon that may better be investigated from the viewpoint of mutuality, is the phenomenon of *resonance*. Where resonance is defined as the mutual tuning of two vibrating systems to a single frequency or to harmonics of some fundamental frequency. [frequency₁ <~> frequency₂]

¹ Some explain that general relativity is [dynamics <~> geometry], but this may not be so much a mutuality as alternate descriptions of the same phenomena.

PLANCK PARTICLE-BARYON MUTUALITIES PART I

It is the present hypothesis that existing entities come into being, not by uni-directional *causality*, but by some form of bi-directional *mutuality*. In the case of frequencies such mutualities are the well known phenomenon of resonance. But in other parameters some other form of resolution may be operating. [all numbers are \log_{10}]

The Mass-Size Mutuality

	P	B	δ	
M	-4.662199 \	-23.776602	-19.114403	= $(\alpha\mu)^{1/2} S^{-1/2}$
L	-32.791545 /	-12.550068	+20.241477	= $(\alpha\mu)^{1/2} S^{1/2}$

This mutuality infers that in a one dimensional world $(\alpha\mu S)^{1/2}$ planck particles would space-wise fit into one baryon. In a two dimensional world $(\alpha\mu S)$ planck particles would fit into one baryon, and in a three dimensional world $(\alpha\mu S)^{3/2}$ planck particles would fit into one baryon. One approach to the resolution of this mutuality could be through some form of *completion*.

One-dimensional completion:

If we convert to planck units, taking the planck length as 1, the size of the baryon becomes the above, +20.241477. If this be taken as the diameter of a ring, R, the radius would be, +19.940447. The diameter of a planck particle located on a ring of radius R would subtend an angle of -19.940447 radians; $2\pi \times$ this number = 20.738627, would be the number of planck particles that would complete the ring. The mass of this ring would be 16.076428 grams.

Two-dimensional completion:

A disk of radius R would have a planck area of $\pi R^2 = 40.378044$. The "cross section area" of a planck particle is $\pi/4 = -0.104910$, hence the number of planck particles in the disk would then be $40.482954 = \alpha\mu S$. This disk would have a mass of 35.820755 grams.

Alternatively, a two-dimensional completion could be obtained in a spherical shell. The area of such a shell would be $4\pi R^2$, four times the area of the above disk. This would require four times the number of planck particles or 41.085014 particles. This shell would have a mass of 36.422815 grams.

Three-dimensional completion:

A sphere of radius R would have a planck volume of $4\pi R^3/3$; the "volume" of a planck particle would be $\pi/6$; hence the number of planck particles to complete the sphere would be $8R^3$, which is $= 60.724413 = (\alpha\mu S)^{3/2}$. The mass of this sphere would be 56.062214 grams.

The mass of the sphere is of the order of the estimated mass of the universe. The mass of the disk is of the order of maximum stellar mass. (inferring 10^{20} stars in the universe). The mass of 10^{16} grams may be a clue to hypothetical dark matter.

MUTUALITY AND BEING

Knowledge Is for Doing; *La b o r a*
Wisdom Is for Being. *o r a*
—Li Kiang

Even some animals apparently have discretionary time. Today I saw some cows resting during a recess from their mandatory hours of grazing. And what do they do with their discretionary time? Rest, yes, but I was surprised to see many egrets in the midst of the reclining cows. Now egrets do not go near anyone, nor do they let anyone approach them, yet the cows and the egrets were enjoying some sort of symbiosis. I had a feeling that both the birds and the beasts were taking time off from doing their own things and just *being*. And when we can just be, we can become symbiotic with anyone. Or maybe it is the inverse: the clue to 'just *being*' is to establish a symbiotic relation with someone or something that is different: A member of the opposite sex, a pet, a foreigner, or an alien; A flower, a tree, a lake, or a mountain. Is it that we *be* when we contain the other and the other contains us? The egrets were in the midst of the cows and the cows were in the midst of the egrets. Or is it better said, When we identify with the other and the other identifies with us? Or, When we belong to the other and the other belongs to us? In any event *being* involves some form of mutuality with another. Indeed, mutuality is necessary in order for both us and the other to be.

