ONTOLOGY

ONTOLOGY 101

NOTE33S.WPD November 15, 2004

ONTOLOGY 101

CONTIGUITY AND CONTINUITY

[REF: BEXISTS.WP6, 1998#28; NOTE17S.WPD, 2004#65]

We live in a "solid state" reality. Our perceptions of the world are that it is contiguous and continuous like solid state matter,. Whereas "real reality" may be more akin to a liquid or to a gas than to a solid having rigid contiguity and unbroken continuity, our perceptions and experience have decreed otherwise. In fact, contiguity and continuity have become the "cement" that holds together our present world view of reality. (And derivative of our percepts of contiguity and continuity are our concepts of causality and consistency.) But against centuries of sensory evidence by billions of humans, the results of certain experiments in the 20th Century have indicated that we all may have had it wrong.

General Relativity tells us that space and time exist only in the presence of matter. The curvature of space and the clock rate of time are functions of the local density of matter. The inference of this is that space and time are not basic attributes of the cosmos, but are only a property of material objects. And since the distribution of matter in the cosmos is not continuous and contiguous, it follows that neither space nor time is contiguous or continuous. But this view not only contradicts common sense, it violates earlier scientific dogma. Newton held that space and time were "absolutes"; they were the essential infrastructure needed to give location to all objects and events. While this traditional view has been superceded, it still permeates our thinking because it fits everyday experience. How can we all be so wrong?
and common sense

Observations support Bell's quantum mechanical predictions of non-locality. No longer is an object either here or there, it can be both here and there. While this has been observed space-wise, it has yet to be observed time-wise, but if true, an object could exist both now and then. Avatars, Brigadoons, Camelots, the Once and Future King, no longer fantasies, but now become plausible possibilities. The real connections between entities, and even within an entity, are seen to be not spatial contiguity nor chronological continuity, but invisible connections of a non-material nature. Who is my neighbor? Who is my countryman? Is it a synchronicity that the internet has come along at just this time to give us new answers to these questions as the old contiguity and continuity definitions break down?

With perspicuity beyond contiguity and continuity, the old cliche of connecting the dots has to upgraded. There has always been some sort of table to hold the dots. But now the table exists only in the immediate vicinity of each dot. Does this mean there is no longer a "Newtonian" logical infrastructure? How do we upgrade our logic to fit spatial and chronologic non-locality? It appears that our traditional rational processes are too limited, but Gödel has already demonstrated that this is so.

ONTOLOGY 101
Part I

The evolution of the Evolution vs Creation question:

1) Bible vs Darwin
2) Design vs Chance
3) Rules vs Self-organization
4) Two levels vs One level

The question shifts to: if rules, whence their source? But also, if stuff, whence its source? Do the rules and the stuff they govern have the same source? Or does the cosmos come into existence at the intersect or verge of the two? Or does stuff have "built-in rules" that lead to self organization? But again that would imply two levels. But we could say that no-rules leads to self-organization. But this still is some sort of rule. It seems difficult for us to avoid a two level ontology, be it self-organizing or governed by rules from a different source. There are rules and there is stuff. A final alternative would be that rules are only a different kind of stuff, but the existence of a second kind of stuff still leaves us with the number two, whether is refers to levels or kinds of stuff[1]. The ontological conclusion is that the number two is somehow fundamental to existence.

This conclusion is consistent with Eddington's "Uniform sameness is philosophically indistinguishable from non-existence." That is, One does not exist. So existence begins with Two, i.e. begins when there is some sort of difference. It is also interesting to note here that Pythagoras who had no symbol for nothing, there was no zero in his time, concluded that one was the proper symbol for nothing. Again it takes two to exist.

So the school board in Kansas should decide whether to allow two to be used in schools or to pass laws requiring its deletion from all texts.

The above has ignored the question, does design imply a designer? Or do rules imply some sort of legislative body? We avoided trying to answer the two questions: Whence the source of rules, and whence the source of stuff. For those who want to continue the Evolution vs Creation dialogue let them come up with the answers to those questions. The rest of us can take the dictum that two levels, matter/ thought, things/ names, two species of stuff, or a fundamental difference can be a launch pad for the exploration of alternative ontologies.

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[1]How about two kinds of stuff each with two levels, rules and stuff?

Not Chance ~~or~~ Design
but
The creation becomes the creator
The design becomes the designer
The selection becomes the selector

Was there an original creator, designer?

Self-organizing & evolving. i.e. 1
but the creation involves a dialogue
between what is now and what is next
The dialogue between is and become
be

⇒ 2

The inference of this view is no outside other level intervention
no outside source of innovation

Remarr Part I 1 ~~or~~ 2

ONTOLOGY 101

THE EVOLUTION of **CREATION vs EVOLUTION**

1) The Literal Bible vs Darwin

Is God the God of all or just of the earth?
He is God of all Creation.
Then why should the God of all Creation select the 24 hour rotation period of this one small planet as His unit of time for creating all Creation? Six earth days?

2) The Metaphorical Bible vs Darwin

Well, the Hebrew word, *yom*, can mean day, but it also means a period of time. The English Bible probably should have read, God created the world in six epochs or six periods of time, not literal days. The time span is not the issue.

3) Design vs Chance

With time span out of the way, what is the issue?
The issue is, did creation happen all by itself, by chance so to speak, or was there a designer, who designed the world and launched it on its evolving course? There do seem to be rules or principles governing the world and how it evolves, even Darwin admits this, so what is the source of these rules? A Designer?

4) Rules vs Self-Organization

We agree that there are rules, laws, principles that enable, guide, and limit what happens. The issue is are the rules separate from the world, written on some external tablet, designed and enforced by some external agent, or are the rules built-in-rules, implicit in the nature of matter, actual attributes and properties of the material world as it is, self-organizing, self-directing.

5) The Source: Back to Design vs Whatever

Whether the rules are implicit properties or external administrative guides there is still the issue of their source. Even if material particles have the "intelligence" to self-organize, how did they get that way? The demonstration of instances of self organization does not answer how the ability to self-organize was acquired. We are back to the issue of the source.

6) The Designer has been replaced by the Design

Whether there is an on-going Designer or not, there is an on- going design. This design can create and is accordingly a creator. And in this sense the Creator has merged with Creation, the Designer has become one with the Design, and Darwin would have to concede that the selection becomes the selector.

No one can define God, Theologians do not attempt to do so. And now it is becoming evident that "randomness" cannot be defined. Mathematicians and Scientists feel it to be undefinable.

So why is there a huge dispute between the God - intelligent design - crowd and the "chance" crowd. ?

It may be that God and Randomness are much the same

But ~~to~~ the argue and that randomness knows what is doing cannot be made.

We are approaching the subject entirely wrong. Wrong questions, wrong issue.

NEW EPIPHT

ONTDICH1.WP6 January 29, 1995

cf 1995#11

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. BRAHMAN bootstrap 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~~awareness. 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, universe. 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 separtation 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 $0 \rightarrow A$ and $\tilde{A}$ (no-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 (cloned) and a symmetric or opposite component

e.g. $b + \dot{c}$, $b + \tilde{c}$

• Cloning: Mitosis $A \rightarrow A, A$

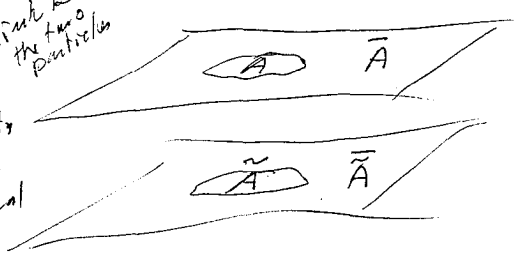
• Aristotelean $A + \bar{A}$ (not A) $= 1$ i.e. everything.

0 = nothing
1 = everything, but also nothing (Pythagoras)
1 does not exist

Trinity
Form
emptiness
No Form

$\exists$ a 3° that ties F and $\tilde{F}$ of Quantum Mechanics
Another Trinity
Is - Ought
Error signal

link between the two particles



$\bar{A} + \bar{\tilde{A}} = 0$

Redo G. Spencer Brown's Laws of Form

9-10-18

Inanimate entities possess a whole

Animate entities do not possess a whole

[cf. Gödel incompleteness theorm]
incompleable

ONTOLOGY is BASICALLY about Communication

9-10-18

Material

Mystery — NATURE: - a channel / a media — Human

Source — Messenger or Message ? — Searches / Receiver

Sensory channels

Meditation

Recognition

Ergodics — Mystic channel / Material channel

SEMIOTIC REALITIES

ERGODIC REALITIES

BIONTOL1.WP6 NEWPOINT February 12, 1995

cf 1995 #9

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.

Contrast space and time. The Leibnizian/Einsteinean 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 not-A is SAT but A is not-SAT

Dependent existences find 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.

non anti?

no-exist
non-exist

cf
David Bohm
2 orders
physical + replicate

Boot strap existence
absolute SAT
and relative or dependent existence.

What is SAT?

5

Diracean = co-emergence

(anti-self) + self = (no-self) = 0 (but maybe energy elsewhere)

self + (not-self) = 1

Symbols A

not $\underline{A}$

no $\sim A$

anti $|A$

ref $\bar{A}$

Calculus of Existence

$A + \underline{A} = 1$ Aristotle

$A + \sim A = ?\ A$ $2A + |A = A$, single existence

$A + |A = \sim A = 0$ Dirac

where is Eddington, Pythagoras

awareness of existence

V, the observer, in which the equations are contained must be included

Aristotelean Existence: discrimination, arbitrary & illusory

A, $\underline{A}$ can be made in multifarious ways

Vairachana (Dirac)

$0 \rightarrow A + |A$

Aksobya seals A (or $|A$) giving $A + (A + |A) = A + \sim A = A$

clones or seals or self references

$\bar{A}$ = a referent of A (not a clone)

$\bar{A} + A \rightarrow$ exist

BUDDHA12.WP6 June 5, 1995

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-essentiallity 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?) being and doing

Enlightenment has been called the ability to perceive simultaneously both is-ness and appearance.

The physical body is also an epistemology in that it is an infrastructure for the organization of experience. We may think of experience as a sheet of paper – each ~~exper~~ sheet experience. Since we are but the totality of our experiences – we may think of our bodies as a stack of experiences. On physical death, the stack itself disappears, but not the sheets – which are distributed to many files – reorganized in many ways.

Re Cap

Epistemologies

- The physical body itself
- A filing system (schema) for selecting, filtering + ordering experience
- Ritual as epistemology
- Practice as epistemology

An alternate expression of Tactism:

Kant's dyad of phenomena/noumena
is a function of epistemology

i.e. $P/N = f(\text{epistemology})$

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.

space - curvature

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

TECHONTI.WP6
95/06/20

Time and frequency are paired $T \cdot f = 1$
But also time and energy are paired $T \cdot E = \text{action}$ e.g. $\hbar$
as are position & momentum.

$$E = \frac{ML^3}{T^2} \qquad E \cdot T = \frac{ML^2}{T} = \text{action}$$

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
~~space~~ distance and curvature
channeled and open (4π) (wired and wireless)
signal and noise
mobile and static
node and link

EXEPIONT.WP6 95/07/12 In the airport, Phoenix,Arizona

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 ~~term~~ label 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

Peyote is an epistemology

THE ACQUISITION OF CONCEPTS

One of the attributes of humans, differentiating us from other creatures, is our ongoing pursuit of new ways to view and cope with the world. However, we habitually handicap ourselves by assuming that what we experience discloses the actual nature of the cosmos. We extrapolate and generalize to other realms what our senses lead us to conclude from local experience. Although we have succeeded in extending our sensory apparatus with an assortment of instruments–telescopes, microscopes, sensors of the non visual EM spectra, etc., we now know that our natural senses, even extended, give us only a partial snapshot of what may exist. We must now accept that it is illusory to equate the particular world view based on our limited perceptions with any Cosmic Reality.

But it is not only the limitations in our perceptions that have rendered our experience a special case, it is that the feed back from our perceptions on our thought processes has biased our manner of reasoning. Our logic and reasoning have been derived from and molded by our perceptions, and have contributed to our illusions as much as have the perceptions themselves. It follows that an effort to extend our reasoning apparatus could be as useful as the extensions to our sensory apparatus have been.

The enhancing of our thinking is largely through the acquisition of new concepts which extend our basic units of thought. While some of our everyday concepts, such as *saving* and *storage*, date back to pre-antiquity, sometimes the capturing of a basic concept is a matter of centuries. This is because a concept may for years lie dormant in countless anecdotes until a pervasive commonality is noted. When this happens the essence of the anecdotes is abstracted and defined in a phrase or two. And finally, with increasing familiarity, the concept is reduced to a single word. As an example, for centuries a notion of energy was sensed but the concept of *energy* wasn't grasped and explicitly defined until the 19th century. In the 20th century we have discovered that the relative equilibrium of the natural order that has obtained in our times is not absolute. We have learned from fossil records and deposits of rock and ice that major changes and great catastrophes occur from time to time. This realization along with the rapid advance of technology in the 20th century has resulted in a most remarkable rate of acquisition of new concepts: e.g., *catastrophe theory, chaos theory, ecology, genotype/phenotype, information, software/hardware, critical mass,* etc, etc.. Our everyday thinking has yet to catch up with the enrichment, and correction, afforded by these concepts.

We must note, however, that some concepts resist definition and have remained permanently encapsulated in anecdotal form. For example, many of the stories of classical mythology contain basic concepts that have never been reduced to a hard definition. And it may be where there is a richness of interpretation a story is superior to a definition, for to define is to truncate. Our thought processes are more powerful when equipped with both precise concepts, and ambiguous notions. The former to guide our reasoning and the latter to feed our imagination.

eponloop.wp6 September 22, 1995

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 <u>set</u> 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.

a vessel and a net

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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 with 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 MATROSHKA 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 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

95/09/07

ARTSRECT.WPG

A play within a play - e.g. Hamlet

3spexist.wp6 September 21, 1995

THREE KINDS OF EXISTENCE

Buddhists tell the story of a sage who wished to demonstrate to the king that all is emptiness. The sage asked that a chariot be brought in. He asked where is the chariot. The king pointed to it and began to wonder about the sanity of the sage. The sage then had the wheels removed. Where is the chariot? The king pointed to the remaining chariot. The sage then had the pull shaft removed, then the front, the sides, the floor, each time asking where is the chariot. As the chariot began to disappear, the king began to get the point. Where indeed was the chariot? There was no such thing as the chariot, for it could not be found in any of its parts as it was dissected. [This story is a good one for reductionists to ponder. The essence of reality will never be found in taking things apart.]

No matter where they looked they could not find the chariot. But still the chariot as a whole existed. If there is only the material realm, then the chariot had no quintessence as the sage demonstrated. Therefore if the chariot exists it must exist as an archetype. The chariot brought in before the king was a specific manifestation of this archetype. Here Plato seems to have deeper insight than the Buddhists. The sage's demonstration of emptiness is superficial. [Nonetheless the Buddhist idea of emptiness is correct, but this story is not a valid demonstration of the fact.]

The chariot will exist so long as one exists anywhere, even if a particular one of its manifestations is shredded. It exists as an idea, in memory, in drawings, in imagination, it exists as an archetype.

This brings us to the question, must there be at least one manifestation of an archetype for the archetype to exist? Is it possible for an unincarnated archetype to exist? [This is the same question that applies to information--must information be incarnated in matter/energy to exist or is there such a thing as 'pure information?] A slightly different formulation of the question is: Is one level existence possible? Can something exist only as an archetype or only as a thing? Next, since we know of the existence of lots of things, but nothing of the existence of their archetypes, does the creation of a thing automatically bring its archetype into existence? *

* with Pythagoras, we might assume number has independent existenc

We are led with Pythagoras to the conclusion that one thing does not and cannot exist. Either it exists in two level form as thing and archetype or in one level form through multiplicity and repeatability. In order for a thing to exist in the material world either a material prototype (~~one or more~~ more than one) must exist or an archetype in the informational world must exist (two level existence).. The two or more being the essential feature, two levels or two objects.

or by self-reference reflexion not cloning of Dreams re room inversion

Here we face the distinction between death and extinction. Death and extinction are two kinds of non-existence. (apophasis) If the multiplicity ontology is correct, then when the number of existing members of a species drops below two, the species ceases to exist. [The number two not only ~~from~~ for mating, but ~~from~~ for Pythagoras.] Humanity will exist so long as two manifestations exist.

It may be that there exists an asymmetry in the two-level ontology. An archetype can exist even though there are no manifestations. This would say that creating a thing does not create its archetype, but that the existence of an archetype will result in the manifestation of the thing. We have an interesting example that this might be true. All manifestations of small pox had been obliterated, yet the process of evolution has appeared to bring it back into existence. This perhaps because the archetype still existed. If this be so, then for extinction to really occur the archetype (for it) must be destroyed.

So far we have considered two ontologies: 1) The two-level archetype-manifestation model with its sub categories a) both archetype and manifestation must exist and b) only the archetype need exist. 2) The one-level multiplicity-repeatability model in which at least two (or more) material examples must exist. But there is a third kind of existence. The kind pointed to by the Taoist Ch'ang Sheng (Dictionary of Mysticism p33) see 1995-#11.

> "Such as Heaven and Earth have everlasting existence because of their 'not existing for themselves'"

3) This is suchness, SAT, ding an sich, thing in itself. BRAHMAN The primary oneness that does not exist as either things or archetypes, the monadic existence beyond Pythagoras, the meta existence that we sometimes call GOD. HEAD [Number here: 2] Sunyata BRAHMAN

2) b) A "reflexion" or self-reference rather than a clone gives existence (is this one or two level?) also Difference 0 → + and −

Type 1) and 2) are local (space + time) existence

Type 3) is global (all space + all time) existence beyond space & time

4ONTDYAD.WP6 September 21, 1995

FOUR ONTOLOGICAL DYADS

1. **Stapp's rocks and thoughts**

"Nature appears to be composed of two completely different kinds of things: rocklike things and idealike things. The first is epitomized by an enduring rock, the second by a fleeting thought A rock can be experienced by many of us together, while a thought seems to belong to one of us alone."
H.P.Stapp <u>Mind,Matter,and Quantum Mechanics</u>

cf template and thing archetype and manifestation

2. **Kalu Rinpoche's wake state and dream state**

If reality is to be decided on the basis of clarity and intensity, then both states are real. [If Chuang Tzu's criteria of continuity is used, then the wake state is the real state.]

I have experienced a 3D state in visions

what about repeating : reproducing

3. **Plato's archetype and manifestation**

All forms, processes, and 'laws of nature' are archetypes, i.e. patterns which can be manifested in space-time in specific, but similar instances. The archetypes exist in their own world, their manifestations occur here and there, now and then in this world. Myths are stories descriptive of the archetypes.

also templatonics

4. **Science's information and matter/energy**

Matter has been shown to be a form of energy. Whether pure information can exist independent of an incarnation in matter/energy is an open question. Particle physics has gone deeper into categorizations with its fermions, bosons, baryons, leptons, hadrons,etc. suggestive of different ontologies.

Matter = INFORMED ENERGY

5. KROON's Dyad of Quality / Quantity

Not measured — Measurable
Unique — ∴ Repeatable

What gives the unique existence?

Self reference? Akasobya?

