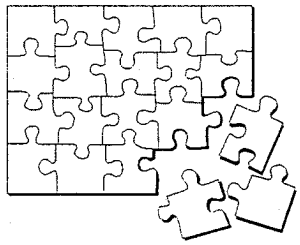
SCRAPS

1999

PUZPIECE.WPD January 7, 1999



PIECES OF THE PUZZLE

- MODES OF CHANGE

  Determinism: No branch points or choices, or if there be choice, then no freedom to choose. ~fate, predestination, or externally guided selection

  Teleological: At every branch point or choice the selection is made to decrease the distance from a pre-decided goal. ~purposeful preferences

  Random: Selection at every branch point or choice is free of criteria, with each choice having equal probability of selection.

  Entelechy: Selection is made in accord with built in code or algorithms to increase and effect realization of pre-designed potential.

  Meta-entelechy: Selection in accord with built in code that increases both realization and potential with every selection.

  Anarchy: Change resulting from the interplay of competitive or interacting systems where selections are imposed by the gestalt..

  Mutation: Change resulting from inputs coming from completely outside the system. ~innovation other than permutation

- GUIDES OF CHANGE

  Internal built in codes and algorithms, inhibitors and enablers. genes

  Specified goals and plans.

  Risk analyses. ~trade-offs

  Interactions between co-existing systems.~competition

  Global injunctions. Do's and don'ts. ~morality, ethics

  Chance. ~fortune, luck, serendipity, synchronicity

  External management. ~God, fate

  Minimization and maximization principles. ~physical laws ~ diversity, complexity

  Innovation, discovery and invention.

- CREATION OF POTENTIAL

  Innovations, alternatives, options, choices

  Liberation, freedom

  Knowledge

  Diversity

add
The process of generalization

THE ANALEMMA

One of the frustrations in language is that we often have only one word for several different things. In English we have the word "day", but it has four meanings. The first meaning of day is the time of light from early dawn to evening twilight, this as complementary to night the time of darkness from late twilight until early dawn. A second meaning of day is the time of rotation of the earth with respect to the sun, that is, the time it takes for the sun to return to the same position in the sky. For example, the time between meridian passages of the sun. A third meaning of day is the sidereal day or time between meridian passage of fixed stars. This might be called the true or absolute period of rotation of the earth. In the book of Genesis in the Bible, there is a fourth meaning given to the English word, day, an epochal period of time. Let us distinguish these four days by calling the first daylight, the second day, the third the rotation time, and the fourth creation epoch.

A year is about 365 Days. In the northern hemisphere in the summer daylight gets longer and in the winter daylight gets shorter. But now a surprise! As daylight shortens, the day lengthens. In fact the shortest daylight occurs at the winter solstice about December 22nd, while the longest day of the year is December 24th - 25th.

How come? We, all know that the sun moves south in autumn making the daylight shorter (in the northern hemisphere), and moves north in spring making the daylight longer. But how can the length of the day change? To answer that, let us suppose that the sun not only moves north and south during the year, but also moves east and west. What effect would that have? Let us take our local meridian as a pointer. Now if there were no east-west motion of the sun then it would take exactly 24 clock hours for the sun to return to the meridian. (And the day would be the same as the rotation period.) But if the sun is moving east then in 24 hours our meridian would have caught up with where the sun was yesterday, but the sun has moved east so it is going to take a little longer for the meridian to reach the sun's new position. In other words the day is longer. So if the sun is moving east it makes the days longer and if moving west it makes the days shorter. And from about November 4th until February 12th the sun does move east making the days longest when the daylight is shortest. And the motion of the sun to the east is the most rapid about the 25th of December.

Just a minute. We know the sun moves north and south because watching the sky we can see it getting lower in the south in winter and higher in summer. Now if the sun is actually moving east and west how come we never see that? Good question. We aren't aware of the east-west motion of the sun because the earth rotates in the east-west direction. The 360 degree daily motion of the sun caused by the earth's rotation completely masks the earth's orbital velocity changes which cause the solar east-west motions. So, how do we know this other motion takes place? One way is to compare clock time with sun-dial time. Clocks run at a constant rate, but the difference between the time a clock shows and the time a sun-dial shows varies throughout the year.

An even better way to see the sun's motion is to set up a camera in a fixed location, pointed to the sky in a fixed direction, and expose the same photographic plate every Day throughout a year at the same clock time every Day, (say at 9:00:00 a.m.). The trace of the sun's images on the photograph will look like a figure eight. The up and down direction of the eight representing the north and south motion of the sun and the left and right direction representing the east and west motion. This figure eight is called an "analemma" and gives the representation of the sun's total movement as viewed from earth throughout the year.