Strange that the idea of mutuality has been so long obscured by our uni-directional activities. Causality, the foundation of our philosophies, is uni-directional in time. Reductionism, the foundation of our physics, is uni-directional in scale, Hierarchy, the foundation of our organizations, is uni-directional in power, Ownership, the foundation of our economics, is uni-directional in belonging. Rights, the foundation of our society, is uni-directional in privilege. Yet the world beyond the activities of mankind seems constructed on bi- or multi-directional linkages and influences. Why have we projected our own uni-directional proclivities onto the cosmos at large, and expect to understand the workings of the world in terms of our own biases? Perhaps it is from the same arrogance that created our uni-directional chauvinism in the first place. Why must we overrule the perceptions the world sends to us, with the uni-directional interpretations that we project onto the world? When will we come into a symbiotic relation with the earth instead of uni-directionally trying to subdue it? Egrets and cows have acquired a wisdom we have yet to achieve.

CAUSALITY AND THE DIRECTION OF TIME

Who controls the past controls the future; who controls the present controls the past.

—George Orwell 1984

The Direction of Time:

Does time always move from past to future? The direction or “arrow of time” has been defined in terms of the second law of thermodynamics as the direction in which entropy increases. And locked into this direction of time is the concept of causality. We conventionally assume that causality must operate in the same direction as the flow of time, meaning that consequences never play a causal role. But in the case of living systems, it is recognized that they are able, locally and temporally, to violate the second law of thermodynamics. This capability of living systems infers that they may also, locally and temporally, be able to alter the direction of time. This carries the additional implication that living systems can create situations in which consequences do play a causal role. Indeed, this concept of the power of living organisms to reverse the direction of time and causality has been given a name, “purpose”. Living systems do direct sequences of events toward selected goals which conflicts with the idea that the future is solely determined by past causes. A power to overrule some aspects of the determinism or necessity present in the natural order seems to be possessed to some extent by all life forms.

The Present and the Now:

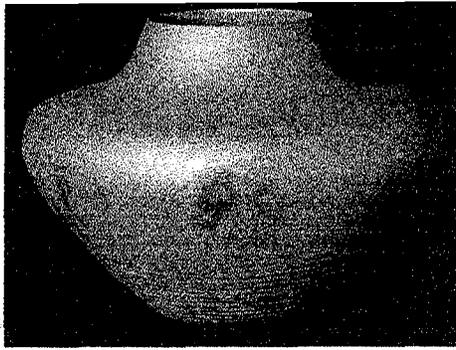
We distinguish between the **present** and the **now**. We may define the **present** as an instant that moves along the line of time in a direction past to future, but at possibly different rates. We define the **now** as a zone in the stream of time in which the second law of thermodynamics has been locally violated. Within this zone antecedent-subsequent are no longer locked to cause-effect. Causality is free to move both from prior to later and from later to prior, and consequences may play a causal role. Living organisms seem to be able to create such “now zones”. Whenever such a zone occurs in the stream of time it is in many respects analogous to turbulence in a fluid stream where the flow may be in several directions at once. Such an intentionally controlled zone or interval of time may be thought of as a turbulent eddy in the stream of time..

Notes:

- The **present** is the only period in which energy may be transferred. The **now zone** is the time interval in which information may be transferred. [and/or created]
- The Hopi view of a determinator in the future may be considered the leading front of a now zone

Questions:

Is there an holographic analogy in time where the part, a portion of time, may contain the whole?
Are there different topologies for time as there are for space?



Amphorae, jars, cups, all our containers, are half vajras. Rotational symmetry in the visible and mirror symmetry with the invisible. Form is force and force is form, and every curvature generates a different force. These symbols of clay open to us a deeper truth than can be found through the symbols of words. They allow the earth to speak. Those whom we regard as inanimate—without life, are given voice and reveal that they as well as the living possess spirit. Spirit contains all and all contain spirit. Not only is the mutuality of containment manifested by the jar, but its invisible symmetries reveal passages to the spirit world.



SOME BASIC PROBLEM AREAS

I CONTAINMENT

INCLUSION
EXCLUSION

I. The Species of Containment:

SCALAR CONTAINMENT (1)

Open Containment (2)

(3) Euclidean Containment: One parameter containment

(4) Matroshka Containment: Iterated one parameter containment ~ regression?