WTRSHED.WPD December 27, 2000 rev JANUARY 31, 2001

THE REAL NEW AGE

The odometer of time marking the new millennium does not sufficiently reflect that far more than the numbers on a calendar are changing. We are not only entering a new century and a new millennium, but are entering a new Age. The last few decades are clearly a watershed between an age that began some 2500 years ago and what is now to come.

At the beginning of the 20th century, physicists felt that all of physics could soon be neatly wrapped up. All that remained was to increase the accuracy of some basic numbers by a few more decimal places. Then along came radioactivity, relativity, and quantum mechanics, and the physics that was almost complete had to be shelved and labeled classical physics, distinguishing it from a totally new physics. In mathematics, Hilbert felt that with a little effort the finish line could be crossed. But instead Russell and Whitehead failed to remove paradox from logic. And along came Gödel's incompleteness theorems drowning all hopes of Hilbert. Some diehards, logical positivists and operationalists, fought a last ditch stand to preserve the old paradigms, but the walls came tumbling down. Vienna Circle

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.

And there is a message for us on the societal level. If there is no single great Truth as has been claimed by many sects, religions, and political philosophies, it is time to become tolerant of diversity, indeed to relish diversity. Many views may have some measure of validity, but none can claim Truth. Our challenge then is to live with alternatives, with the ambiguities that differences demand of our thinking. Each picture can be a stem cell feeding the whole. No picture ~~can~~ must be a cancer cell seeking to replace the whole. view model

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:	Yetziral, 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 Herakleidos: 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 struralists 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, ħ. 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 x 10^{-11} $m^3kg^{-1}s^{-2}$, and ħ = 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, ħ... [Note: For each group of values of c,G,ħ, 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?

PYTHKOAN,WPD NOVEMBER 5, 1999

A PYTHAGOREAN KOAN

In Zen monasteries chelas are given koans such as "What is the sound of one hand clapping". These are exercises in how to escape conventional and traditional patterns of thinking, usually by positing absurdities or impossibilities. We can imagine that in the Pythagorean Academy about 500 B.C.E. something similar was done to enable the apprentices to attain greater freedom of thought. But more likely a Pythagorean koan, rather than being a logical absurdity or impossibility, had to do with a geometrical visualization, for example:

Visualize a prolate spheroid. Allow this spheroid to spin rapidly about one of its minor axes. What will be the resulting apparent "outer" figure? After reflecting the apprentice comes up with: The outer figure would be an oblate spheroid having the diameter of the prolate spheroid's major axis. Very good. Now visualize an oblate spheroid and allow it to spin rapidly about one of its major axes. What will be the apparent outer figure? The apprentice answers more quickly: The result would be a sphere with its diameter equal to the oblate spheroid's major axis. Good again. Now tell me what would be the apparent "inner" figure in each case?

Here the apprentice hesitates. What is the difference between outer and inner? Hmmm. The outer represents the portion of space occupied by the spheroid part of the time. It flickers giving a ghostlike semi-transparent image, like the spherical image in the spinning oblate spheroid case. Now what is the inner? The inner is the portion of space occupied by the spheroid all of the time. Its image appears to be solid and constant, not flickering like the outer image. OK, so what is the inner image of the spinning prolate spheroid? It is a sphere having a diameter equal to the minor or spin axis of the prolate spheroid. And what is the inner image of the spinning oblate spheroid? It would have to be a prolate spheroid with major axis equal to the major or spin axis of the oblate spheroid and with minor axis equal to the minor axis of the oblate spheroid.

Now, what can you say about the apparent images as related to the rates of spin? Well, off hand I would say that the faster the spin rate the less flicker and the more solid the outer image would appear. At some high rate of spin the inner image might even be obliterated. But it is hard to say at what rate of spin the inner image would be most enhanced. Most likely at a much slower rate than the optimum for the outer image.

You are leaving out an important factor in all of these perceptions. What are you ignoring? The apprentice is perplexed, reviews the visualizations, then hits on: How about the existence of some basic subjective frequency internal to the observer that leads to what is considered to be a fast or slow spin rate?

clock rate

Very good! Now explain the relation between perception and reality.

There is no reality only appearance
that are functions of object frequencies
and observer frequencies

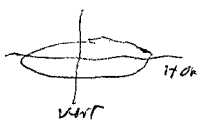
what is a whole what is a part
is a function of object and observer frequencies

Frequency Matroshkas

3 basic forms

inner outer
... sphere - prolate - oblate - sphere - prolate - oblate - sphere ...

← vert axis → hor → any axis
hor axis → vert → any axis
↓ self ↓ self ↓ self



BEXISTS.WP6 MAY 2, 1998

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. dogmas major tres

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~~?

NOTE17.WPD

October 11, 2004

CONTIGUITY AND CONTINUITY

See 2004#75
1998#28

We perceive the world as contiguous and continuous. However, this is an illusion, in part a matter of the resolving power of our senses, and in part a simplification imposed by our limited cognitive powers. We perceive spatial and temporal nodes, but not the spatial and temporal gaps between those nodes in which, hidden from us, myriads of relationships, links, and connections reside. While we are vaguely aware that there exist overreaching interconnections between all parts of the cosmos, both our perceptions and conceptions restrict our version of reality to knowledge of but a small fraction of the interconnections that actually exist. Not only are our perceptions and conceptions limited, but even our imaginations barely penetrate the narthex of total existence.

An important implication of a contiguous and continuous reality is that it is singly organized. That is, the universe is a unique organization, self consistent and self coherent. In current scientific parlance we feel there can be "a theory of everything", or in traditional theological parlance the inference is monotheism. However, certain modern experiences have brought into question the notion of the universe as a single organization. For example, the discrete nature of reality as evidenced by quantum mechanics, the implications of parallel universes in certain astrophysical data, and the incompleteness theorems of Kurt Gödel, all point to the possibility, if not the necessity, of alternate organizations within the cosmos. But these modern disclosures only reflect and affirm ideas proposed by ancient sages and savants that the world is constituted of multiple realities and organizations.

To contemplate that there are alternative intersecting realities is threatening to us. So we persist that, even if there are multiple worlds, we exist in only one, and our job is to live in and understand the one to which we belong. This is one assumption. However, some have the feeling that our species may exist in more than one of these multiple realities. Indeed, we may serve as bridges or links between two or more such parallel worlds. To explore such an hypothesis should be as much our responsibility as it is to explore our common world.

Put in the terminology of logic, we note that our common world is the ***intersect*** world of human experience. The new challenge is to explore the alternative realities that are manifested in the ***union*** of human experience. This violates political correctness, all men are created equal, etc. But, equal or not, humans have both common and unique experiences. Many of these unique experiences possess commonalities that infer they are not just pathological. These commonalities constitute a ***sub-intersect*** of experience that permit the application of some of the tools of the scientific method. However, every reality or ontology requires its own epistemology. The challenge ahead will be to develop the new tools and the new epistemologies required for the exploration of these alternative realities.

PARA WORLDS

ATH

77

CREATIVITY: VARIATIONS ON A THEME

All creativity is a matter of variations on a theme, of what can be done varying certain parameters while holding others fixed; that is, freedom within constraints. This is true both in art and in science, and perhaps even in nature. For example, in music, the scales have fixed values, but the selection of the order and length of notes is left free to the composer. In the art of Japanese dress, the kimono and obi are fixed in form, but pattern and color are left free to the designer. But science as well as art conducts variations within a theme. The empirical method designs experiments with certain parameters fixed , others free to vary. The ultimate fixed constraints of science, however, are *consistency* and *reproducibility*. We may question whether even the cosmos itself, taken as a creation, is also but one variation on some theme.

Some examples of variations within a theme:

In the case of film, there are the parameters of plot and setting. Film makers who vary the setting have kept the plot fixed [plot of horse opera = plot of space opera], but those who work with a fixed setting vary the plot [soap operas].

As for cities: Those with a random street plan, constrain building style, as in Santa Fe, New Mexico, a city whose streets were laid out by straying cattle, but which restricts all buildings to the uniform style of *adobe* . But most American cities, permit total freedom within the constraint of *orthogonality*. That is, the street plan must be rectangular and all buildings, whether skyscrapers, warehouses, or residences, must be boxes. But within the orthogonality constraint, architects may be creative. [But one or two Frank Gehry type non-euclidean structures per city might be allowed.]

Astrophysicists have adopted the policy that only theories subject to the Cosmological Principle are permitted. This principle is the assumption that terrestrial experience is both universally valid and is sufficient to explain the cosmos.

Politicians like to "frame the issue". This means the public has freedom to take sides once the sides have been defined. But the public is constrained from participating in the framing process.

In the above examples we are the ones who decide on the constraints and the zone of variability. But nature also sets up constraints and zones of choice. What worlds are possible within the theme fixed by the values of the fundamental physical constants? We experience a world in which there is both necessity [determinism] and choice [zone of freedom]. But ultimately variations on a theme become a *tradeoff*. For example in a given optical system, the resolving power times the field of view is constant. There is no freedom of field size without running into a resolving power limit. Thus the product of necessity and options is also constrained.

$$N \times O = K$$

The theme, N, is still fixed, but the variations, O, are limited by the equation $O = K/N$. From this a law of creativity emerges:

If your want to do this, you will have to cut back on that.

VARIATIONS ON A THEME

There are several recent books,[1] authored by physicists and cosmologists, that hold that our universe is exactly what it is because of the values of particular numbers, called the constants of physics. The inference is that if the values of these numbers were different, even slightly different, then the world itself would be completely different. [chaos theory again], or might not even exist. This same theme is picked up in the so called "Anthropic Principle" which hold that the fine tuning of the values of these numbers is why we are here. With other values life would never have happened. In all, the conclusion is that the values of these constants are a necessary condition for the universe, the galaxies, the stars, the elements, life, and for us to exist and be what we are.

But are these values sufficient? Do they constitute a sufficient condition for all to have happened as it did? In other words, given the **template** created by these values, did what happened have to happen? Was it necessary that the template be "filled" or realized in just the particular way it was? Were there other options? The template being partially filled in different ways? Portions of the template never realized? While the numbers template defines or limits what *might* happen, does it state what *must* happen?

If the numbers template is both necessary and sufficient, then the universe is totally determined and it will follow a single scenario to its conclusion. If, on the other hand, the numbers template is only necessary, then there would be a *set* of possible universes any one of which could occur. [Or possibly many members of the set could occur]. Lack of sufficiency then infers that the universe is, at least in part, open ended. There is a portion of the universe that permits options, choices, and selections. The numbers template creates a group of primary "nodes" and the rules by which they must be linked, but that is all. It leaves open ended and free the innumerable patterns in which the nodes may be assembled so long as the rules are followed.

If this be the case, then Creation, the Creation of Brahma the Creator, is like all the other creations, those of artists, architects, mathematicians, and even of theoretical physicists and cosmologists. Creation and creativity is a matter of variation on a theme. Brahma's theme is annunciated in the values of the fundamental constants, but multifarious variations within his theme are possible. The architect can design many buildings but within the constraints of the strength of building materials. The mathematician can create many theorems but within the constraints of logic. The cosmologist can create many cosmologies but within the constraints of observables. It might appear that what Brahma had in mind when he created the world was to discover how many variations on his theme would occur. He was not interested in one show and was bored with repeated reruns. Brahma loved variety, all the variations that were possible on his theme. [Self Reminder: Next time alter the theme so that even more variations will occur]

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[1] Books with the thesis appearing in the title itself include: Just Six Numbers by Martin Rees, and The Nine Numbers of the Cosmos by Michael Rowan-Robinson

NOVONT1.WPD June 23, 2004

ONTOLOGICAL ALTERNATIVES [1]

1) Our modes of perception, whose products we call facts, are limited to small portions of a few of the many dimensions or spectra that constitute the **world.**

2) Our modes of processing and organizing experience, our ways of thinking, [eg dyadic thinking], have projected contiguity and continuity onto the world, resulting in the view that there exists one coordinated coherent whole.

3) For example, space and time may not be contiguous or continuous, but contiguity and continuity are imposed on them in order to unify and simplify our experience of reality.

4) Even space and time themselves may have no existence except as human mental stage settings constructed in order to fabricate a reality consistent with our modes of perception.

From the above, we find it necessary to recognize several possible structures:
We tend to dichotomize, a way of thinking that imposes limits on reality
How much of the world is external and how much internal? Etc

The basic dichotomies in our thinking:

subjective | objective,

external | internal [mind may be both] [consciousness may be both]

phenomena | noumena [Kant]

experienceable | non-experienceable

experienced | not-experienced

1996#49

EXISTS | NOT EXISTS

CHILD { BLANK SLATE / NOBEL SAVAGE, CORRUPTED / GHOST IN THE MACHINE } re nature of HUMANS SOUL

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[1] It is necessary in this speculative essay to define some terms that are used interchangeably in ordinary discourse: We shall need to differentiate between such terms as Reality, reality, world, cosmos, universe...

Although there may not exist anything corresponding to our concept of "the whole", we shall here use the term **world** to designate such a hypothetical whole.

BASQUEST.WP6 DISK:EPIONTOLOGY September 17, 1993
May 20, 1994
May 31, 1994

PLANES OF EXISTENCE

0. Above, between and below; before, during and after; outside, throughout and inside; all that exists is the void, the Sunyata, the level of non-existence, of nothingness, emptiness, and formlessness.

I. Out of the Sunyata emerges the first plane of being., the plane of essential being, where existence is sat, "thing in itself, ding an sicht, being per se". Existence in this plane requires neither the support of reference, loops nor multiplicities. Here lie the Truths that do not require repetition to be true. It is here that ONE, oneness, the number **1** exist. The custodian of the Sunyata is the first Tathagata, Vairachona.

II. From the first plane of being emerges existence of the second order, the form of existence in which it is possible to discriminate A from NOT-A. [On the first plane of being what is A is also NOT-A]. On this plane are: the symmetric dyads, matter and anti-matter, positives and negatives, entities and their opposites. Also on this plane are entities which are self-referenced. In general, existence on the second plane is created and supported by multiplicity. And multiplicity may take a spatial, temporal, or referential form. Existence created by sequential mitoses, repetition, or self-references. The One can become two either through a Dirac mitosis or through being referenced to second frame. It is here that Vairachona collaborates with the second Tathagata, Akshobya, to create and support existence.

III. What emerges from the Sunyata, either emerges with its opposite (Dirac symmetries) or is self referenced by Aksobya and Vairachona or woven into a loop with lower level essences by Ratna Sambhava. In effect all existence below level (I) requires some form of loop. Emergents a) link to their Dirac opposites per a symmetry or set of symmetries, or b) link to their self -references or c) link to their lower level representations and manifestations. A particular common type of loop is that between an archetype and a set of its manifestations. The archetypes exist per loops between level II and level III. They cease to exist unless they are manifested, and manifestations do not occur that are not rooted in an archetype. It is here that we have Plato's two levels of shadows (manifestations) and essences (archetypes).

III. The third level of existence is the level on which we and that which we experience exist. However, in order for anything to be experienced it must be recognized. That which is not recognized is not recorded and ceases to exist on this level. But recognition implies prior existence, either a) in memory in which case it has actually occurred before in level III or b) existence in the realm of the archetypes (level II) from which it is incarnated into level III. Humans have access only to portions of the realm of archetypes, i.e. we can recognize certain spatial and temporal patterns but not all. Part of our quest is to extend our domain of recognition of archetypes.

NOTE17S.WPD October 11, 2004

CONTIGUITY AND CONTINUITY

We perceive the world as contiguous and continuous. However, this is an illusion, in part a matter of the resolving power of our senses, and in part a simplification imposed by our limited cognitive powers. We perceive spatial and temporal nodes, but not the spatial and temporal gaps between those nodes in which, hidden from us, myriads of relationships, links, and connections reside. While we are vaguely aware that there exist overreaching interconnections between all parts of the cosmos, both our perceptions and conceptions restrict our version of reality to knowledge of but a small fraction of the interconnections that actually exist. Not only are our perceptions and conceptions limited, but even our imaginations barely penetrate the narthex of total existence.

An important implication of a contiguous and continuous reality is that it is singly organized. That is, the universe is a unique organization, self consistent and self coherent. In current scientific parlance we feel there can be "a theory of everything", or in traditional theological parlance the inference is monotheism. However, certain modern experiences have brought into question the notion of the universe as a single organization. For example, the discrete nature of reality as evidenced by quantum mechanics, the implications of parallel universes in certain astrophysical data, and the incompleteness theorems of Kurt Gödel, all point to the possibility, if not the necessity, of alternate organizations within the cosmos. But these modern disclosures only reflect and affirm ideas proposed by ancient sages and savants that the world is constituted of multiple realities and organizations.

To contemplate that there are alternative intersecting realities is threatening to us. So we persist that, even if there are multiple worlds, we exist in only one, and our job is to live in and understand the one to which we belong. This is one assumption. However, some have the feeling that our species may exist in more than one of these multiple realities. Indeed, we may serve as bridges or links between two or more such parallel worlds. To explore such an hypothesis should be as much our responsibility as it is to explore our common world.

Put in the terminology of logic, we note that our common world is the ***intersect*** world of human experience. The new challenge is to explore the alternative realities that are manifested in the ***union*** of human experience. This violates political correctness, all men are created equal, etc. But, equal or not, humans have both common and unique experiences. Many of these unique experiences possess commonalities that infer they are not just pathological. These commonalities constitute a ***sub-intersect*** of experience that permit the application of some of the tools of the scientific method. However, every reality or ontology requires its own epistemology. The challenge ahead will be to develop the new tools and the new epistemologies required for the exploration of these alternative realities.