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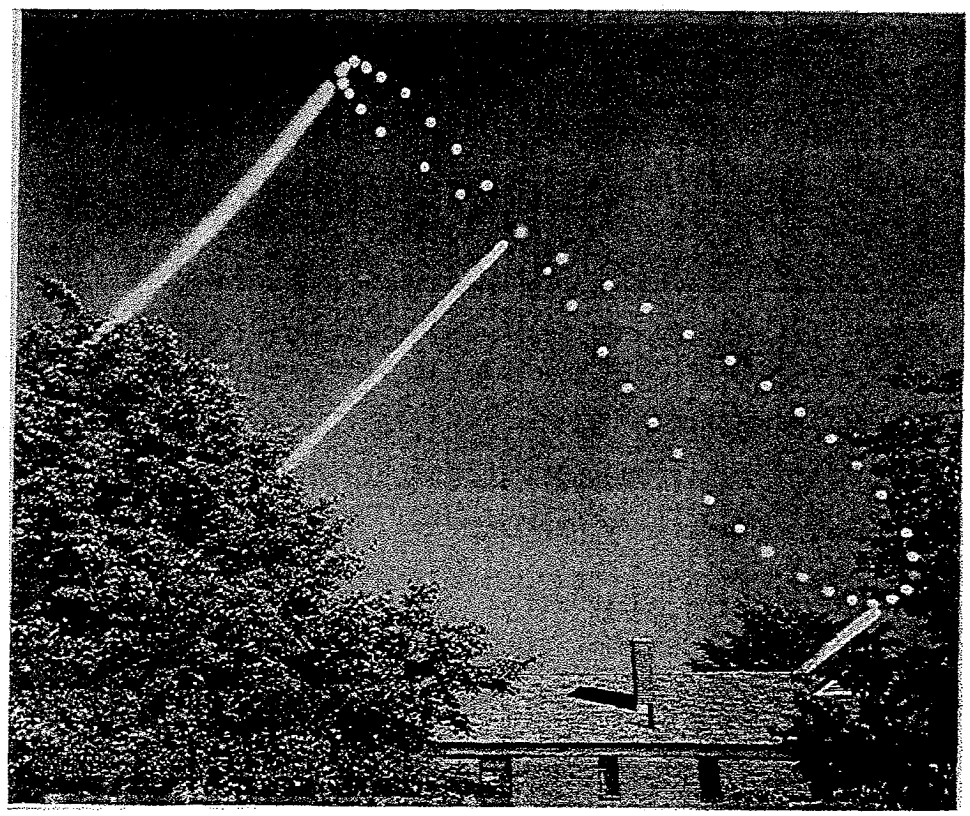

and $\frac{\text{the small loop}}{\text{the large loop}} = \frac{\text{the large loop}}{\text{the year}}$

i.e The analemma manifest Φ
the Golden Ratio
the Divine Proportion

EVOLUTN1.WPD January 10, 1999

EVOLUTION AS CYCLIC PROCESS

In the five successive extinctions of bio-history, the highest forms that evolved in each case disappeared, yet the bio-system does not return to square one. Each cycle of extinction/radiation leads to organisms of greater complexity, yet the genomes of the highest forms are not preserved. What then is preserved in the evolutionary process that is transmitted from cycle to cycle that enables evolution to reach new levels of complexity? What ingredients are enhanced at each cycle? What inhibitors are removed? Is it the power of self-organization that is enhanced? A power that allows more rapid development. Is it that greater variety exists and variety is the key to complexity? What characteristic, aside from complexity (which is not satisfactorily defined), increases from cycle to cycle? May we say that it is consciousness?

And turning to cultural evolution, what causes an extinction? What is lost and what is preserved? The great cultural extinction/radiation of c 500 B.C.E. (Jasper's Axial period) appears to have been caused, not by an asteroid, but largely by the introduction of writing. The effect of this was the liberation of the intellect from the necessity of memorization and oral transmission. The preservation of the culture and its records could be trusted to writing and human mental activity could turn from its focus on memory to focus on imagination resulting in enhancement of creativity and innovation. This has resulted in accelerated cultural change during the past 2500 years leading us now to a new cycle of extinction/radiation. The 20th century marks another axial period. We suspect that it is writing and the written record that is itself now being replaced. This time the "asteroid" of extinction is the computer. the internet Such facilitating powers as hypertext and morphing extend (or possibly replace) imagination. Hypertext allows the permuting of linkages and associations. Morphing allows the permuting of images and forms. If a world view is basically a set of mutually supportive associations and images, then instead of a single world view the computer can construct innumerable alternative sets of associations and images and create for us a smorgasbord of perspectives. The age of one solution, one answer, one ontology, one epistemology, one theology, one science, ...is ending. In the next radiant, multiple approaches and paths will emerge. The human intellect will again change focus, this time not from memory to imagination, but from imagination to evaluation. We leave the mono-world of "this is how it is" and enter the multi-world of "if this, then this". Our human task, not ascribable to computers, will be how and which world do we select?