Closed Containment

One Parameter Mutual Containment: ==> Equality

Cross Parameter Mutual Containment:

Self Containment [Self Reference]

Looped Matroshka Containment: "Strange Loops"

Bi-Cross Parameter Mutual Containment

geneological
containment
Each generation
as a dimension
in B-B

~~Urabarus of Blake~~
part-whole polarizations
meta-genera

TEMPORAL CONTAINMENT

NOTES:

- (1) *Scalar containment is taken to mean static or time free containment.
- (2) *Open containment infers open below and open above, no self imposed bounds
- (3) *Euclidean containment is conventional geometric or algebraic containment, $A > B$.
- (4) *Matroshka refers to nested Russian dolls. e.g. modular heirarchies, fractal organization
- *Closed containment infers self bounding *Hofstadter's genii meta-genera*
- *Mathematical equality is meaningful only if a single parameter is involved. If a generalized Pauli Exclusion Principle is valid, [no two entities take on identical values for all parameters], then total equality infers non-existence. In between, equality in more that one parameter leaves ^{exit} the mathematical domain of quantity and enters the domain of quality.
- *Examples of cross parameter mutual containment would be: genotype containing phenotype and phenotype containing genotype. Holograms, in which the whole contains the parts and each part contains the whole.
- *The Pope declaring himself infallible is a self contained or self referential proposition. While such a proposition may have validity within the system, its validity cannot be supported outside the system without additional linkages.
- urabarus* *The Jeffersonian notion of sovereignty is a closed loop. The executive at the top, below, the levels of national ministers, ...local ministers... down to the people, whose sovereignty loops back over the executive. Time is involved in this loop, and is strictly not scalar. A scalar example is implied in Blake's Augeries of Innocence, "To see a World in a Grain of Sand and a Heaven in a Wild Flower, Hold Infinity in the palm of your hand and Eternity in an hour". *not standard for Godel, Turing, Church*
- *This is very difficult. Could it be what would be meant if Blake's line were rendered, Hold Eternity in the palm of your hand and Infinity in an hour ?

*TO SEE A WORLD IN A GRAIN OF SAND,
AND A HEAVEN IN A WILD FLOWER,
HOLD INFINITY IN THE PALM OF YOUR HAND
AND ETERNITY IN AN HOUR.*

-BLAKE

When ultimately disclosed, everything that exists is of the nature of a loop. Or said in another way, everything that exists can be constructed of loops or cycles. Said in still another way, all of reality can be represented by superimposed frequencies. [sounds like string theory]

Take the example of Blake's two loops.¹ The first is the scale loop. Going down into the grain of sand and on below, to silicon atoms, to quarks, and on into a "white hole" through which we pass and lo we behold the cosmos itself. The infinitesimal intimately connected to the infinite! In Blake's second loop, focus on the present, go down to the micro second, the nanosecond, and on into a white hole passing through to all eternity! The present moment intimately connected to eternity! How strange, the whole is more intimately linked to its most minuscule parts than to its major ones. But have not many great teachers told us this? God is more closely in touch with a falling sparrow than with the grandest emperor or pope. "What you do for the least of these, you do for Me."

How about an identity or belonging loop"? Start with yourself. You are your basic identity. Then comes an identification with your family, then with your neighbors. On upward identification with your community, your country, your species, your genre, your kingdom [plant or animal], your planet, star, galaxy...your cosmos. But where is the white hole? To find it you have to go inside, go down below your ego, below your self, down to the mindful essence that is doing the identifying, then suddenly the white hole appears and you and the cosmos are one. You belong!

If you can go through the white hole,² what you belong to also belongs to you. How strange, that not only does the whole contain each part, but each part contains the whole. And now we can understand the answer to the questions: Who is my brother? Who is my neighbor? You, your brother and your neighbor, are all One. The Kingdom of God is within each of you.

All exists as a consequence of one or more of these great loops. However, whenever any loop is broken open, through a part seeking to be the whole, the loop ceases to exist.