EPIONTLEV.WPD June 17, 2006

EPISTEMOLOGICAL–ONTOLOGICAL ~~LEVELS~~ STAGES

(An Outline)

I. PERSPECTIVES WHAT WE CAN EXPERIENCE

Sensory inputs and limits Senses = messenger, experience = message
Sameness vs awareness and existence, [Eddington]
differences and change,
Retained and recorded inputs, what is noticed
the repetitive and regular [Whitehead]
frequency of occurrence and width of "now"

II. CONNECTIONS WHAT EXPERIENCES WE RECORD, REMEMBER

Reality = an interpretation repetition, regularity
From perspectives to pictures Monolatry
Zones, non-localities in space and time vs universals and "Truth"
Regression of contexts
HOW WE ORGANIZE EXPERIENCE
Fixations on continuity and contiguity
Causality and consistency
Aggregation of experience Theory vs opinion #OBSERVERS ↑ #OBSERVATIONS
INDUCTION
OPEN SUBJECT TO FALSIFICATION
Sets and elements
Convergence vs Divergence
Diversity vs multiplicity
e pluribus unum vs ex uno plures

PSYCHOLOGY
→ CERTAINTY
∴ MONOLATRY

III. SEMIOTICS HOW WE RECORD EXPERIENCE

Representations, language, image, music, rituals, forms
Abstraction vs generalization
Dialectics vs Eristics philosophy vs sophistry
Searching vs disputing CHALLENGE or THREAT
Win/lose games SPIN
certainty and doubt

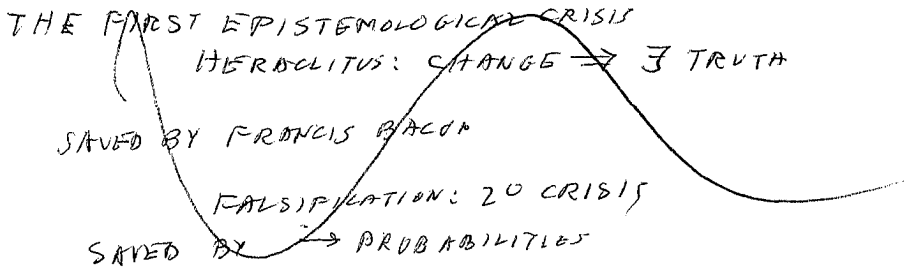
IV. CODES THE SEARCH MYSTERY

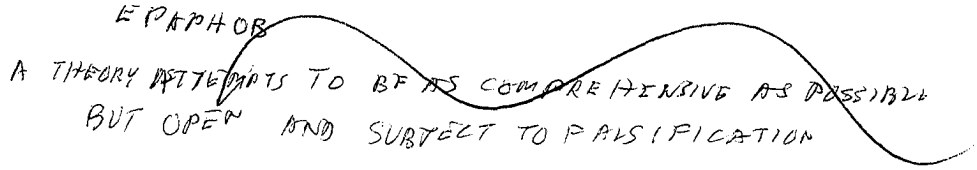
Communication metaphors
Nature's code: Number, mathematics Logic vs intuition
Mystical and sacred codes: Recognition

V. LAWS OF CHANGE

Openness and divergence
Fragmentation and emergence
Shelf life
Search for the diachronic: religion and science
Universals vs Invariants
The unexpected, innovation, "Virgin Birth"

HOW WE EVALUATE EXPERIENCE - VALIDATE
KEEP, TOSS


THE FIRST EPISTEMOLOGICAL CRISIS
HERACLITUS: CHANGE ⇒ ∃ TRUTH
SAVED BY FRANCIS BACON
FALSIFICATION: 2ᴼ CRISIS
SAVED BY → PROBABILITIES


EPAPHOR
A THEORY ATTEMPTS TO BE AS COMPREHENSIVE AS POSSIBLE
BUT OPEN AND SUBJECT TO FALSIFICATION

2001 #156

ONTOLOGY

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, ħ. 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 = 6.673×10^{-11} $m^3kg^{-1}s^{-2}$, and ħ = 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, ħ... [Note: For each group of values of c,G,ħ, 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?

A PYTHAGOREAN KOAN

In Zen monasteries chelas are given koans such as "What is the sound of one hand clapping". These are exercises in how to escape conventional and traditional patterns of thinking, usually by positing absurdities or impossibilities. We can imagine that in the Pythagorean Academy about 500 B.C.E. something similar was done to enable the apprentices to attain greater freedom of thought. But more likely a Pythagorean koan, rather than being a logical absurdity or impossibility, had to do with a geometrical visualization, for example:

Visualize a prolate spheroid. Allow this spheroid to spin rapidly about one of its minor axes. What will be the resulting apparent "outer" figure? After reflecting the apprentice comes up with: The outer figure would be an oblate spheroid having the diameter of the prolate spheroid's major axis. Very good. Now visualize an oblate spheroid and allow it to spin rapidly about one of its major axes. What will be the apparent outer figure? The apprentice answers more quickly: The result would be a sphere with its diameter equal to the oblate spheroid's major axis. Good again.
Now tell me what would be the apparent "inner" figure in each case?

Here the apprentice hesitates. What is the difference between outer and inner? Hmmm. The outer represents the portion of space occupied by the spheroid part of the time. It flickers giving a ghostlike semi-transparent image, like the spherical image in the spinning oblate spheroid case. Now what is the inner? The inner is the portion of space occupied by the spheroid all of the time. Its image appears to be solid and constant, not flickering like the outer image. OK, so what is the inner image of the spinning prolate spheroid? It is a sphere having a diameter equal to the minor or spin axis of the prolate spheroid. And what is the inner image of the spinning oblate spheroid? It would have to be a prolate spheroid with major axis equal to the major or spin axis of the oblate spheroid and with minor axis equal to the minor axis of the oblate spheroid.

Now, what can you say about the apparent images as related to the rates of spin? Well, off hand I would say that the faster the spin rate the less flicker and the more solid the outer image would appear. At some high rate of spin the inner image might even be obliterated. But it is hard to say at what rate of spin the inner image would be most enhanced. Most likely at a much slower rate than the optimum for the outer image.

You are leaving out an important factor in all of these perceptions. What are you ignoring? The apprentice is perplexed, reviews the visualizations, then hits on: How about the existence of some basic subjective frequency internal to the observer that leads to what is considered to be a fast or slow spin rate?

Very good! Now explain the relation between perception and reality.

and the particle - wave paradox
inner outer

KOANS01.WPD MARCH 10, 2000

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 Schőpenhauer noted that in order to reach deeper understanding at some point philosophy as vehicle must be abandoned. And more recently Gődel'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."

TIME AND LOGIC

Aristotle's law of the excluded middle [see Scraps 1999#54, 2000#69] in effect has instituted a way of thinking that precludes our seeing the world as it really is. His logic derives from basic human experience of the world portrayed to us by our senses, but not reflecting the many other facets that the world possesses. For example, in our sensory experience of the world two objects cannot occupy the same place at the same time, nor can a single object be two different places at the same time. These indisputable "facts" are at the root of Aristotle's logic, and are the basics underlying true-false polarization and the law of the excluded middle. For over two thousand years this two valued logic has not been questioned, but now...

But now comes Schrödinger's Cat, who defies polarization, and confounds our thinking about him in Aristotelean terms. The cat is not governed by the polarization canon of the excluded middle which says he must be either dead or alive. It is absolutely non-Aristotelean to have a cat who is *both* dead and alive or possibly *neither* dead nor alive. Quantum mechanics forces us to admit that the world as we have always thought it to be is but a special case of a larger cosmic reality, and our way of thinking is but an adaptation to [or creation of] that special case.

Let us introduce another cat. This cat belongs to the Chinese sage, Li Kiang. Li's cat is one of those who, if inside, wants out; if outside, wants in. And except for the minor periods of transit, at any one time the cat is either inside or outside. No confusion about that. But Li nevertheless sometimes becomes confused, for Li is one of those sages who is able to speed or slow the rate at which his sensory clock tics, that is, the rate at which subjective time flows. One of the meditations that Li practices enables him to halt the movement of the secondhand of a clock. [If the clock had a microsecond hand Li could also halt its movement, a nanosecond hand? Perhaps]. When in such a meditative state, Li does not have to worry about the cat. It is permanently either inside or outside, as motionless in its position as the everlasting hills. Thus, when Li uses this meditation, the apparent glacial rate-of-flow of external time transfers him to a Parmenidean world.

But Li is also able by slowing his subjective clock to speed the apparent rate-of-flow of external time, and this is where his confusion begins. [But not only is Li confused, but those who know and watch Li are confused. He can remain absolutely motionless for days at a time.] What Li observes during his slowed time meditations is that everything about him moves very rapidly. For Li, the cat is simultaneously *both* inside and outside, because an "instant" of time for Li spans many transitions by the cat. But when Li goes to the extreme and stops his subjective clock, then everything moves so rapidly that it vanishes from his perception, and Li's cat, like its cousin the Cheshire Cat, disappears. The cat is then *neither* inside nor outside.

We conclude: There is a different logic proper to different ratios of subjective rate of time flow to external rate of time flow. Logics employing the law of the excluded middle are proper with "normal" rate ratios, but lead to erroneous conclusions when observing a world with a widely different ratio, such as the micro world of quantum mechanics or the universe itself.

CHAOS1.WP5

THE DEGREE-OF-ORGANIZATION AXIS

open	loose	organized	locked
chaotic			linear
impotent			sterile
YIN			YANG
THERMO-EQUIL.			HARDENED

There is also built in movement along the spectrum of determinancy:

The Second Law of Thermodynamics is movement toward the left. (There seems to be a paradox here. Thermodynamic equilibrium may occur before the extreme left.) Entropy increases to the left. High entropic systems become increasingly impotent, uncontrolable, and unpredictable.

The Principle of Plenitude or Law of Hardening is movement toward the right. Homogenization increases toward the right. Closed systems are incapable of change, even those designed for change, such as the United States Constitution. Fully organized systems become sterile. They exist only for their own preservation and cannot be used as a tool. (Use as a tool may be a good definition for optimum.)

Creativity seems to be optimized in systems somewhere between the left and right extremes of chaotic and rigid. Psychological and economic depression occur at both extremes. It has been found that the healthy heart operates in a narrow zone between rigid regularity and chaos. Perhaps this condition of health results from the practice in sharpening the response of the system to disequilibrating factors. In other words, the optimum occurs at a meta-stable point. Life, health and creativity require a balancing act between the Second Law of Thermodynamics and the Law of Hardening or Principle of Plenitude.

exercising the immune system

"We have a lot of work to do to build a democratic partnership model that can operate somewhere between the authoritarian model, which tends to discourage participation, and the consensus model, which tends toward inefficiency and scapegoating."

Riane Eisler

I use consensus for evaluation not for decision making

Dionysius is forever escaping the forms Apollo casts him in.

CHAOS1.WP5 DISK:EPIONTOLOGY 08/08/89

THE SPECIES OF DETERMINANCY: A SPECTRUM FROM LINEAR TO RANDOM

LINEAR, CAUSALISTIC, NON BRANCHING
STOCHASTIC, LAW OF LARGE NUMBERS
NOISE
CHAOTIC, NON-LINEAR BRANCHING
RANDOM

NOTES:

RANDOMNESS CANNOT BE DEFINED.
ITS ATTRIBUTES ARE APPARENT STRUCTURELESSNESS,
NON-REPETIVENESS, NON-PREDICTABILITY, ACAUSALITY.
MUCH OF WHAT IS CALLED RANDOM AND ACCEPTED AS RANDOM
IS STRUCTURE WITH MORE COMPLEXITY THAN PERCEPTABLE
BY TRADITIONAL COGNITIVE PROCESSES.

PROBABILITY THEORY AND FRACTAL SPACE FILLING
ARE TWO STRAATEGIES FOR STUDYING TRANSITIONS FROM
LINEARITY AND CAUSALITY TO HIGHER DIMENSIONAL PATTERNS.
MENTION MUST BE MADE OF FEYNMAN PROBABILITY:
THE TOTALITY OF ALL PAST BRANCHINGS.

PATTERN IN TERMS OF PREVIOUS HISTORY:

DEPENDS ON ENTIRE HISTORY, TOTAL PATH
cf. extremum principles
DEPENDS ON LAST FEW VALUES,
i.e. on existemce of various
orders of derivatives
DEPENDS ON LAST TWO VALUES, FIBONACCIAN
DEPENDS ON LAST VALUE, MARKOVIAN

It is unfortunate that the term chaos was adopted to represent non-linear processes. The term was more useful to represent a primordial state which ontologically contained all pattern and potentiality, but apparently contained nothingness.

See American Scientist, March-April 1993
p114 on Random Numbers

The inverse operation of creation is not destruction or restruction, but is escaping structure. Śiva is not the destroyer in the sense of destroying structure, but in the sense of enabling escape from structure. Siva is the one who enables ascenscion of the ontological scala to levels of decreased structure.

Structure is imposed at every level and each level is ruled by the structure of the levels above. At the top (in the beginning) is the VOID or Sunyata. This is the level devoid of all structure. Subsequent structure is subordinate to the original structure created from the Sunyata. Can there be parallel structures? not subordinate? Yes.

The Brahamic or creation process is described by the activities of the five tathagatas: Vairachona, Aksobya, Ratna Sambhava, Amitaba, and Amoga Siddhi.

What is the inverse process? The process of Siva? The process by which one is liberated from structure and is able to rise stepwise up the ontological scala?

The urge to destroy is a dysfunctional distortion of the urge to ascend the ontological scala. The scala is not ascended by destruction, but by the following steps:

- creation of alternatives
- isolation of the parameters

similar to Zwicky's Morphological Construction.

cf Gurdieff's
removal of limits

Rev

ONTSCALA.P51 DISK:EPIONTOLOGY 07/14/92

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Dionysus is forever escaping the forms that Apollo is casting him in

BASQUEST.WP6 DISK:EPIONTOLOGY September 17, 1993
May 20, 1994
May 31, 1994

PLANES OF EXISTENCE

0. Above, between and below; before, during and after; outside, throughout and inside; all that exists is the void, the Sunyata, the level of non-existence, of nothingness, emptiness, and formlessness.

I. Out of the Sunyata emerges the first plane of being., the plane of essential being, where existence is sat; "thing in itself, ding an sicht, being per se". Existence in this plane requires neither the support of reference, loops nor multiplicities. Here lie the Truths that do not require repetition to be true. It is here that ONE, oneness, the number 1 exist. The custodian of the Sunyata is the first Tathagata, Vairachona.

II. From the first plane of being emerges existence of the second order, the form of existence in which it is possible to discriminate A from NOT-A. [On the first plane of being what is A is also NOT-A]. On this plane are: the symmetric dyads, matter and anti-matter, positives and negatives, entities and their opposites. Also on this plane are entities which are self-referenced. In general, existence on the second plane is created and supported by multiplicity. And multiplicity may take a spatial, temporal, or referential form. Existence created by sequential mitoses, repetition, or self-references. The One can become two either through a Dirac mitosis or through being referenced to second frame. It is here that Vairachona collaborates with the second Tathagata, Akshobya, to create and support existence.

III. What emerges from the Sunyata, either emerges with its opposite (Dirac symmetries) or is self referenced by Aksobya and Vairachona or woven into a loop with lower level essences by Ratna Sambhava. In effect all existence below level (I) requires some form of loop. Emergents a) link to their Dirac opposites per a symmetry or set of symmetries, or b) link to their self -references or c) link to their lower level representations and manifestations. A particular common type of loop is that between an archetype and a set of its manifestations. The archetypes exist per loops between level II and level III. They cease to exist unless they are manifested, and manifestations do not occur that are not rooted in an archetype. It is here that we have Plato's two levels of shadows (manifestations) and essences (archetypes).

III. The third level of existence is the level on which we and that which we experience exist. However, in order for anything to be experienced it must be recognized. That which is not recognized is not recorded and ceases to exist on this level. But recognition implies prior existence, either a) in memory in which case it has actually occurred before in level III or b) existence in the realm of the archetypes (level II) from which it is incarnated into level III. Humans have access only to portions of the realm of archetypes, i.e. we can recognize certain spatial and temporal patterns but not all. Part of our quest is to extend our domain of recognition of archetypes.

BIONTOL1.WP6 February 12, 1995

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.

The table ⊃ dots, but ⊅ not determined by dots - but an infrastructure to dots in a dot ≠

Contrast space and time. The Leibnizian/Einsteinean 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.

Dependent existences find 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.

≠ TABLE ≠ INFRASTRUCTUR
General Specific

ONTOLOGY SEMIOTICS

NOTE05.WPD July 13, 2004

THE SYMBOL WORLD

We live in two worlds: the world of things and the world of symbols we create for those things; the real world and a paper world.

- ☐ We begin by making symbols to represent things, actions, events, perceptions, experiences.

- ☐ Next we try to make the relations between the symbols match or map the relations between things and events in the real world.

- ☐ We then discover that the world of symbols can be detached from the world of its referents. We can manipulate the paper world detached from the real world. This allows us to create a quasi-reality. I e

- ☐ Finally we become so intoxicated with our power over the paper world that we begin to replace the real world with rules, processes, principles, and theories of our own design. Then we live increasingly in the paper world and ultimately believe it to be the real one.

The paper world tends to be synchronic. The real world is "meta-diachronic" We live in a matroshka of diatonic worlds.

not a scrap

KNOWKNO2.WPD 2002-08-25

KNOWING AND KNOWLEDGE PART II

Knowledge may be defined as the content of a knower's codebook Each infant is born with a codebook that allows matching of experiential inputs with a set of pre-existing patterns. . Certain codebooks facilitate their growth, others are fixed. And it is probable that all codebooks are bounded at some size.

DEFINITION OF TERMS:
Recognition The matching and coopting ability
Codebook The pre-existing set of patterns

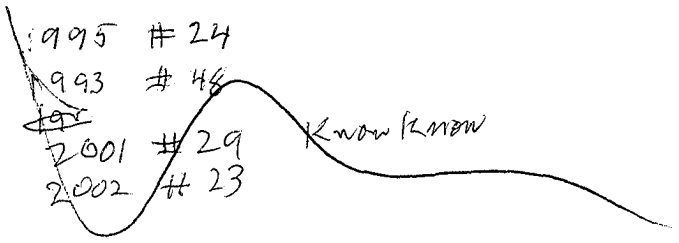
Knowledge is an evolving set of representations that are designed to be isomorphic to human experience in an evolving world. Knowledge is stored in an individual's or a culture's **codebook.** The mental facility that enables experience to be perceived and written into the codebook is **recognition**. The codebook is that inner facility which allows us to **recognize** certain portions of our experience and expedite their articulation into communicable knowledge.

Knowledge is multilevel Individual, cultural, perhaps planetary, and even cosmic.

Knowledge is acquired by recognition, that is, by matching a new experiential input with a pattern that is already in the codebook. But matching alone cannot explain the growth of the codebook. The codebook grows by there being overlaps between an existing codebook pattern and a new ezperience. If there is large overlap there is the danger of filing the new experience under an existing code, disregarding the novel portions not in the overlap.

Overlap tolerance: the size of an overlap that will effect coopting into the codebook.
Total overlap Not a new experience Only an affirmation of the probability of occurrence of the event. With a sufficient number of repetitions a pattern becomes a citadel of dogma.
Large overlap, most people can incorporate the innovative aspects of the experience if the overlap with codebook patterns is sufficiently large.
Slim overlap, requires speculative hypotheses to ingest the new pattern and make it fit consistently with existing codebook patterns.
No overlap. Not perceived. Not coopted eg Columbus ships arriving at the Bahamas
Enlightenment is the ability to perceive and coopt non-overlapping experience.

The growth of knowledge usually consists of modifying the inputs to fit the codebook but occasionally modifying and updating the codebook to accept inovations Individuals are more at liberty to modify their codebooks than is a culture, where acceptance is almost a matter of consensus. But individuals are under societal pressure to keep their personal codebooks pretty much in line with the cultural codebook or else take residence in an asylum.


1995 #24
1993 #48
2001 #29
2002 #23
Know Know

KNOWKNOW.WPD January 14, 2006

We know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say, we know there are some things we do not know. But there are also unknown unknowns–the ones we don't know we don't know.

–Don Rumsfeld (Feb 2002)

But, Don, why do you leave out unknown knowns, things that we know that we don't know we know? You know, like what the CIA and FBI know, but don't know they know.

Kinds of knowing : KANT
Sensory Phenomenon
Intuitions Noumenon

ONTDICH1.WP6 January 29, 1995

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.

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.

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
Kairos

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.

The world is made of symmetries and clones, unlikes and likes,
Mitosis is horizontal separation resulting in clones
Dirac separtation 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 $0 \rightarrow A$ and $\tilde{A}$ (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 (cloned) and a symmetric or opposite component

e.g. $b + \dot{c}$, $b + \tilde{c}$

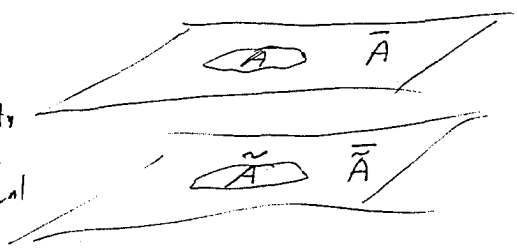
- Cloning: Mitosis $A \rightarrow A, A$
- Aristotelean $A + \bar{A}$ (not-A) $= 1$ i.e. everything.

0 = nothing
1 = everything, but also nothing (Pythagoras)
1 does not exist

Trinity, Form emptiness No Form

$\exists$ a 3rd that ties F and $\tilde{F}$

cf. Quantum Mechanics Another Trinity Is - exit error signal



$\bar{A} + \bar{\tilde{A}} = 0$

Redo G. Spencer Brown's Laws of Form

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. & pradipa

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.

THEO also Epiontology

VERTMIT.P51 DISK:GTDIALECTIC March 23, 1991

Creation of the Other is by vertical not horizontal mitosis

VERTICAL MITOSIS
A CYBERNETIC METAPHOR

In the beginning was is the error signal. Something is wrong, there is pain, there is longing, there is yearning, there is even despair and suffering. There is bewilderment, a wish to know, to understand

Next comes a self-referential examination of the ambient condition. An attempt is made to construct the "is" of the situation.

Thirdly, an idealized "ought" condition is visualized, and the error signal is assumed to be attributable to ("ought" - "is").

At this point the Buddha correctly pointed out that separation from the visualized ought is not the source of the pain. While the pain may be due to separation from some "true source", what that true source is is not knowable, and it is best to abandon all visualized oughts, i.e. remove the error signal by abandoning all desires.

The Western view has been to establish and deify an idealized ought and seek to reduce the error signal by moving toward that ought. It is even a postulated property of the ought that it assists us to reach it.

So long as we fail to reach the ought, we may sustain the model and the validity of the ought. However, when we near the visualized ought and the pain continues, we begin to question the model and the ought. This situation arises because the sought ought must be far beyond any realizable situation. The model can only be sustained by postulating a new higher ought.

This model assumes that through a sequence of higher oughts the "true source" will eventually be reached and the error signal set to zero.

The idea of vertical mitosis is that our pain results from an internal mitosis process that includes a splitting or separation between our "is" condition and an "ought" condition which somehow arises in us. Without this pain and despair, we would forever remain as animals. Vertical mitosis is what makes us human, it is the essence of the human condition.

03/23/91

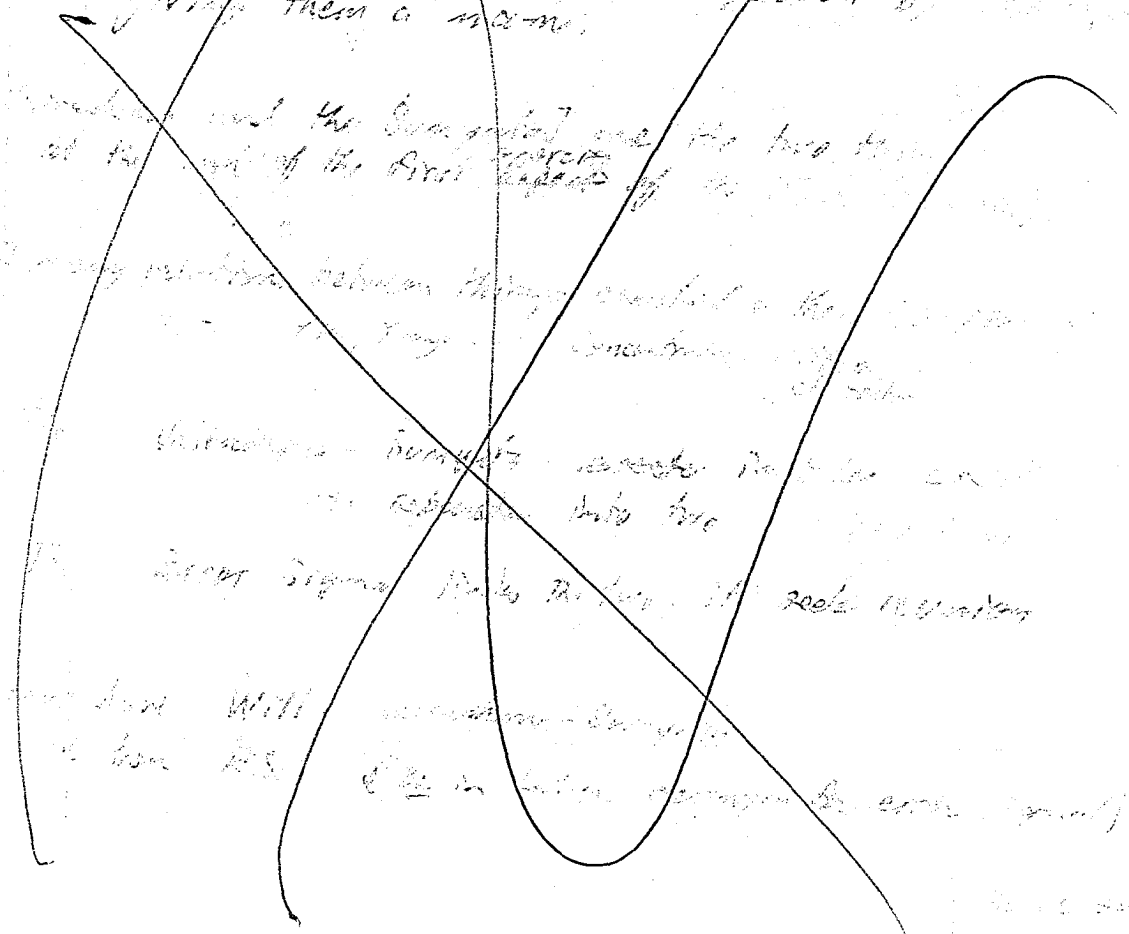
If the error signal is the antecedent to both God and Man, we have something closely akin to the Anthropic Principle.

03/24/91

The name of the Error Signal is Will

03/23/91

The error signal is like the fault line or seam in ONTAPHI.WPS. God and Man must be separated in order for aught to exist either



Bifurcation

EOMIRROR.P51 DISK: ~~AGWWORKDISK~~ EPIONTOLOGY July 19, 1990

For there to be consciousness there must be both knower and known. The Cosmos once set aside part of itself to reference itself. A great mitosis occurred which split it into knower and known thus making consciousness possible. Consciousness and knowledge became the links which could once again reunite the parts of the Cosmos into a whole.

The Cosmos per se is not knowable for it has the property of reflecting only what exists in a knower or observer. What we call knowledge of the Cosmos is therefore limited to our own reflections in the Cosmos. While the Cosmos is infinitely rich and capable of infinitely many reflections, what it reflects depends on the mirror that is held up to it. Observers design different mirrors, frequently called epistemologies, and the more varied the design of the mirrors, the more varied the reflections they can produce. A knowledge is both that facet of the Cosmos that is reflected by a particular mirror or epistemology, and a reflection of some facet of the observer. In observing a reflection we thus observe a portion of the cosmos and a portion of ourselves. The reflections establish an isomorphism between our minds and the Cosmos which accounts for our ability to represent the workings of the Cosmos with our verbal, sonic and mathematical symbols. The more reflections we can produce and behold, the more of the richness of the cosmos and of ourselves we can access.

In recognizing the interrelatedness of the cosmos and our selves, the mapping of our minds onto the cosmos and the cosmos onto our minds, we see that the philosophical dichotomy between an independent outer reality and an inner subjective reality has been bridged. Berkeley and Hume were stressing but two views of the same bridge.

There are those who ever seek to perfect one mirror, who say the more perfect this mirror, the more of the Cosmos they can know. While this may be true, why do these same observers frequently oppose the use of other mirrors. No one mirror, however perfect, can ever reflect the whole of the cosmos. The question becomes: Shall we succeed in knowing more of the cosmos by perfecting a ~~mono~~ single-mirror or by integrating the facets displayed by many mirrors. The answer is: Both.

we see the mapping => [ontology <=> epistemology]

Our ability to create is limited by a) what is
b) imagination

If we were to play the role of Brahman
we would be too ignorant even to use the
sunyata — we ∴ need science
to see what B did in this class

all our artifacts then are variations on a theme

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-#), 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-# . 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 ?)

The levels of ontological models are thus:

Single faceted, monistic
Multi- fixed, isolated facets
Multi- fluid facets
Amorphous

BASQUEST.WPW DISK:EPIONTOLOGY September 17, 1993
May 20, 1994

SOME ONTOLOGICAL SURMISES

I. The first realm of existence is the level of the archetypes (the realm of the sunyata?), which we may term Unitary or Vairachona existence. This is existence in the mode in which the number 1 exists. This is "ding an sicht, thing in itself, item per se, sat," existence. This is the truth in the Persian Adage that requires no reference or repetition to be true. The question here is whether this level of existence is the same as that of nothingness, void, non-existence.

II. The second level of existence is the level on which we and that which we experience exist. However, in order for anything to be experienced it must be recognized. That which is not recognized is not recorded and ceases to exist on this level. But recognition implies prior existence, either a) in memory in which case it has actually occurred before, or b) existence in the realm of the archetypes from which it is incarnated into level II. Humans have access to portions of the realm of archetypes, i.e. we can recognize certain spatial and temporal patterns. Part of quest is to extend our domain of access to recognition of archetypes.
Existence on this level, of material and mental experience, derives from Unitary existence by:

1. Ontological Loops. This involves some form of self-reference, and is generated through the "Aksobya -Vairachona Operation ".

Some Examples of Ontological Loops:

- Conscious(ness), which is a matter of self-reference. (Mere awareness is not)
  Vairachona and Akshobya are a loop giving existence to what is informed in the Sunyata.
  Much of our language floats in circular definitions, and we suspect this applies to the objects that our words represent.
  Aristotle's 'fallacy of the consequent' gives rise to ontological loops. An example of such circularity of reasoning that supports the existence of a system: (see van Doren p45)

  > "Good old boys are good because they do and think and feel the right things; and the right things are the things that good old boys do, think, and feel." (No error signal here)

  The Great Dialectic between man and God, two 'others' who iteratively recreate each other, also constitute an ontological loop.
  Self reference is a special case of a loop.
  Self and Other form an ontological loop (see I above).
  A subroutine of a program comes into existence through the operation of the goto and return loop.
  Cogito ergo sum is a loop.

While existence may be supported by loops, all such existence may not be unified. Much may exist in 'island' loops. Only when Ratna Sambhava ties the loops together do the islands become the continent we call the world.

BASQUEST.WPW DISK:EPIONTOLOGY September 17, 1993
May 20, 1994

SOME ONTOLOGICAL SURMISES

I. The first level is the level of nothingness, emptiness, formlessness, void, non-existence. This is the level of pure being, the level of the Sunyata. While out of the Sunyata comes what exists on all other levels, in the Sunyata is essential being, existence as "thing in itself, ding an sicht, being per se, sat", requiring the support of neither loops nor multiplicities. Here lie the Truths of the Persian Adage that require neither reference nor repetition to be true. And it is here that the number 1exists. The custodian of the Sunyata is Vairachona, the First Tathagata.

II. What emerges from the Sunyata, either emerges with its opposite (Dirac symmetries) or is self-referenced by Aksobya and Vairachona or woven into a loop with lower level essences by Ratna Sambhava. In effect all existence below level (I) requires some form of loop. Emergents a) link to their Dirac opposites per a symmetry or set of symmetries, or b) link to their self -references or c) link to their lower level representations and manifestations. A particular common type of loop is that between an archetype and a set of its manifestations. The archetypes exist per loops between level II and level III. They cease to exist unless they are manifested, and manifestations do not occur that are not rooted in an archetype. It is here that we have Plato's two levels of shadows (manifestations) and essences (archetypes).

III. The third level of existence is the level on which we and that which we experience exist. However, in order for anything to be experienced it must be recognized. That which is not recognized is not recorded and ceases to exist on this level. But recognition implies prior existence, either a) in memory in which case it has actually occurred before in level III or b) existence in the realm of the archetypes (level II) from which it is incarnated into level III. Humans have access only to portions of the realm of archetypes, i.e. we can recognize certain spatial and temporal patterns but not all. Part of our quest is to extend our domain of recognition of archetypes.

IV. Their are still lower levels of existence, those created or selected by ourselves. These come about by consensus. We agree on what to select from level III and what to ignore. What we agree to select we call reality.

Existence on level III, the level of material and mental experience, derives from higher levels by:

A) **ONTOLOGICAL LOOPS**

Ontological Loops involve either some form of self reference generated through the "Aksobya -Vairachona Operation " or a linkage based on some form of mitosis, such as the Dirac mitosis of splitting into a plus and a minus, that is into one or more ~~dimensions of~~ symmetry.

SEE ALEVONT1.W52 94-#20
RECORD1.W52 94-#17

HIERARCHY

SCIMETH1.WPW DISK:~~KENKO1~~ August 30, 1993

To Len 08/30/93 TRONCOLE

ON SCIENCE AND THE SCIENTIFIC METHOD

FUNDAMENTAL PROPOSITIONS: [To be retained in mind whatever our method of inquiry]

THE INTERACTION OF A DOMAIN OF INQUIRY WITH THE ATTRIBUTES OF THE INQUIRER INSINUATES THE METHODS OF INQUIRY. THE METHOD OF INQUIRY IN TURN DELIMITS THE DOMAIN OF INQUIRY. THIS IS AN ITERATIVE PROCESS.

AN EPISTEMOLOGY SELECTS AN ONTOLOGY
OR
AN EPISTEMOLOGY CREATES AN ONTOLOGY

EPISTEMOLOGY <---> ONTOLOGY Mutual Causality

There is a one-to-one relation between an epistemology and an ontology. That is, the methodology we employ results in a representation of the world, in a weltanschauung or worldview, but we tend to confuse the worldview with the world. Our ontology is not the world, it is but a particular model of some portion ~~tion~~ facet of the world.

THE EPISTEMOLOGY AND ONTOLOGY OF SCIENCE: see also van Doorn p. 187

THE DOMAIN OF SCIENCE IS THE SO CALLED *NATURAL ORDER*, i.e. THE DOMAIN OF EXPERIENCE ACCESSIBLE TO ALL HUMAN INVESTIGATORS AT ALL TIMES AND ALL PLACES PER SENSORY INPUTS.

THIS IMPLIES:

AN ONTOLOGY LIMITED TO THAT WHICH IS EXPERIENCABLE BY THE FIVE SENSES AUGMENTED WITH THEIR EXTENSIONS AND STRUCTURED BY INFERRED CONCEPTS.

THE REQUIREMENT OF ALL PLACES RESULTS IN THE POSTULATE OF THE COSMOLOGICAL PRINCIPLE.

THE REQUIREMENT OF AT ALL TIMES RESULTS IN THE REQUIREMENT OF REPEATABILITY, RESTRICTING THE DOMAIN TO LARGELY CYCLICAL PHENOMENA. + REPRODUCABILITY

THESE REQUIREMENTS RENDER SCIENCE EXCLUSIVE, PUTTING UNIQUE AND RARE EVENTS OUTSIDE, AND INCLUDING NON DETERMINISTIC PHENOMENA ONLY THROUGH THE ~~DEVICES OF PROBALISM~~. STOCHASTIC ANALYSIS

THE SCIENTIFIC METHOD FURTHER REQUIRES THAT ALL OF ITS EXPLANATIONS BE RESTRICTED TO ITS DOMAIN OF INQUIRY, THE NATURAL ORDER. ALL CAUSAL LINKAGES MUST LIE ENTIRELY WITHIN THIS DOMAIN.

Science has adopted Aristotle's "Law of the Excluded Middle" 00/07/08 which demands a one level universe, a monistic "theory of everything" a rejection of inconsistencies,

SCICOM1.WP6 June 16, 1996 REV June 29, 1996

SOME COMMENTS REGARDING SCIENCE

TOWARD A LIBERATION FROM APOLLO

If it isn"t repeatable, it's not science.
If it is repeatable, it's not art.

Li Kiang

Before science, rounded people lived on a flat earth.
After science, flattened people lived on a round earth.

Li Kiang

Science suffers from several procedural agendas that restrict the breadth of its applicability. There are several areas of human experience for which the scientific method is not productive and even within those areas for which it is suitable, there are limitations to the extent of its successful operation. Some of these limitations are intrinsic to the scientific method, others are due to arbitrary metaphysical assumptions which are present for historical rather than logical reasons.

_First, the domain of science is restricted to those phenomena that occur with sufficient frequency and regularity to be repeatably observed or demonstrated. If results are always to be reproducible, there can be no science of the unique and very little science of the rare. One of science's basic tools, induction, falsifies phenomena of limited repeatability

_Second, the logic of science, Aristotelian deduction, is based on the law of the excluded middle: Everything is either true or false. Though facts can sometimes be true and sometimes false, such facts are usually ignored unless an explicit temporal gate can be determined for them.

_Third, the most important scientific validifier and measure of science's usefulness is predictability. Without predictability there is no test of science. But predictability depends on causal determinism, so to protect its metaphysical base, science proclaims a dogma of universal determinism. However, causality is one-dimensional and it follows that for many areas of experience, "You can't get there from here" by science. Of course, the idea, "You can't get there from here" is an absurdity in a connected, causal-based topology or metaphysics. But Gödel demonstrated that there exist places that cannot be reached by deductive or causal steps from a familiar or axiomatic base. In holding firmly to causality, science insists that all circuits be series circuits, parallel circuits are forbidden. Lately trouble has risen in connection with

Chaos Theory which claims certain unpredictable systems are nonetheless deterministic. The historic link between predictability and determinism is now open to question.

_Fourth, the success of the analytic method has led to the promotion of reductionism to the rank of sacred cow. This limitation: the whole is equal to the sum of the parts, is being challenged by complexity theory which allows the whole to be greater than the sum of the parts, leading to emergence.

_Fifth, is the metaphysical assumption that the universe consists of one level, all is to be explained by the properties of matter in its many configurations. All explanations are to be horizontal. To posit more than one level, to allow the vertical, is to reintroduce superstition into the world.

REGULAR REPETITION
[SUNRISE, ECLIPSES]
DETERMINISTIC AND PREDICTABLE

IRREGULAR REPETITION [EARTHQUAKES, WEATHER]
DETERMINISTIC BUT UNPREDICTABLE
CHAOS {really deterministic?}

NON REPEATING
[3 BODY PROBLEM]
DETERMINISTIC BUT COMPUTABLE

NON REPEATING
[N BODY PROBLEM]
DETERMINISTIC BUT STATISTICALLY PREDICTABLE

RANDOMLY REPEATING
RANDOM AND UNPREDICTABLE

UNIQUE AND RARE
BEYOND SCIENCE

Is there an alternative approach?

Years ago Lance Whyte said the paradigm of the future would be **pattern.**

Pattern which is multi-dimensional will replace causality which is one-dimensional. This approach was naturally adopted by anthropologists such as Gregory Bateson, who have had to deal with parallel "circuits". Patterns emerge from the juxtaposition of several systems. Juxtaposition and parallelism are to pattern epistemology what induction and deduction are to scientific epistemology. There is already a long standing example of pattern inference in Law. This is circumstantial evidence, a multi-dimensional pattern that provides a picture of what happened even when certain jig-saw pieces are missing. On the other hand, linear evidence is halted anytime that one of the links is absent. This is also true of mathematical proof, but Gödel goes further and says even with no links missing, all available theorems do not complete the set of all possible theorems.
Causality not only cannot exhaust possibility, it cannot exhaust reality.