¹ Perhaps there is a third loop. The aesthetic loop! Whenever we become transfixed with the beauty of a wildflower, a butterfly, a snow capped peak, a cloud,, we are in that loop which includes Heaven.

² Sometimes this white hole is called enlightenment, sometimes salvation, sometimes surrender.

MUTUAL CONTAINMENT PART I

The relation between parts and wholes has been a topic of interest to both philosophers and mathematicians since classical times. The whole is equal to the sum of the parts is a mathematical cliché. The whole is greater than the sum of the parts is an ontological cliché. And in the 20th Century, car thieves discovered that the sum obtained from selling the parts of a car is greater than the sum obtained from the selling the whole car. But the sum of the parts is greater than the whole, is not yet a cliché.

Also in the 20th Century the traditional tautology that the whole contains the parts was updated with the discovery of instances where parts contain the whole; as for example, each cell in the body contains the information for replicating the whole. We are thus confronted with the notion of **mutual containment**. But the concept of mutual containment is not new, it has been around since classical times. For example, in the Gospel of Thomas Jesus says, "If there be anywhere those who suffer, then I suffer." And Mohammed writes, "If any Muslim suffers, then all Islam suffers." Both of these statements infer a mutual containment of the individual and the collective. But we note that the individual does not contain the collective in the same sense, or by the same parameter, as the collective contains the individual. And in the example of cells that contain the information for replicating the whole body, we note that the body spatially contains the cells and the cells informationally contain the body. In both examples mutual containment requires different parameters for containment.

Is it possible for there to be mutual containment with the same parameter? Consider the case of the "twin paradox" which occurs in special relativity. A and B synchronize their clocks and find they run at the same rate. Then A and B separate and move with respect to each other at a relative velocity of v . A then notes that B's clock ticks slower than his clock and conversely B notes that A's clock is running slower than his. While twin A remains on earth and ages according to the earth's clock, twin B races between planets at high speeds with a slowed rate clock. According to the paradox, when traveling twin B returns he finds that A has aged say 20 years while he himself has not even aged a year. However, since special relativity does not allow any origin or fixed frame by which to measure velocity, there being only relative velocities, then the earth has been moving about at the same high speeds relative to B that B has with respect to the earth. So why should B not be older than A as well as A being older than B?

Also in special relativity, A and B compare their meter sticks and find them to be of identical length. Then A and B separate and move with respect to each other at a relative velocity v . A notes that B's meter stick is now shorter than his, and conversely B notes that A's meter stick is shorter than B's. But when B returns A and B again find their meter sticks to be of the same length. No mutual containment. Hence, the paradox is not about A being older than B but why time should be different from space or from collectives/individuals, or genotypes/phenotypes, none of which can be mutually contained with the same parameter. Is it possible that time by itself can be mutually contained?
A/cm2

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
 - Involves conceptualization
- II Data Organization
 - Involves infrastructures or paradigms
 - Involves filtering and signification
- III Data Processing
 - Involves reconceptualization
 - Involves representation
 - Involves aggregation and de-aggregation
- IV Interpretation of ‘packages’, concepts and theories
- V Evaluation and Implications of the ‘packages’

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 Mack [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."

provable

proved

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.

ADD

ALTERNATIVES

THE FIRST ALTERNATIVE:

The first alternative is to pursue alternatives rather than pursue what has traditionally been called The Truth.

The concept of "Truth" as an obtainable inclusive homomorphic representation of the world formulated in anthropomorphic ^{symbolic} terminologies derived from anthropocentric viewpoints is a chimera that has directed human intellectual activity throughout history. In one of its latest manifestations it is called "A theory of Everything". The pursuit of Truth makes the assumption that human experience can encompass a sufficient set of phenomenological events that when processed by our particular mode of thinking the product will be a valid model of the universe. But the point to be made here is, not that a valid model is not a desiderata, but that instead of focusing on trying to perfect one model, our pursuit should be to find as many valid models as humanly conceivable. ^{what is the cause of their validity.} And in the immediate situation, the task is to support ^{can it be supported} this proposition with as many alternative arguments as possible. ^{it} -[The heavy prose approach, This could be made even heavier but that would require German.]