Question: what is the relation between the non-linear (Chaos) and multi-dimensional?

Science is the _-view of the world; Pattern is the ø-view of the world.

Li Kiang

1996#45

SCICOM2.WP6 June 18, 1996

MORE COMMENTS ON SCIENCE

W BACON'S IDOLS of THE TRIBE
ANTHROPIC PRINCIPLE

Localization Chauvinism
There is a great prejudice that localization must be an attribute of entity. Sensory derived attributes have given us the idea that all things that exist cluster their attributes in close spatial (and other?) proximity. Localization chauvinism is behind the astronomer's lecture on human insignificance based on the ratio of human scale to trans-galactic scales. This assumes that a human is a localized entity. The nature of quantum reality is beginning to erode our built in localization mind set. Perhaps the internet will also contribute to its demise.

"All knowledge refers to items of experience, but it is an open question whether all forms of experience are public."
-----?

"The cardinal virtue of the scientific method consists, above all, in its stubborn refusal to countenance expressions which have no empirical referents."

The more unexpected an event, the greater its information content. Thus rare events contain more information than common events. Science concentrates on the repeatable and reproducible, that is on the most common events, the domain of least information and of greatest entropy. What we must conclude is that science is about systems in or close to thermodynamic equilibrium. This is why science projects determinism onto the world.
Is this not somewhat close to Ilya Prigogine's conclusion?

Ernst Mach on Empiricism The Age of Ideology pp248-249

1. The thesis of empiricism: Sensations alone provide the real data or stuff of knowledge. The corollary of phenomenalism: The only terms of reference allowed are those which, directly or through definition, refer to sensations.
2. Auxiliary concepts may be admitted to scientific discourse, but only for the purpose of organizing hypotheses into a coherent system. [The pragmatic principle of economy]

{[For the special case of science this concurs with Wilson's two levels of epistemology: the data of experience and the unifying schema. see, for example, SCICOM1.WP6, the difference is that Wilson allows also for non-sensory experience, such as mathematics.]}
The basis of Mach 2 is the property of mathematics to represent the sensory world.

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?

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?

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?

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 ECOMOMIC UNITY AND CULTURAL PLURALISM. ARE WE ENTERING A PERIOD OF HOMOGENIZATION OR FRACTIONALIZATION? WHAT KIND OF MELTING POT IS EVOLVING IN AMERICA?

MY CABINET

LIST OF MINISTRIES

COMMISSIONER OF COGNITION
- Four Thought
- Alternate Logics
- Styles of Thinking

COMMISSIONER OF COSMOLOGY
- Pythagoras
- Time
- Quadrants and Octants
- Music of the Spheres

COMMISSIONER OF CLIPPINGS

COMMISSAR OF CAPITALISM
- Indictments
- Economics

MINISTER OF MATHEMATICS
- Pyramidology
- Polygons
- Enneads

MINISTER OF MATRICES
- Time and Frequency
- Force

POLYMATH OF EPIONTOLOGY
- Four Spaces
- Perceptors and Receptors, Emitters and Exchangers
- Nontology

SECRETARY OF SOCIOLOGY
- They, Wannabes, Herd, Fringe
- History
- America
- Terrorism
- Flaws

SECRETARY OF SPIN
- Brain Washing
- Education

SECRETARY OF SPIRITUALITY

UNFAMILIAR QUOTATIONS

ARCHON OF ABSURDITIES

MULTIPLEX1.WP6 96/07/20

THE SPECIES OF MULTIPLEXING

Multiplexing is the sharing of a channel. This can be done 1) through sending messages on different frequencies, 2) locating in different areas, 3) sharing time, and 4) by encoding. In communication technology these four methods of multiplexing are sometimes labeled:

1	FDMA	FREQUENCY DIVISION MULTIPLE ACCESS
2	ADMA	AREA DIVISION MULTIPLE ACCESS
3	TDMA	TIME DIVISION MULTIPLE ACCESS
4	CDMA	CODE DIVISION MULTIPLE ACCESS

All sharing involves multiplexing in one form or another. Bathrooms are time multiplexed, beds are area multiplexed, kitchens are code multiplexed (in the sense that two chefs will not be preparing the same foods), and furniture is frequency multiplexed (in the sense of its rates of movement compared with ours).

It has been argued that we share the world with other beings through different modes of multiplexing. For example, we share with wild animals through area multiplexing, with tame animals through code multiplexing, and with short lived insects, long lived trees, and the rocks and hills through frequency multiplexing.

In addition, we can imagine beings that share our world through frequency multiplexing by racing through our cities with such speed that we do not even perceive them. And beings of such different form (code multiplexed) that we do not recognize them as beings. And lastly, through time multiplexing we may share the world with beings of whom we are not even aware, we taking turns with them of being on stage and off stage, i.e of existing and not existing.

We must also ask the question, "Are there other modes of multiplexing than the four presently recognized?"

PARTICLES:TIME :: WAVES:FREQUENCY

Another venture into the jungle of juxtaposition. This time with frequency/time as wave/particle. Mathematicians have settled that frequency = 1/time, but could there not be more? In going from frequency to time may we not also be going from a wave to a particle manifestation. This seems to be the case in music. The horizontal time axis has a particulate nature consisting of entities distributed in time called notes. The vertical pitch axis references the frequency or wave nature of the notes. The human musician or 'observer' gets into the act by deciding where the time-to-frequency interchange should be located. For human music this seems to be somewhere in the interval eight to twenty hertz. That is for duration times less than about 1/20 sec we prefer to sense the frequency aspects.

Let us generalize from this music metaphor. By analogy, every entity from atoms to the cosmos, like every note, has associated with it both a duration in time and a wave pattern. While this time-frequency parameter may be singular for every entity, the t<-->f interchange is set by the t<-->f of the observer. In the abstract world in which mathematicians exist, they always set t<-->f at one. For humans the time side of the divide is usually called the lifetime of the entity, the wave side the frequency range of the entity. In general, the larger the entity, the greater its age, the smaller the entity the higher its frequency. The Planck particle has f = 10^{42} hertz.

Surmise: For every entity: $h\nu + (mc^2 \times d)$ = a constant, where h is Planck's constant, ν the frequency, m the mass, c the velocity of light, and d the life time.

An alternate approach holds that, instead of the time-frequency parameter being singular, there is either TDMA or FDMA (or both) multiplexing going on. In the TDMA version, every entity oscillates back and forth between its wave manifestation and its particle manifestation at some unknown frequency. In the FDMA version, every entity exists at two or more frequency levels. In this view a singular frequency spectrum could not even exist.

Another TDMA multiplexing model would have an information vs. energy oscillation occurring at some unknown frequency. Somehow every material form must be continually refreshed by being supplied both energy and information. This view holds that information-energy, time-frequency, and wave-particle are each two sides of a coin. [of how many coins?, one, two, or three?]

FOUR MODES OF SHARING

In a gestalt view the universe seems to be a foam, a mass of bubbles each pushing out against its neighbors seeking for itself as much space as possible. That may be the big picture, but when viewed with higher resolution, we perceive that entities interact with one another in other ways than pushing and devouring, in fact they have learned various ways in which to *share.* While the concept of sharing, may be an anthropocentric view of how parts relate to wholes, it at least appears to describe very well how living organisms operate within their ecosystems. Is it possible that the concept of sharing in some generalized forms could aid our understanding of the organization of the cosmos as a whole?

In the past few decades communications engineers are the ones who have been busy working on generalized forms of sharing. This is because communications networks involve being accessible to random numbers of users at random times for random lengths of time. The engineers have come up with four different "modes of sharing" These modes have been designated by the acronyms: ADMA, TDMA, FDMA, and CDMA.
When decoded they become:

Area Division Multiple Access
Time Division Multiple Access
Frequency Division Multiple Access
Code Division Multiple Access [1]

While a communications network may not be homomorphic with the cosmos, there are many commonalities. Let us begin by putting these modes into juxtaposition with the familiar ways humans and animals share the world.

First, ADMA: The basis of this mode of sharing lies in defining portions of turf by setting boundaries. Wolves and other canines mark out their territory with an olfactory fence spray painted with urine. Humans have also set up turf boundaries, but use fences and lawyers instead of urine to mark their turf. The common factor in this mode is the concept of private ownership. And eternal vigilance, analogous to the outward pressure of the cosmic bubbles, is required to protect ownership. (Some expansive bubbles like cancer cells or ego driven CEO's not only seek to take everything over but also to homogenize it into their own likeness.) Since there are many today who derive their personal identity from what they own and possess, we may expect ADMA, the mode of the ego bubbles, to continue to be an important mode of sharing for some time to come.

Second, TDMA: This is the basis of sharing that we learned in kindergarten – taking turns.
In the course of social evolution, there developed the idea of a *commons,* a bit of turf that was to be shared in time. This was a significant sharing development for humans, but even animals proved themselves capable of respecting a specific time for each species to have access to the

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[1] For a technical description of each of these modes see Scrap 19xx #yy.

water hole. While the basic idea in ADMA is personal ownership, the basic idea in TDMA is creating a commons or package which is jointly shared over time. Experience has demonstrated that making reservations for the ball game or opera, had certain advantages, such as reduction of conflicts which were inevitable before God invented time to keep everything from happening at once. We note that it has been only a century since the nations of the world finally agreed that the high seas were a commons. Britannia no longer owns or rules the waves. (But some nations still contend they own all the outer space above their turfs. It is not clear how far out) However, the spread of TDMA created difficulties for the ego driven who could not detach their identities from their possessions. They solved the problems implicit in time by pushing to be first in line (or *the* first on the block).

Third FDMA: Up to now we have been primarily concerned with the sharing of space and things. But as our cultures have become absorbed with movement and increasingly mobile, new conditions requiring sharing have emerged. These requirements have been met through the apportioning of particularly sharing through using different rates or frequencies. While frequency or rate sharing [2] has long been everyday for network engineers, it has only recently become visible to the hoi polloi who are beginning to glimpse this form of sharing in their freeway driving experiences. Perhaps the earliest example of FDMA was the introduction of express trains. One track for the local that stopped at every station and a second track for the express that stopped only at key stations. Multiple tracks or multiple lanes on a freeway are like a communication channel using multiple frequencies. Traffic in each lane is moving at a different rate, that is, operating at a different frequency. So long as these rates are distinct and sufficiently different the sharing of the freeway is optimized. Difficulties in sharing movement occur, however, whenever the rates or frequencies are not sufficiently different. As the rates in each lane become the same, the freeway operates like a single lane with a single rate. This happens when cars abreast in each lane are traveling at the same speed. Blockage also occurs when the rates are only slightly different and passing takes so long as again to create blockage. [3]

In addition to rates, another aspect of sharing introduced by motion is what is sometimes called "platooning" or packaging. This is the sharing of a vehicle or the device which is in motion. Instead of everybody owning their own ship or railroad car, space on each was for a period of time shared–a commons in motion. However, with the coming of the automobile the *ownership* syndrome of ADMA overcame the *commons* syndrome of TDMA. While FDMA was able to adjust to this, it was found that when automobiles themselves were "platooned" movement was enhanced. Both diversity of rate (FDMA) and packaging into a temporarily shared commons (TDMA) are important when motion is to be shared. As society becomes more

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[2]Strictly speaking frequency and rate are not dimensionally identical. However, if we think of cyclical rather than linear motion, as say a car doing laps around a race track, then the rate at which a car travels when converted into laps per minute is the equivalent of frequency.

[3]This illustrates the advantages of digitalization. If the rate difference between each lane was 10mph or more, such blockage would not occur. The digital (discrete) has many powers denied to the analog (continuous).

mobile and complex, we see that these two forms of sharing are playing an increasing role.

Standing back, we can see that humans share the world through FDMA. The universe itself seems to operate at several frequencies. Here on earth the clouds come and go in a few hours, they are transient phenomena to humans, just as we humans are transient phenomena to the mountains. And thankfully the furniture in our homes does not move about with the same frequency that we do. All of these differences of frequency permit sharing.

Fourth, CDMA: Here the mode of sharing takes us beyond everyday experience and introduces us to non-localism. In separating our identity from possession, position, location, and rank, we are well on the way to becoming what we essentially are. Our essence can be simultaneously in many places and taking many paths. We are held together not by space and time, but by a label or code that identifies each part of who we are and enables the parts to be reconstructed into the whole when the destination is reached. Ego is gone, but self remains. If what can be presently accomplished with messages on networks could also be done with humans in societies, an unimaginable transformation would occur. Is CDMA a metaphor for how we really share the world?

Each of the four approaches is predicated on the preservation of identity. But the successive approaches liberate self from the excess baggage not needed to preserve identity. The successive approaches represent increasing maturity. [4] But beyond the four comes the *altering* of identity. Through exchange comes symbiosis and the construction of an ecosystem, but possible only after modification of identity. Then comes the level of emergence, the creation of entirely new identities. Then follows selection and the altering of the whole, the society, the ecosystem, the world.

[A fifth mode has recently appeared (having to do with communication, but not with communication engineering). This is MDMA, Mental Delusion Multiple Access, a drug known as "ecstasy". What is communicated is the illusion of multiple access,. It operates through the lottery, giving out a minute share of the abundance (the Thatcher Policy), and supports the great bi-modal distribution of wealth in the world. MDMA is sharing by illusion.]

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[4]This is illustrated by the examples of drivers: 1) I own the road, keep out of my way. 2) I know how to take turns. 3) I am a team player. 4) I perceive the situation and operate egolessly to correct it.

FROM
CLIFFIWP698 - 9/12/96

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, sacred places and sacred times, special places and special times, places and times of opportunity,. 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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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?

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We can agree with the Buddhists that reality is an illusion.

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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.

TECHONT.WP6 1995#45 6/20/1995

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
space and curvature
channeled and open (4π) (wired and wireless)
signal and noise
mobile and static
node and link

CODE1[ORX] CODE2[
2BSORT.ASK
CONTIGNB.WPD August 12, 2005

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 <u>space</u> 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 be 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, 20005

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 KOANS OF AUGUST

Currently I am probing several questions. For some of them I have partial answers, for others no clue where to begin:

- What is the difference between concentration and mindfulness? What are the differences, if any, in the mental states of a 'top gun' fighter pilot and one who is meditating on a zafu?

- What is mind? Is mind local or global? Are there many levels of mind: individual minds related to individual bodies, group minds, a collective conscious and a collective unconscious, a planetary noösphere, a conscious cosmos? Which minds do we have access to? Which die with the body? Is recognition the process of access to a higher mind?

- The gates to 'emergent knowledge' are either by wrestling with paradox or experiencing recognition. The first seems to be bottom up, the second top down. The first requires effort on our part, the second seems to be a gift resulting from the removal of a cognitive road block, allowing us to become aware of something we already knew. The two approaches require quite different epistemologies: the first of the intellect, the second of the heart. Yet we must ask: Is there some deeper relation between paradox and recognition?

- What is the relation between variety and complexity? Is variety a pre-condition for the construction of complexity? Is a level of complexity a pre-condition for variety? Is oscillatory variety and complexity, [a process like breathing], necessary for the increase of either? Is complexity metaphorically 'solid state' variety?

- There is the ancient paradox of "passing through the eye of the needle", through the "worm hole" into another universe. If we focus down in space and time, into the immediate here and now, into the absolute present and presence, we suddenly discover we are released and pass beyond all of space and time. We glimpse infinity and eternity.

- Also it has been said that the narrower the focus, the greater the number of distractions. This would infer that total "anti-focus", in containing all, would therefore contain no distractions. Could this be mindfulness ?

- No system is capable of explaining itself. (cf Gödel)

- "It is more important to have thinkers than scholars".
  The scholarly pursuits require many facts, much memory (e.g. history).
  The thinking pursuits require few facts, but skills in several processes. (e.g. mathematics) It seems fair to say the first requires much experience but few tools, while the second requires little experience but many tools. This may explain why mathematicians reach their peak in their twenties and historians and philosophers after their fifties.
  The question is: which is the better source of emergent knowledge.
  ["My ability to be creative decreased because I got to where I knew too much"--- Richard Feynman]

- What are the basic ingredients of all forms? What parameters are needed for a complete and unique description of any structure? So far I feel candidates are: Limits, Levels, Orthogonalities, and Symmetries. The origin and evolution of form depends on several basic processes. Candidates are: repetition, iteration, recursion, regression, and modulation. The creation, stability, and dissolving of form involves certain dialectical principles, energies or forces. Some candidates are: variety vs. homogenization, balance vs. imbalance, fragmentation vs. consolidation, departure and return, order vs. freedom, actualizing vs. potentializing, enabling vs. inhibiting. Also involved are modes of sharing: ADMA, FDMA, TDMA, and CDMA, and possibly others. But possibly most important of all is "breathing", which is more than a metaphor for purification, it is the basic and universal principle of the cosmos. It is the necessity of interchange, the taking in and giving out, by every system with its context, of every part with the whole. The breathing of the universe is the essence of all dialectical balance and therefore of all

Existence.

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:	Yetziral, 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 Herakleidos: 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 struralists 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, ħ. 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, $G = 6.673 \times 10^{-11}$ $m^3kg^{-1}s^{-2}$, and ħ = 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, ħ... [Note: For each group of values of c,G,ħ, 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?

THE CONTINUOUS CONTIGUOUS AND DISCRETE

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CODMIX11.ASK ^N
EVOSTEP.WPD January 5,

THE DISCRETENESS OF CHANGE

While change may not be discreet, it appears to be discrete. Moments of change are interspersed between periods of stasis. For example, we age in spurts. Just when we become used to our current restrictions, we get a new set. The same culturally, just when we stabilize our comings and goings, some innovation pulls the rug from under us. This also happens in both science and in religion. When scientists begin to have it figured out, close to a theory of everything, along comes a new paradigm, and it's back to the drawing boards. Over millennia the same happens to religions. Every entrenched orthodoxy knows that new prophets with new theophanies are a repeating occurrence (and menace). Why does this oscillatory process of pause and change occur? Should there not be a Parmenidian changelessness or a Heracleitian ever flowing river? Is it to give new situations time for testing? Or is it that we feel secure in the old and fear the new?

The authors of myth understood this process very well usually framing it in anthropocentric terms. In Greek myth, for example, Hesiod tells us that the original gods, Chaos and Gaea and their family, including Erebus and Uranus, were the creators and first rulers. Then came their offspring, the Titans, who included Chronus and Rhea. Subsequently Chronus overcame Uranus and established the dominion of the Titans. But in turn Chronus and Rhea's children, including Zeus, Hera, and Hades, overthrew the Titans and established the dynasty of the Olympians. So the gods, whether representative of concepts, weltanschauung, or paradigms, were periodically replaced by new gods. And it is the offspring, the descendants of the gods (or consequences of the paradigms), that forced the replacements.

Not only the Greeks, but other cultures refer mythically or otherwise to paradigmatic changes. Judaism teaches there will be a new future brought by a messiah who is yet to come. Christians believe in a second coming of Christ. Buddhism tells us of Maitreya, the Buddha yet to come. And Hinduism goes even further with the concept of gods having many avatars. In the Bagavad Gita, Krishna tells Arjuna, "Whenever there is the need, I make for myself a body and return to earth." Native Americans believed in successive "Suns", or epochs that involved major transformations in the nature of being.The next or sixth sun will occur at Baktun 13.0.0.0.0 which is Gregorian 2012-12-12 In each view there are successive transformations resulting from a new revelation, a new theophany, or a new paradigm.

While the river ever flows, it is also periodically halted. Perhaps in order to self-reference itself. Or possibly dammed temporarily by those with investments in the ephemeral, but who are invariably swept away. Whatever the side effects on the banks, mortality and extinction or transformation and emergence, the river continues to flow.

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

ANALOG AND DIGITAL

The dyadic distinction of analog and digital, or continuous and discrete, is a reflection of two basic modes of reality and organization of existence. Our fundamental infrastructures of space and time operate in both of these modes. Many of our conceptual problems in science and philosophy, such as causality and action at a distance, arise from difficulties with accepting the validity of both modes. Contiguity, continuity, and neighborhood are generally thought of as belonging exclusively to the analog mode. However, each of these concepts have validity in the digital mode. Intensity of relationship may be obscured by gaps in space or time. Camelots and Brigadoons reflect our recognition of the discrete in time, (cf peri-time and dia-time), but we must relegate them to the mythic and unscientific. Many of our problems in the understanding of time have to do with sorting out the continuous and the discrete. Another aspect of all of this requires putting in order the quantum concepts of local and global, the everywhere and nowhere in one world and the here and now in another. (What transformation, not a fourier, is involved here?)

In the analog mode we can invert the world through the use of devices such as the fourier transform. What is continuous in the original is discrete in the transform: time and frequency, integers and real numbers. But there is more. The sounds that we have always generated in various analog ways may be synthesized digitally. What are the transforms of digital objects?

Another aspect of this has been pointed out by Tony Rothman. Only those systems obeying Maxwell-Boltzman statistics are subject to the second law of thermodynamics. Systems obeying other statistics seem to be immune. Maxwell-Boltzman goes with analog, Einstein-Bose and Fermi-Dirac reside in other modes. On the one hand, digital codes may readily be restored, similar in ways to holograms, while the analog, preserved from decay by continual amplification, is always subject to information loss.

CODE1[ORX] CODE2[TIM
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ANALDIG1.WPD DISK:COSNUM September 4, 1991

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TRANSFORMS

In the development of analysis several operations known as **transforms** were introduced. These operations had the property of altering the perspective on the objects being described. For example, a transform known as the Laplace transform

$$f(\alpha) = \int_{x=0}^{\infty} e^{-\alpha x} F(x)\, dx$$

has the property of converting derivatives and integrals into products and quotients or in general converting differential and integral equations into algebraic equations. Another operation known as the Fourier transform

$$f_s(n) = \int_{x=0}^{\pi} F(x) \sin(nx)\, dx$$

has the property of changing from a time perspective to a frequency perspective. Another way of looking at the Fourier transform is that it can analyze a continuous wave from and transform it into a spectrum of its harmonic contents.

An interesting example of this is the cochlea, the spiral shaped organ in the inner ear. The cochlea creates a spectrum of the sound wave received by the ear and sends the spectrum data on to the brain. The brain then establishes a fundamental frequency and separates its harmonics thus creating the sensation of pitch and timbre or tone color. In the outer world there is sound which is energy and information in wave form, while inside the brain there is a spectral analysis of the sonic information providing a fundamental and a set of harmonics each with an assigned relative intensity. The cochlea and brain have performed a fourier transform on the incoming energy-time information producing intensity-frequency information.

It is not clear whether the spiral shape of the cochlea is for any purpose other than economy of space. A straight tube of diminishing diameter with nerve sensors located linearly in the same way as they are in the cochlea would seem to perform the same function, all else being the same. However, spirals possess other important properties that may play a role in effecting the transform.

Another interesting example of the human transformation of information from the time-energy patterns of nature into an alternate information form is in the Weber-Fechner Law which states that inner information is proportional to the logarithm of the sensation received. This is true for optical information (cf the astronomers logarithmic scale of stellar magnitudes) and aural information (the logarithmic decibel scale for intensity of sound). Humans interact with the world by creating a transformed inner world which samples from the cosmos that which its sensors and processors can extract.

TECHONT1, WPG
6-20-93

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.

space - curvature

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
~~space~~ distance and curvature
channeled and open (4π) (wired and wireless)
signal and noise
mobile and static
node and link

MUSINT.WPG 1975

INTRODUCTION TO MUSICAL STRUCTURE

For a complete discussion of the organization of any body of knowledge or praxis, two complementary approaches are required: 1) The histoorical approach--describing the actual path by which the present state of knowledge or praxis was arrived at and 2) The morphological approach--describing all of the possibilites that may be seen from the vantage point, and disdvantage point,of the present. The path of development tells us about process--how we arrive at our structures and products. The second or morphological approach, in putting together as complete a structure as possible, best shows us where we may go in the future. Both of these approaches will be used in describing the origins of musical scales.

A further word about process vs. product or recipe vs. blueprint. A given structure may be made by more than one process, but a given process leads to but one structure. or a given place may be reached by many paths but a given path (branches being counted as separate paths) leads to but one place. This basic asymmetry between process and product, path and place, link and node, relation and entity infers the necessity of at least two non-interchangeable, non-dual elementals in the universe. Thus our basic theories must be founded on dichotomous sets. We shall in the present instance see that a qiven scale may be derived in several ways but any but any given method of derivation leads to but one scale. This asymmetry is of importance in relating the historical approach to the morphological approach. We could have ended up at the same place that we find ourselves today, even though we had followed other paths of evolution. The number of possible species (of scale, for example) may be quite limited even though the number of possible evolutionary paths is large.

All of this is contained in the relation between the number of nodes and the minimum number of paths linking them. If N is the number of nodes in a network, then the minimum number of essential paths connecting them is N(N-l)/2. It follows that $N < N(N-1)/2$ whenever $N > 3$.

Human creativity is constrained by the basic properties of the natural world, the properties of materials and substances, the laws of chemistry and physics, and the nature of our own beings. Yet within these natural bounds frequently our option space remains too large for our human information processing capacities to cope with. In this event we further restrict ourselves arbitrarily by introducing our own constraints--both,conscious and unconscious. These constraints may be cultural, social, legal, psychological whatever. They are agreed upon either tacitly or by conscious subscription. Artistic creativity usually takes the form of exploration of an arbitrarily restricted option space. Musical creativity, like other artistic creativity, consists of the intuitive and systematic exploration of an arbitrarily delimited option space. Its essence is the search for the aesthetic possibilities allowable within the constraints--the variatians on a theme. In particular in music we employ various arrangements of tonal elements that are permitted us by certain restrictive agreed upon rules. These rules derive both from the nature of sound and from our own physiological and psychological natures. These rules usually take the form of an organizational framework about which we structure the substance with which we wish to work. In the case of music the organizational frameworks are

the musical scales which determine the set of permitted and disallowed sonic elements and their relations. The substances with which we are working in music are sound and time although it may be somewhat redundant to speak of both since sound is not abailable to us except through the its fluctuations in time.

We shall thus take as our point of departure the processes and products through which we organize sound. These musical scales tell us what tones we may use and what tones are excluded and what are the relationships between the tones. Music may thus be defined as the ordered arrangement of sound according to certain agreed upon rules.

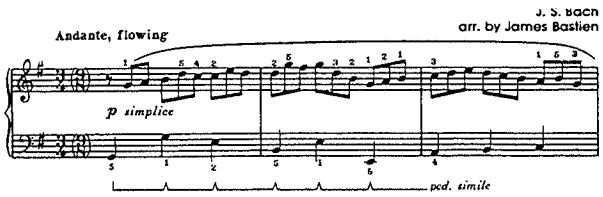
But on some deeper level what we call music is in no sense arbitrary but is a para-language by which we describe ourselves and the world in which we have our being. In some fundamental way the tones and their arrangements map with sound the basic essence of the universe. The physical world is certainly harmonically organized--the frequencies of nature--not only those of sound waves--bear certain definite ratios to one another. When expressed in pure number, these ratios, whether in music or physics, contain the secret of what may and what may not be. And for what may be, how it must be.

Beyond this music may be more than a way of describing ourselves and the world. Through the resonances it creates with other cycles, vibrations and harmonies, it may actually be reshaping ourselves and the world. Thus music must not only face the terrifying responsibility that faces all of art and human creativity. But even more, if what we create alters what already exists, then our responsibilities are those of gods and not those of children, which we persist in being.

MUSICTF.WP6 January 6, 1997

ON TIME AND FREQUENCY

Whenever I look at a piece of sheet music, I am intrigued by how the symbolism of music shows us that we invariably discriminate and separate time from frequency (or pitch as musicians prefer to call it).



In written music, time moves from left to right horizontally, while pitch goes vertically from bottom to top as frequency increases. We understand that pitch or frequency is the reciprocal of time, f = 1/t. So pitch and duration are just two different ways of looking at time. Why do we view time in these two distinct ways and how do we decide where to stop viewing time as duration and changeover to view time as pitch? Is there more involved than just inverting the 1/t equation? The equation tells us that there are as many frequencies between zero and one as there is time from one, or now, to infinity. But what is **one**, what does **one** stand for?

Depending on the loudness, the average human ear can hear sounds from about 20 hertz (cycles/second) to 16,000 hertz. Depending on the tempo there can be up to about M.M.240, that is at extreme prestissimo, about 240 quarter notes per minute. This value is equivalent to a quarter note having a duration of one quarter of a second, an eighth note one eighth of a second, a sixteenth note one sixteenth of a second, etc. Here the time durations of notes are approaching the same values as the frequencies we hear at the lowest levels of pitch. So it appears that somewhere in the range say 8 to 16 hertz we make the switch of preference between time and frequency.

The second is the shortest time unit that humans find useful to measure sensory experience, (nanoseconds and femtoseconds are for computers). We express time periods longer than a second in numbers of seconds, (or in units of multiple seconds, such as minutes, days, years). But we express time periods shorter than a second in frequency units or hertz. (There is, however, an ambiguous region between about 1 second and 1/20th second (or 20 hertz) where both systems are used. Also note here that the number of motion picture frames per second needed to create for

us the illusion of continuous motion is from 8 to 16). Evidently then, there is something fundamental in the internal human clock that switches in this zone.

One hypothesis is that humans use the Schuster Electron Time[1] [SET] of 0.121 second as a zeitgeber. Since this value is very close to 1/8 second, we might say that [SET] is the metronome that governs our time sense. We switch to frequency representations at times shorter than [SET] and to duration representations at times longer than [SET]. It is probably not fortuitous that the duration value of the second is near this period, but it does seem fortuitous that this value is related to the rotation period of the earth.

Another matter of interest in the musical utilization of time and sound is that in both the duration and pitch zones there are intervals of silence. In the horizontal zone, there is a brief silence between the sounding of each note. (One classical composer held that the whole purpose of music was to give quality to these intervals of silence). In the vertical zone there are non-pitch intervals between the values of pitch that are set by scales or modes. All of this is present in our music, but somehow musical notation obscures it from us. But then there are no symbols that carry all the reality of that which they symbolize.

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1) The Schuster Electron Time [SET] is a period associated with an electron based on the electron's mass rather than on its charge. The frequencies we usually associate with atomic phenomena derive from coulomb forces and are of the order of 10^{16} hertz. The [SET] derives from mechanical forces and has a value close to perception times of ordinary experience. The value of [SET] is given by

$$t = 2\pi\sqrt{\frac{r_e^3}{Gm_e}} = 0.121\text{sec}$$

New 0.120498

where r_e is the radius of the electron, m_e is its mass and G is the gravitational constant.

PYTHLNK.WP6 10/7/1996

Pythagoras and Planck

Back at the beginning of the present age around 600 B.C.E. Pythagoras felt that the natural integers themselves should suffice for constructing the universe. He was set back and dismayed when real numbers like $\sqrt{2}$ intervened. Even before his death the continuum of real numbers began to take over and prevailed until the beginning of the 20th century. Then at the beginning of the present age, Max Planck found that discreteness must be re-introduced. The continuum had failed. Pythagoras was justified when Planck showed that basic physical realtionships were governed by discrete, not contiuous, quantities. Of course, Pythagoras' misinterpretation was that it was the integers themselves that sufficed, when it was discreteness, one of the properties of the integers that was the essence. Today as digital replaces analog, Pythagoras is firmly back in business.

Sometimes many centuries intervene between the writing of the first sentence in a worldview and the writing of the second, with many by-paths being explored in the while. Today it might be possible to add to what Pythagoras began since there have been several contributions to his approach in recent years. It is fair to call such modern natural philosophers as Planck, Eddington and Dirac followers of Pythagoras, since parts of their work are clearly "Pythagorean". The have taken number to be the starting place of ultimate reality.

Today's Pythagoreanism begins with the so-called fundamental constants of physics. We might say that in the beginning God created the numbers h,G,and c, and from them all else follows. If the constants had had different values, then our universe would have been different. In fact we might not have even been here to contribute the consciousness feedback that gives the universe one of its modes of existence. In addition to re-introduction of the discrete, Planck took the fundamental constants, h,G, and c and using dimensional analysis derived a system of "natural units" with which to describe the universe. When translated into these units relations between the masses, sizes, and life times of physical entities were seen to reveal symmetries and patterns that bring to mind Pythagoras' own constructions of musical tones and their harmonics.

The dimensionalities that physicists feel best describe most phenomena are mass M, length L, and time T. Each of the fundamental constants possesses a dimensionality built up from these factors:

$$[h] = [ML^2/T],\ [G] = [L^3/(MT^2)],\ [c] = [L/T].$$

By suitably combining the fundamental constants, Planck defined units of mass, length, and time. In terms of cgs units the logarithms to base ten of these values are:

Planck mass = -4.263110 grams

EVOSTEP.WPD January 5, 2004

THE DISCRETENESS OF CHANGE

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While the river ever flows, it is also periodically halted. Perhaps in order to self-reference itself. Or possibly dammed temporarily by those with investments in the ephemeral, but who are invariably swept away. Whatever the side effects on the banks, mortality and extinction or transformation and emergence, the river continues to flow.

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[1] It seems fair to say that a paradigm is to science what a theophany is to religion.

[2] The next or sixth sun will occur at Baktun 13.0.0.0.0 which is Gregorian 2012-12-12

APRIL
4-9-2010

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.

GEOMETRY AND THE CONTINUUM

Geometry is an abstraction of certain aspects of sensory experience. And being an abstraction, it is a simplification. Assuming, as did the Greeks, that a point has no size, only position, a line has no breadth, only length, a plane has no thickness, only extension, many necessary properties of the physical entities in the world were derived. These are the properties of what we call **space**. It is to be emphasized, however, that space itself is not a direct sensory perception, it is an inference derived from a sub-set of perceptions that are largely visual. Traditional geometry derived many of the arrangements that are possible in space but ignored such sensory experiences as **force** and **time**.[1]

Over centuries the perspectives of Greek, i.e. Euclidean, geometry have been extended. This was done by abstracting additional sensory experiences, but we called these extensions physics instead of geometry. Physics continued to use traditional geometry as a tool, but physical experience led to questioning the universal applicability of such geometry. This had the effect of liberating geometry, allowing it to grasp that the geometry of Euclid was but a special case of conceivable geometries. Then physics in the 20th century discovered that those portions of physics thought to have been beyond geometry can properly be included within generalized geometries. So geometry again is the vehicle for describing much of physical experience, but it is a different geometry, one called general relativity. [2]

But a common property of all geometries, be they those of Euclid, Gauss, Riemann, or later is their predication of a continuum.[3] In mathematics this has resulted in two never completely reconciled views: that of arithmetic, algebra, set theory, ...discrete mathematics; and that of geometry, calculus, analysis, ...continuum mathematics. (Of course there are both discrete and continuous sets and discrete [finite] and continuous groups). But the two mathematics, both of which describe parts of the physical world leave us with the on going question: Is the world a continuum or is it quantized? analogue or digital? In the early years of the 20th century, a physicist, Max Planck, may have opened the gate to bringing our understanding of the physical world down on the side of the discrete violating centuries of both geometry and common experience.

In addition there is a basic relationship of the discrete with the finite and the continuum with the infinite. If the world proves to be discrete, does this invalidate not only our geometries but also our theologies?

> *The discontinuous and the 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. –Arnaud Denjoy*

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[1] Minkowski and subsequent physicists have treated time as an extension of space, a fourth spatial dimenstion.

[2]Another approach to the inclusion of size, thickness, force into geometry has been in the contructs of Buckminster Fuller. His is a possible discrete or finite geometry.

[3]A possible discrete or finite geometry may be inherent in fractals.

MATH01.WPD December 14, 1999

SOME NOTES RE MATHEMATICS

There are two ur-sources of mathematics: counting and measuring. Counting led to arithmetic, measuring to geometry, and from the marriage of arithmetic and geometry the rest of mathematics was born. Counting was literally digital, it gave rise to the natural numbers or integers. Against the discreteness of the integers, measurement introduced the continuous, leading to the real numbers–every point corresponding to a numerical value. Thus,

DISCRETE	CONTINUOUS
Arithmetic	Geometry
Integers	Real numbers
Digital	Analog
Multiplicity	Diversity

...and then came along the offspring, algebra, topology, analysis, ...

The continuous, geometry, was interested in patterns and dimensions, while the digital was interested in quantity and magnitude. It was Descartes, with his analytic geometry, who arranged the invasion of shape and pattern with number and scale. But now, Mandelbroit, with his fractals, is arranging the counter invasion of magnitude and scale with dimension and pattern, resulting in discrete patterns and regression.

We can note:

Scale : Dimension :: Value : Attribute

For example, the universe is a fractal in that it exhibits the same patterns on different scales. Thus exhibiting a certain type of symmetry, or even economy. It is the gaps, the nothingness, that give existence to the discrete. The content of non-sameness that gives existence to patterns. Thus the discrete and continuous represent two species of existence, and their marriage creates the world.

In the quadrad: Pattern, Dimension; Scale, Aggregate, both the discrete and continuous appear twice.

Notes 99/09/21, Little America, Flagstaff, AZ

CODE1[ORX] CODE2[
2BSORT.ASK
TIGTIN.WPD

September 28, 2003

CONTIGUITY AND CONTINUITY

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 endurable 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 conceptional 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 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.

NOTE17.WPD October 11, 2004

CONTIGUITY AND CONTINUITY

We perceive the world as contiguous and continuous. However, this is an illusion, in part a matter of the resolving power of our senses, and in part a simplification imposed by our limited cognitive powers. We perceive spatial and temporal nodes, but not the spatial and temporal gaps between those nodes in which, hidden from us, myriads of relationships, links, and connections reside. While we are vaguely aware that there exist overreaching interconnections between all parts of the cosmos, both our perceptions and conceptions restrict our version of reality to knowledge of but a small fraction of the interconnections that actually exist. Not only are our perceptions and conceptions limited, but even our imaginations barely penetrate the narthex of total existence.

An important implication of a contiguous and continuous reality is that it is singly organized. That is, the universe is a unique organization, self consistent and self coherent. In current scientific parlance we feel there can be "a theory of everything", or in traditional theological parlance the inference is monotheism. However, certain modern experiences have brought into question the notion of the universe as a single organization. For example, the discrete nature of reality as evidenced by quantum mechanics, the implications of parallel universes in certain astrophysical data, and the incompleteness theorems of Kurt Gödel, all point to the possibility, if not the necessity, of alternate organizations within the cosmos. But these modern disclosures only reflect and affirm ideas proposed by ancient sages and savants that the world is constituted of multiple realities and organizations.

To contemplate that there are alternative intersecting realities is threatening to us. So we persist that, even if there are multiple worlds, we exist in only one, and our job is to live in and understand the one to which we belong. This is one assumption. However, some have the feeling that our species may exist in more than one of these multiple realities. Indeed, we may serve as bridges or links between two or more such parallel worlds. To explore such an hypothesis should be as much our responsibility as it is to explore our common world.

Put in the terminology of logic, we note that our common world is the ***intersect*** world of human experience. The new challenge is to explore the alternative realities that are manifested in the ***union*** of human experience. This violates political correctness, all men are created equal, etc. But, equal or not, humans have both common and unique experiences. Many of these unique experiences possess commonalities that infer they are not just pathological. These commonalities constitute a ***sub-intersect*** of experience that permit the application of some of the tools of the scientific method. However, every reality or ontology requires its own epistemology. The challenge ahead will be to develop the new tools and the new epistemologies required for the exploration of these alternative realities.

CONORCON.WPD March 6, 2004

CONSISTENCY OR CONTIGUITY

Traditionally acceptability of phenomena into our models of the world requires both consistency and contiguity. In order to be connected to the existing structure of knowledge a new phenomena must **fit.** That is it must be consistent, not contradict any portion of the existing pattern. And to be connected it must also be linked or **joined**. That is there must be some form of contiguity. But the combination of these two criteria, consistency and contiguity, severely restrict what we admit to the formulation of what we consider to be reality.

Is it necessary to retain both of these criteria?
To abandon consistency would lead to an Escher-like world filled with contradictory loops.
To abandon contiguity would lead to a Mandelbrot-like world filled with fractal gaps.
It appears that the experience of the 20th century has lead us to the Mandelbrot choice. We have already abandoned contiguity. But we have yet to follow up on the implications of discarding contiguity.

In abandoning spatial contiguity, we also abandon temporal continuity. This forces the abandonment of causality. Without continuity in the sequence of events the notions of cause and effect are lost. While the ingredients of the cosmos are not necessarily temporally or spatially linked, what we call reality is a selected pattern composed from that portion which is temporally and spatially linked.

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NOTE33S.WPD

November 15, 2004

ONTOLOGY 101

CONTIGUITY AND CONTINUITY

[REF: BEXISTS.WP6, 1998#28; NOTE17S.WPD, 2004#65]

We live in a "solid state" reality. Our perceptions of the world are that it is contiguous and continuous like solid state matter, while "real reality" may be more akin to a liquid or to a gas having occasional contiguities and broken continuities. But our perceptions and experience have convinced us that contiguity and continuity are the "cement" of reality. (And derivative of our percepts of contiguity and continuity are our concepts of causality and consistency.) But against centuries of sensory evidence by billions of humans, the results of certain experiments in the 20th Century have indicated that we may have had it wrong.

General Relativity tells us that space and time exist only in the presence of matter. The curvature of space and the clock rate of time are functions of the local density of matter. The inference of this is that space and time are not basic attributes of the cosmos, but are only properties of material objects. And since the distribution of matter in the cosmos is not continuous and contiguous, it follows that neither space nor time is contiguous or continuous. But this view not only contradicts common sense, it violates earlier scientific dogma. Newton held that space and time were "absolutes"; they were the essential infrastructure needed to give location to all objects and events. While this traditional view has been superceded, it still permeates our thinking because it fits everyday experience. How can we all be so wrong?

Observations support Bell's quantum mechanical predictions of non-locality. No longer is an object either here or there, it can be both here and there. While this has been observed space-wise, it has yet to be observed time-wise, but if true, an object could exist both now and then. If true, Avatars, Brigadoons, Camelots, Once and Future Kings, would no longer be fantasies, but plausible possibilities. The basic connections between entities, and even within an entity, are not spatial contiguity and temporal continuity, but invisible connections of a non-material nature. Without contiguity, who is my neighbor? Without continuity, who are my colleagues? Is it a synchronicity that the internet has come along at just this time to give us new answers to these questions as the old definitions based on contiguity and continuity break down?

With perspicuity beyond contiguity and continuity, the old cliche of connecting the dots has to be upgraded. There has always been some sort of a "Newtonian" table to hold the dots. But now the table exists only in the immediate vicinity of each dot. What does this do to our logical infrastructure? How do we upgrade our logic and thinking to fit spatial and temporal non-locality? It appears that our traditional rational processes are too limited, but Gödel has already demonstrated this to be so.

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CONTIGSUM

3) Our modes of processing and organizing experience have projected a contiguity and a continuity onto the world that may be illusory. The result is a *monoveritas* world view that the world is one self-consistent coherent whole. For example, space and time may not be contiguous or continuous, but contiguity and continuity are imposed on them in order to unify and simplify our experience of reality. Or space and time may have no existence except as human mental stage settings constructed in order to fabricate a reality consistent with our modes of perception and thinking.

Or vice versa our modes derive from the setting

CODE1[ORX] CODE2[
2BSORT.ASK
CONTIGNB.WPD August 12, 2005

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 be 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, 20005

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. Or symmetry

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.

Birdflock.wpd June 18, 2010

To watch the uncanny synchronization of a starling flock in flight is to wonder if the birds aren't actually a single entity, governed by something beyond the usual rules of biology. New research suggests that's true.

1. Mathematical analysis of flock dynamics show how each starling's movement is influenced by every other starling, and vice versa. It doesn't matter how large a flock is, or if two birds are on opposite sides. It's as if every individual is connected to the same network.

That phenomenon is known as scale-free correlation, and transcends biology. The closest fit to equations describing starling flock patterns come from the literature of "criticality," of crystal formation and avalanches — systems poised on the brink, capable of near-instantaneous transformation.

" "being critical is a way for the system to be always ready to optimally respond to an external perturbation, such as predator attack," wrote researchers led by University of Rome theoretical physicist Giorgio Parisi in a June 14

Proceedings of the National Academy of Sciences paper.

Parisi's team recorded starling flocks on the outskirts of Rome. Some had just over 100 birds, and others more than 4,000. Regardless of size, the correlations of a bird's orientation and velocity with the other birds' orientation and velocity didn't vary. If any one bird turned and changed speed, so would all the others.

In particle physics, synchronized orientation is found in systems with "low noise," in which signals are transmitted without degrading. But low noise isn't enough to produce synchronized speeds, which are found in critical systems. The researchers give the example of ferromagnetism, where particles in a magnet exhibit perfect interconnection at a precise, "critical" temperature.

"More analysis is necessary to prove this definitively, but our results suggest" that starling flocks are a critical system, said study co-author Irene Giardina, also a University of Rome physicist.

According to the researchers, the "most surprising and exotic feature" of the flocks was their near-instantaneous signal-processing speed. "How starlings achieve such a strong correlation remains a mystery to us,"

Geome - $\frac{L}{T}$ instant

cf Gus Stromberg
stellar interferometer
and Non Locality

Four realities

This is a metaphysical exploration of four domains of reality.
The first domain is the domain of matter and energy the physical domain called P. SPACE
The second domain is a domain of information and number called H. Space
the third domain is the domain of life and choice called L. Space
The fourth domain is the Parmenides domain of changelessness E. Space

Physical Scientists
Mathematicians
Physicians, Biologists
Mystics, Shamans

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for basic dyads:
continuous/discreet

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.]

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When we can realize that we are one in certain sets, and live eternally in other sets.

7. 11-2010

FRONTIERS OF REALITY

SELECT01.WPD MARCH 17, 2001; JULY 10, 2001

SELECTIONISM

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.

KNOWLEDGE AND UNDERSTANDING

The schema is the bottle
Experiences are the wine
Understanding is the taste

familiarity

Knowledge	Understanding
Derives from communication (a special limited kind of experience) Is inculcated and truncated by verbal and symbolic communication	Derives from direct experience and deep involvement May be symbolized usually in ritual
Head centered	Heart centered
Involves memory and recollection and the creation of a code book	Involves recognition and an indigenous "code book" Where is this code book? In the collective unconscious? In past experience? Outside of time?
Usually requires repetition to gain significance.	May involve only a single occurrence.
Organization of Knowledge Requires an epistemology First, the creation of a schema or matrix for organizing inputs, then the proper placing of the inputs.	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]

theott2.wp6 **April 5, 1995**

1996#44

EXPLCREA.WP6 December 9, 1993 rev: June 18, 1996

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. That is what generalization is about

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). Oftimes 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 Eisley comes to mind. But delving into uniqueness in the manner of Eisley 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.

ASKETCH1.WPD February 24, 2000

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

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-existeness, 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, _, _, 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.

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. They call this "feng shui" [wind, water]. We have no word for the opposite, the creation of form by force. We might well call it "shui feng"

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.

REPACK1.WP6 September 11,1997

RE-PACKAGING

The **cultural** business of the 21st Century will be de-packaging and re-packaging, and the **cognitive** business will be de-entifying and re-entifying. By this is meant that, assuming the elements or modules of experience have been adequately validated, the traditional groupings or manner of linking these modules, is very much open to question and revision. An example from astronomy: The ancients noted certain patterns or arrangements of the stars in the sky. They grouped stars which were in proximity on the sky together into packages called constellations and gave them labels such as, Aries, Orion, the Pleiades, etc. These groupings were endowed with certain astrological attributes and felt to possess physical and metaphysical reality. Over time it was found that apparent proximity was a poor clue to the way stars were actually grouped. Many groupings on the sky were seen to be illusory when the distances to the various stars had been determined. Some groupings, however, such as the Pleiades were real, being clusters of stars at the same distance, with the same motions, and of the same age. Other real clusters were found that consisted of stars that were not in close proximity in the sky, but had other physical parameters in common. It was found that to check our perceptions regarding the reality of an entity, more than one parameter had to indicate grouping. Aside from astronomy, there are many examples of our assuming a package of modules or events is a real entity when in fact it is only a 'constellation'. It is important that we escape these illusions, but of equal, if not greater importance, is detecting entities that exist but have so far been overlooked because of the way we customarily do our packaging.

In the 20th Century we have been treated to a deluge of ad hoc packagings. In war time the enemy is packaged with every real and projected evil. The advertising industry is continually packaging various products with success and happiness. Smoking, for example, has been packaged with sophistication and glamour, whereas its real package is with heart and lung disease. Certain ethnic groups have been packaged with certain proclivities, the Scotts with thriftiness, the Germans with methodicalness. Some societies suffer with packages that other societies do not have. The Chinese, for example, are struggling with what should be packaged with socialism. Dong Fureng, top economic advisor to the Communist Party, in order to facilitate privatization and modification to a market economy, insists "Socialism means seeking social equality, not that the state has to keep a majority stake in every industry". But perhaps the most difficult re-packaging facing those who would re-entify lies in the structure of language itself.

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.

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?

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.

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 an epistemology 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.

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-#), 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-# . 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 ?)

The levels of ontological models are thus:

Single faceted, monistic
Multi- fixed, isolated facets
Multi- fluid facets
Amorphous

FOUR ONTOLOGICAL DYADS

1. **Stapp's rocks and thoughts**

"Nature appears to be composed of two completely different kinds of things: rocklike things and idealike things. The first is epitomized by an enduring rock, the second by a fleeting thought A rock can be experienced by many of us together, while a thought seems to belong to one of us alone."

H.P.Stapp Mind Matter and Quantum Mechanics

2. **Kalu Rinpoche's wake state and dream state**

If reality is to be decided on the basis of clarity and intensity, then both states are real. [If Chuang Tzu's criteria of continuity is used, then the wake state is the real state.]

3. **Plato's archetype and manifestation**

All forms, processes, and 'laws of nature' are archetypes, i.e. patterns which can be manifested in space-time in specific, but similar instances. The archetypes exist in their own world, their manifestations occur here and there, now and then in this world. Myths are stories descriptive of the archetypes.

4. **Science's information and matter/energy**

Matter has been shown to be a form of

energy. Whether pure information can exist independent of an incarnation in matter/energy is an open question. Particle physics has gone deeper into categorizations with its fermions, bosons, baryons, leptons, hadrons,etc. suggestive of different ontologies.

THREE KINDS OF EXISTENCE

Buddhists tell the story of a sage who wished to demonstrate to the king that all is emptiness. The sage asked that a chariot be brought in. He asked where is the chariot. The king pointed to it and began to wonder about the sanity of the sage. The sage then had the wheels removed. Where is the chariot? The king pointed to the remaining chariot. The sage then had the pull shaft removed, then the front, the sides, the floor, each time asking where is the chariot. As the chariot began to disappear, the king began to get the point. Where indeed was the chariot? There was no such thing as the chariot, for it could not be found in any of its parts as it was dissected. [This story is a good one for reductionists to ponder. The essence of reality will never be found in taking things apart.]

No matter where they looked they could not find the chariot. But still the chariot as a whole existed. If there is only the material realm, then the chariot had no quintessence as the sage demonstrated. Therefore if the chariot exists it must exist as an archetype. The chariot brought in before the king was a specific manifestation of this archetype. Here Plato seems to have deeper insight than the Buddhists. The sage's demonstration of emptiness is superficial. [Nonetheless the Buddhist idea of emptiness is correct, but this story is not a valid demonstration of the fact.]

The chariot will exist so long as one exists anywhere, even if a particular one of its manifestations is shredded. It exists as an idea, in memory, in drawings, in imagination, it exists as an archetype.

This brings us to the question, must there be at least one manifestation of an archetype for the archetype to exist? Is it possible for an unincarnated archetype to exist? [This is the same question that applies to information--must information be incarnated in matter/energy to exist or is there such a thing as 'pure information?] A slightly different formulation of the question is: Is one level existence possible? Can something exist only as an archetype or only as a thing? Next, since we know of the existence of lots of things, but nothing of the existence of their archetypes, does the creation of a

thing automatically bring its archetype into existence?
We are led with Pythagoras to the conclusion that one thing does not and cannot exist. Either it exists in two level form as thing and archetype or in one level form through multiplicity and repeatability. In order for a thing to exist in the material world either a material prototype (one or more) must exist or an archetype in the informational world must exist (two level existence).. The two or more being the essential feature, two levels or two objects.

Here we face the distinction between death and extinction. Death and extinction are two kinds of non-existence. (apophasis) If the multiplicity ontology is correct, then when the number of existing members of a species drops below two, the species ceases to exist. [The number two not only from mating, but from Pythagoras.] Humanity will exist so long as two manifestations exist.

It may be that there exists an asymmetry in the two-level ontology. An archetype can exist even though there are no manifestations. This would say that creating a thing does not create its archetype, but that the existence of an archetype will result in the manifestation of the thing. We have an interesting example that this might be true. All manifestations of small pox had been obliterated, yet the process of evolution has appeared to bring it back into existence. This perhaps because the archetype still existed. If this be so, then for extinction to really occur the archetype must be destroyed.

So far we have considered two ontologies: 1) The two-level archetype-manifestation model with its sub categories a) both archetype and manifestation must exist and b) only the archetype need exist. 2) The one-level multiplicity-repeatability model in which at least two material examples must exist. But there is a third kind of existence. The kind pointed to by the Taoist Ch'ang Sheng (Dictionary of Mysticism p33) see 1995-#11.
"Such as Heaven and Earth have everlasting existence because of
their 'not existing for themselves'"
This is suchness, SAT, ding an sich, thing in itself. The primary oneness that does not exist as either things or archetypes, the monadic existence beyond Pythagoras, the meta existence that we sometimes call GOD.

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 Aksobya 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.

CATEGORY CRISIS
and the
CROSS DIALECTIC

An identity crisis is inability to select a category in which to place oneself. A category crisis is that no category exists that fits the thing to be identified. Existing categories do not fit do not work. These crises are related to the two epistemological levels of framework construction and placing items properly in the framework. An identity crisis arises with difficulty in finding the proper place in an existing framework, a category crises arises when the framework itself is defective, no longer supplying proper places for all items. A category crisis may also arise when two categories are split is split in two leading two a new alignment. The crisis arises over whether the old or the new categories are more important. This latter situation is here termed the **cross dialectic.**

NOTES ON THE CROSS DIALECTIC:

Stability and preservation of the status quo depend on maintaining Aristotelian dyads. A structure becomes stabilized around dyads, characteristics and their opposites, in groups and out groups, us and them. Aristotelian two valued logic leads implicitly to adversarial relations which allow energy to stabilize in a dyadic configuration. An adversary, enemy, other, is essential to survival. However, such configurations rapidly become unstable and breakdown whenever a second dyad intervenes that divides both sides of the original dyad. This creates four groups and removes the situation from Aristotelian dyadism. Instead of one 'us against them' balance, there are now three struggles: the original 'us against them', struggle along the lines defined by the second dyad, and struggle over which of the two dyads is to be the more important. The introduction of the second dyad has produced a category crisis.

EXAMPLES OF THE CROSS DIALECTIC:

Luther/the Papacy//Copernicus/Ptolemy
These two dyads resulted in the success of the reformation and the acceptance of the Copernican Theory.

The Civil War in the United States
Slavery/Abolition//Union/Secession
Lincoln's genius was in converting the two dyads into one equating union with abolition and secession with slavery.

World War I
Great Britain/Germany//Colonialism/Independence
World War I brought the colonial dyad to the front, and within 30 years colonialism was dead. In World War II, Indians fought with both Britain and Japan.

The Cold War
USA/USSR//cultural independence
When the issue of national independence began to override the communism/capitalism dyad, the USSR broke down and the cold war came to an end. The issues are still unresolved. For a spell Lithuania vs Russia was the dominant issue, subsequently economics again became the dominant issue and Communism was restored in Lithuania.

The 1992 U.S. Election

Republicans/Democrats//Choice/Life
The second dyad split both parties, hitting the Republicans the hardest. Another dyad affecting this election was the presence of Ross Perot. The almost predictable re-election of Bush, the economy notwithstanding, was altered by the presence of these additional dyads.

An example from physics
here/there ontology//everywhere/nowhere ontology
In Quantum reality definitive location of here/not here is out, replaced by an everywhere/nowhere dyad. This has resulted in the breakdown of classical physics and its worldview.

SOME POSSIBLE FUTURE EXAMPLES:

Israel/Arab States
economic unions//cultural pluralism this is already a cross dialectic
straights/gays a second dyad here could result in the breakdown of male dominance
USA melting pot Dominant culture and language//cultural pluralism
Book of Job good, therefore rewarded --> rewarded, therefore good
The Church Today Fundamentalism/"Jung"//Sectarianism

Americans have been so well conditioned to make their evaluations and decisions on the basis of appearances that they buy snake oil (read Gulf War, for example) if the salesman is nattily dressed, uses the right cliches, the cost is well disguised, and the product is morally packaged.

With everything now being a movie set, how can one peer behind the image and see the substance? (That no one really wants to do this is one of the reasons it all works so well.) Individual shadows on the wall of Plato's cave are illusions but even knowledge that they are illusory is of little help in ascertaining the individual objects that are casting the shadows. To grasp the nature of the shadow casters, one must abandon detailed examination of each shadow and look at the overall patterns in the shadows. Ask the 'Sherlock Holmes' questions: Who benefits? What motivates?...

Image has replaced reality everywhere. Our statistics are **image statistics**, our accounting systems give **image profits** and **image costs**. Our histories are **image histories**. Nowhere are we exposed to the real costs or war, the real figures of unemployment, the hidden profits, the secret deals.

The Soviets, the Nazis, and the Maoists, have all made significant contributions to the techniques of brainwashing and the art of population manipulation. The great American contribution to manipulation is the Image. This goes back in our history to P.T.Barnum, with further developments by Madison Avenue, Hollywood and TV. There are few imports in the Image approach to manipulation, the methodology is mostly home grown. It is the American way of manipulation.

Its application to politics was certainly recognized by Abraham Lincoln, who said, "You can fool some of the people all of the time and all of the people some of the time, but you cannot fool all of the people all of the time." If we were to update Lincoln in the light of Atwater, Bush, and Casey (the ABC of manipulators), we would have to recognize their great discovery is that the few you cannot fool all the time can be rendered impotent by thoroughly ignoring them.

Mass manipulation has come a long way from the crude days of bayonets, although this technique is still practiced by those like Hussain who are too inept to apply the modern techniques. Agent provocateurs acting violently against property and police during peace marches can discredit the entire protest. And the art of denial has reached exquisite heights, "This matter is too absurd to comment on", "There has been no wrong doing (in our book)",

etc.
This has all been tremendously successful. A democracy has been stolen but the Image that the democracy is in tact and doing well has been preserved. The manipulators know the truth of the adage, "The best prison is the one you do not know that you are in".

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Reality is a consensus derived from temporal and spatial continuity. But all continuity, both temporal and spatial is illusory. Hence, to think about the universe at all we must consider its *measure.* Where by measure is meant Lebesgue measure.

Both space and time are dyadic in nature. Space is divided into extension and separation, time is divided into duration and interval ("while and until"). If these dyads are viewed with higher resolving power, the concept of density is involved. In the case of physical space, matter density, . When = 0, there is pure separation, when > 0, there is some sort of extension. Similarly with time. The Kepler-Newton law, states that time -1/2. Thus when = 0, T is infinite. Spatial separation is associated with infinite time or eternity. But when > 0, time is finite having duration and space possesses extension.

Aristotle based the idea of change on motion, in fact holding they were equivalent. (What about color change?) Assuming he is right, then all change is related to velocity, which is space/time.
But this quantity is assumed in relativity theory to be bounded. In particular linear velocities are bounded by c, the velocity of light. We conclude that 3/2 is bounded by some appropriate power of the velocity of light.

Things w Events

NOVO

COGNITIO

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 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.

A COGNITIVE MANIFESTO

The critical tasks at hand are:

To detect the limits of human perception and cognition.
To identify the distortions and biases implicit in our perceptions.
Distortions are physical and biological [hardware]
Biases are cultural and societal [software]
The psychological is both hardware and software.
To identify the distortions and biases in our modes of thinking and reasoning.
Both those that are hardware and those that are software
Both those that are self deceptive and those implanted by spin masters.
To identify the issues underlying the visible issues.
To design and create alternatives for existing structures and processes.

And

To develop procedures to implement the above.
To liberate ourselves from all dogmas
From those of our religions, cultures, and traditions
From nationalism, racism, sexism, and all us/them isms.
From fundamentalism, scientism, and selective skepticism

To allow all alternatives to be on the table.
To develop evolving criteria for significating and prioritorizing what is on the table.
To develop criteria for developing the criteria.
To alternate specific to general with general to specific.[bottom up with top down]
To periodically update, upgrade, and recycle all knowledge.
To ultimately shred knowledge when correction is not possible.
[cf bio-extinctions]

To permit Brahman
To allow for the concept of truth, but hold that whatever we know is not truth, but at best only a special case.
To seek the totality of pictures of the cosmos, not declare one to be the whole.
If absolutes are needed, let them be subjective not objective.
Let them be to commitment, to courage, and to compassion.

PSEPON.WPD APRIL 21,

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 (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

NEWTHINK.WP6

NEW THINK

CONCEPTS [META-INJUNCTIONS]	VALUES [INJUNCTIONS]
RECIPE --> COSMOS	PRACTICE GANDHIAN GLASNOST
NODE/LINK/TRAFFIC/TOPOLOGY	'FRANCHISE' ALL OPERATIONS
BOOTSTRAP/SPACE STATION	INCLUDE SUNSET CLAUSES
FACETISM	HOLD ALL BEINGS IN REVERENCE
MORPHOLOGY: ALL NOT ONE	DEVELOP DON'T DISSEMINATE
HIERARCHY: THE VERTICAL	ITERATE DON'T REPEAT
HERE/NOW VS EVERYWHERE/NOWHERE	
MINIMUM REDUNDANCY IS SET BY REPAIRABILITY NOT BY LOAD	
SELF REFERENCE	

APHORISMS

EVERYTHING IS A SPECIAL CASE

~

ITEM	TRINITIES [THE THREE JEWELS]
JAIN	RIGHT FAITH, RIGHT KNOWLEDGE, RIGHT CONDUCT Note: Jaina maps onto Cybernetics
BUDDHIST	BUDDHA, SANGYA, DHARMA
HINDU	BRAHMA (CREATOR), VISHNU (PRESERVER), MAHESA (DESTROYER)
CHRISTIAN 1.	FATHER, SON, HOLY SPIRIT
2.	GOD, THE BIBLE, THE CHURCH
3.	THE TRANSCENDANT, THE CHRIST, THE IMMANENT
ISLAMIC	ALLAH, THE PROPHET, THE QURAN
JUDEAIC	GOD, THE HOLY SCRIPTURES, THE HOUSE OF ISRAEL
CYBERNETIC	THE NORMAL, THE AMBIENT, THE MODIFIER

Trinities appear to be of three distinct types. The first type is a manifestation of the stability attribute of three-foldedness, e.g. a tripod. Examples of this from the above list are the Judaic, the

Christian 1. and 2.,
and the Islamic. The second type is a manifestation of the dynamic that
derives from the residual asymmetry of an odd number. Examples of this from
the list are the Buddhist and the Christian 3. The third type involves an
element on one level arbitrating balance and imbalance between two elements on
a second level. Examples of this are the Jaina and the Cybernetic.

The type two trinity involves a departure and return temporal pattern.
There must be alternation between dialog and identity. God must be alternately
Transcendent and Immanent. If God is never immanent, one becomes
a hardened dogmatist. For a transcendent God is too remote to manifest and
sustain knowledge of His true nature. If God is never transcendent, one becomes
as Lucifer, believing in their own personal godheadedness, and mistaking their
own voice for that of God. In both cases contact with God is lost.

Prayer is the path to the transcendent God, it is the dialogue of speaking
and listening. Meditation is the means to become one with the immanent God.
Prayer and Meditation, Transcendence and Immanence, the Great Departure and
Return.~

ITEM NEW CONCEPTS AND TOOLS OF THOUGHT EFFECTING WORLDVIEW CHANGE

NEW CONCEPTS	TOOLS OF THOUGHT
GAME THEORY	NON-ZERO SUM GAME
BOOTSTRAP COGNITIVE STRUCTURES	NO PRIMARIES
SELF REFERENCE ITERATION/REPETITION	
HIERARCHY	MACROS
NODE/LINK/TRAFFIC/TOPOLOGY ENTITY/RELATIONSHIP	
ALGORITHMS	PROCESS/PRODUCT
HOLOGRAMS	EVERYTHING IS CONNECTED
CRITICAL MASS	100th MONKEY

ENERGY, ENTROPY, INFORMATION
MORPHOLOGY/GENERALIZATION
SECOND LAW
MATRICES,
TREES, NETWORKS
QUANTUM REALITY
EXISTENCE/NON-
EXISTENCE
LIMITS, e.g. c
GODEL'S THEOREM
TIME
PARADOX
SPACE
SIGNIFICATION
ADDRESS/CONTENT
SYSTEMS ALLOMETRY
HARDWARE/SOFTWARE
INSTINCT/LEARNING~

ITEM

OLD THINK

CURRENT IDEAS LEADING TO ILLUSION, SELF-DECEPTION, HYPOCRACY, DISEASE

COLLECTIVE AND PERSONAL

NOT INVENTED HERE
LABELISM
ONE SET OF RULES FOR ME, ONE FOR YOU
MASTER RACE ELITISM
FINALISTIC LOGIC
NEED FOR AN ENEMY
IOD FEEDBACK
ACTION AT A DISTANCE
MIXING LEVELS
JUSTIFICATION FOR NON-ACCOUNTABILITY
ALL OR NOTHING THINKING
OVER GENERALIZATION
DENIAL, MENTAL FILTERS
MAGNIFICATION/MINIMIZATION~

Following Orders

A MOTIVATIONAL SCALA

People are motivated to participate in or avoid certain behavior patterns according as to the relative pressures of the factors in the following scala:

LEVEL	FACTORS
BIOLOGICAL	PAIN / PLEASURE
PSYCHOLOGICAL	INTERESTING / UNINTERESTING
SOCIETAL	IMPORTANT / UNIMPORTANT
PLANETARY	VALID / INVALID
COSMIC	TRUE / FALSE

- On the biological level there is freedom to choose between pain or pleasure, but without being overruled by excessive pressure from one of the higher levels, people will invariably seek to avoid pain. In fact the avoidance of pain is usually regarded as a safe guide in selecting a course of action.
- On the next two levels, the psychological and societal, there is not only choice but also relative impunity of choice. We are each free to choose what we find to be interesting, but we may not be so sure that we were free in determining what turned out to be interesting to us in the first place. On the societal level cultures determine what is important by consensus. However, there are usually penalties associated with an individual's ignoring the society's selection of what is to be taken as important. That is, there are penalties incurred when an individual opts for behavior that goes against the society's values. For whenever there is choice values are involved, and if an individual or society has choices they will construct a scala of values to guide their choices. An individual is fortunate and likely to be successful if it turns out his/her personal interests and society's views of what is important coincide.
- The fourth level, what is valid or invalid is trams-cultural, not subject to choice. As societal is contextual to individual, planetary or global is contextual to societal, and ultimately context overrules content in both cases. There may be, however, choice in selecting to adopt an invalid procedure instead of a valid one, but the whistle is immediately blown and sooner or later the boom is lowered.
- The above four levels are each bounded in space and time. The fifth level, true/false, transcends all limits of space and time. It is that which is

valid in all places at all times. Thus truth, in this sense, is unknowable. It can only be approached as larger and larger realms of space and time are experienced. And Truth with capital T lies beyond space and time. It is absolute, eternal, and ubiquitous. Whether Truth exists, we do not know.

Some ontological alternatives:
The foregoing scala is organized in accordance with conventional western ontology, what is valid is not subject to choice. But it could be that the universe is multi-faceted and we select which facet to exist in. In such a case what is valid could be said to be subject to choice. Perhaps only to one-time choice. Or a yet different ontology would say perhaps to continuous choice, i.e. we create reality at every moment of time.

Some behavioral alternatives:
The foregoing scala is predicated on individual or collective motivations and initiatives. But there is also a scala based on responses. Behavior in response to pulls or calls. Behavior forcing itself upon us. There is also what lies behind pain, interest, importance and validity. Such matters as ego, curiosity , intuition, hunch, values, and recognition lurk behind the scala.

Some questions:
_Are values personal or societal? Are Virtues cultural or global (valid)?
_Is the created or invented cultural and the discovered global (valid)?

COMEAREC.WP6 March 20, 1995

COMPLEMENTARITY-MEASUREMENT-RECOGNITION

COMPLEMANTARITY: held basic by Kafatos and Nadeau The Conscious Universe

Complementarity is a special (two-fold) case of facetism. What we view of the universe depends on the experiment we perform, the question we ask, the measurements we make. The results are neither consistent nor inconsistent. Facetism transcends consistency.

MEASUREMENT: held basic by Albert Z. David Quantum Mechanics and Experience

Measurement collapses the wave function. Measurement truncates potentiality, asking a question truncates potentiality, all actualization truncates potentiality. Is all actualization related to the collapse of a wave function? Measurement destroys possibilities (K&N p43) Science is based on measurement therefore it deals with a partially destroyed world. Science truncates the world. Is it possible to know without truncation or does knowledge contain the seed of its own limitation, creating limits to the world it can know. (cf. the tree of knowledge and Godel's Theorem)

RECOGNITION: Recognition Physics J.A.Wheeler Lost Paradigms--Casti p419

Recognition implies non-localism, not only non-localism in spacetime but a more general non-localism. It implies a basic linkage, or even identity, between our thought processes and event occurrence in the universe. Recognition's mechanisms may lie within the spacetime world or beyond it or both. Wheeler asks how do space, time and dimension arise both as concept and as structure of reality. Concept may be the constructor of reality.

LOSSARCH.WP6 January 19, 1995

THE ARCHETYPE OF LOSS AND THE ARCHETYPE OF TRANSFORMATION

Two important archetypes in the dynamics of change are the one that is triggered with a loss, such as death, and the one that is triggered by confrontation with a dead end, such as woundedness. An archetype is a deterministic pattern in time that takes us from state one to state two. While the onset of an archetype may result from circumstances beyond control, its initiation may be intentional. In the event of the launching of any sort of intentional change, before launch it is most important to put whatever is to be preserved into an "ark". Whatever is sacred must not be put at jeopardy nor left to the whims of chance.

THE ARCHETYPE OF LOSS

In the event of a loss, especially through death, the world has shifted. A stable system, consisting of physical and psychic components has been truncated. Such a decapitated system is unstable and cannot function until it can restore working order either through internal readjustments or union with another system. The loss of a leg, for example, requires both a physical and psychological readjustment before the system is functional. The process of readjustment is carried by the archetype of loss which has the following stages:

SHOCK
DENIAL
ANGER
DEPRESSION
ACCEPTANCE

The onset of the loss event causes a trauma which, dependent on its suddenness, may create a state of shock. A death spread over days or weeks allows preparation and avoidance of shock, but sudden death or loss does not.

Following the loss is a struggle not to accept its reality. A period of oscillation between facing the facts and "it just didn't happen", a set of ifs, and turning the clock back. This is an exhausting period which results in protest.

The next is OK so it happened, but why, it is not fair, it is outrageous and intolerable. There is a pouring out of anger

on anyone or thing that can be blamed, the surgeon, the driver, the system, and most of all on God. There are thoughts of vengeance when possible, thoughts of retribution. Some people never transcend this stage.

Following anger, comes a shifting of blame from others to oneself. The result is depression. Certainly the loss has diminished us and we feel diminished, we lose self esteem, we question our competence, what have I done wrong, then we feel immature for not being able to handle the situation. we begin to question everything. And at this point the mood can turn suicidal. There is no heart in anything, everything is purposeless, meaningless, why go on. Finally it settles down into a deep sadness.

From the sadness gradually comes healing, the pain slowly goes away and some of the lost energy is recovered. Things that should have long ago been put in the ark are at last put there. The memories evolve from sadness to sweetness, and it is realized that something still exists that is to be cherished. Everything has not been lost, the deepest treasure is still intact and now at last it is visible. All the surface stuff has distracted us all along. We are not sure whether our healing is from our acceptance of what has happened or from the traversing of the path along which the archetype has taken us.

SOME NOTES

ON ENERGY

The physical system has its psychical counterpart related through sensory exchanges. Both are configurations of stored and flowing energy. A truncation requires readjustment of the energy patterns in both systems. The archetype is a symptomatic description of this process of readjustment.

But there is also energy/information stored in the relationship, in the link. This energy/information is both static or stored and flowing. Over time the e/i in a relationship can become very rich, like a savings account of large magnitude. When the link is broken, the e/i begins to flow. For one party it can be like a spending spree, very euphoric [the euphoria comes both from the e/i released from the broken link and the flow of e/i into the new configuration.] For the other party the flow is draining the energy from the link, lost and diminished. There is no access to the e/i redeposited in the new bank account. In the case of death when we are drained does this mean that the e/i has been available to the departed one (cf ancient burial of e/i in tombs with kings, etc.) and if we have not lost significant e/i does this mean that there is little for the departed one?

ON MEMORY

Whenever there is a loss every loss in the organism's memory is again brought into play. From the teddybear lost as a child, the purloined highschool sweetheart, the house that burned, the job that was terminated, the death of a parent... In general whenever any archetype is encountered, all of the previous specific instances of that archetype are brought into play...

Grief is an active ritual which mitigates the impact of the archetype. Letting go completely, letting the energy flow hastens the construction of a new configuration. Acceptance, readjustment comes more quickly.

The coin of loss has two sides, one of loss as above and the other of liberation which is the second archetype

THE ARCHETYPE OF LIBERATION (TRANSFORMATION)

Whereas the archetype of loss is predicated on a truncation of the system, the archetype of liberation is predicated on union with another system. Both truncation and union require readjustments in the system and this means that certain stages in the respective archetypes are the same. In general unions are euphoric while separations are depressing. The basis for union is a deep seated yearning for "home", derived from the cosmic flow of energy toward its source. Although it is oftimes reached stepwise through other unions, ultimately all yearning is for the union of self and God, for intimacy with God.

The stages in the liberation archetype are:

DYADS01.WPD January 31, 1999

SOME BASIC DYADS

I. EXISTENCE//NON-EXISTENCE; REALITY//NOTHINGNESS

II. KNOWN//UNKNOWN; AWARE//UNAWARE; PHENOMENA//NOUMENA
[Note: awareness is not the same as consciousness, which is not a dyad]

III. PHENOMENON//REPRESENTATION; PHENOTYPE//GENOTYPE;
MANIFESTATION//ARCHETYPE; MATERIAL//IMMATERIAL

IV. FIGURE//GROUND; CREATION//CREATOR; WORLD//BRAHMAN;
THE CHANGING//THE FIXED

V. SUBJECT//OBJECT; I//THOU; OBSERVER//OBSERVED

VI. LOCAL//GLOBAL; PARTICLE//WAVE; FINITE//INFINITE; NOW//ETERNAL;
MORTAL//IMMORTAL

VII. PART//WHOLE; INDIVIDUAL//COLLECTIVE

VIII. BEING//DOING; ESSENCE//BEHAVIOR; THING//PROCESS; NOUN//VERB

IX. EXPLORE//CREATE; THE FIXED//THE ALTERABLE

X. SEPARATION//EXTENSION; INTERVAL//DURATION; UNTIL//DURING

XI. DEPENDENT//INDEPENDENT; CONNECTED//DISCONNECTED
DEPARTURE//RETURN

XII. PLANNED//SPONTANEOUS; INTENTION//SERENDIPITY; ACTIVE//PASSIVE;
DISPENSING//RECEIVING

BEYOND THE DYADIC IS THE QUADRIC:

SCHRODINGER'S CAT IS NOT DYADIC.
THE CAT MAY BE DEAD OR ALIVE,
BOTH DEAD AND ALIVE,
NEITHER DEAD NOR ALIVE