The growth of potential will exceed that of realization
W. H. Kahn's Reality has outstripped Experience

What commonalities are perceived in all of this? The ever increase in variety seems to be one factor operating in both bio and cultural evolution. And variety provides the building blocks both for complexity and for more variety. And possibly an on going increase in consciousness, an entity that we may not view as "a thing out there" because we ourselves are part of it and it a part of us.

DYADS01.WPD January 31, 1999

SOME BASIC DYADS

I. EXISTENCE//NON-EXISTENCE; REALITY//NOTHINGNESS
SOMETHING // NOTHING

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
synchronicity ? ≠ serendipity ?

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

Additional Basic Dyads

Top Down // Bottom Up

Same // Different

Contingency // Necessity

4 –

Quadric Diagram: 2 dyads

Proportion (which = metaphor)

GENCODE.WPD January 31, 1999

THE GENERAL GENOME

We postulate a "general genome", a coded representation defining anything that exists. A bio genome is a subset of a general genome which applies to only to life forms. This "general genome" or [gg] contains four major components:

1) The "E-set" This portion of the [gg] contains the "genes", or enes as we shall call them, specifying the species of existence of the phenotype which the particular [gg] describes or encodes. All things having material existence contain identical E-set codes. Any differences in the E-set from this material existence code is conventionally termed non-existence. However, there may be innumerable species of non-existence, or rather more properly termed, alternative species of existence. Each code within the E-set specifies an alternate reality. [1]

2) The "H-set" Those enes specifying form, structure, pattern (cf Plato's archetypes)

3) The "P-set" Those enes specifying position in space-time (inc a local/global switch)

4) The "L-set" Those enes specifying the bonds, links, and filters interrelating "things" and effecting communication and interaction between things

Our first postulate implies that [gg] exists. However, this existence is a meta-existence {on the Brahman or SAT level } not on the level covered by the E-set. Whereas we can locate the bio genome in chromosomes, there is no known physical location for the non-bio portions of the [gg].

With regard to the specific contents of the E,H,P,L sub-sets, we ask, must information be inscribed in a material matrix such as writing, sound, memory, electronic, magnetic, ... or may it exist independently in some immaterial form? (Here we recall the Plato's archetypes) Indeed what is the relation between information and physical forms of energy? [negentropy?]

Of special interest in the E-set is an ene that would specify whether an object is local or global. In P-Space (position space) an ene set to global would abolish space-time. For there to be particles or even matter P-Space must be set to local. In H-Space (form or pattern space) an ene set to global would abolish all forms, shapes, and patterns. Thus H-Space set to global would take on the attributes of the Sunyata– an empty container of all possible forms. For there to be diversity and uniqueness H-Space must be set to local.

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[1] We may, for illustration purposes, say that the E-set consists of six enes each of which may assume two values, 0 and 1. Say the code corresponding to our familiar physical reality is given by 101011. Any other code, such as 110001,... specifies a different reality or species of existence. In our present Aristotelean dichotomic view all codes other than 101011 are lumped together into a single class termed non-existence. However, in this example there would be 64 realities or species of existence. (Or we could compromise and say, one reality and 63 species of non-existence.)

FAMPRSNS.WPD February 2, 1999

NAME DROPPING: FAMOUS PERSONS I HAVE MET

As part of my story, The Last Piscean, I feel I should define my times by mentioning some contemporaries whom I saw, met, and in some cases held conversations with. In many incidents the meeting was fortuitous.

1923: My first political memory was at age five going up to Cheyenne with Dad and Mother and boarding President Harding's funeral train, seeing his coffin in a special car.

In 1927 after his historic flight, Lindbergh toured the U.S. When he came to Denver we went to the airport and saw him arrive and afterward saw him up close as he drove by in the back of an open car.

It was many years later that I saw my next famous person. In 1944 Robert Millikan, then President of Caltech, unexpectedly showed up for my oral exam and asked me several questions regarding the history of physics. I remember his asking, "Who were the great lights in optics?"

1941-1953: I met frequently with many of the then important scientists at Caltech and Mt. Wilson, including Adams, Baade, Minkowski, Bowen, Merrill, Nicholson, Richardson, Bateman, Epstein, and especially had close contacts with Zwicky and Hubble. [See scrap on first meeting with Hubble]

In 1957 I joined the RAND CORPORATION and met several of those who visited. These included Norman Thomas, Henry Kissinger, and many air force generals. While at RAND I had occasion to travel frequently. On these trips occasions put me within a few feet of de Gaulle in Paris, Truman in Washington, and Kruschev in New Delhi. I was commended by Nehru in New Delhi for my assistance with one of India's science programs. I also had an extended conversation with Lyndon Johnson when he was still a senator, and an informal conversation with Chief Justice Earl Warren and with presidential candidate Adali Stevenson. I also had a brief chat with Richard Nixon in the LA airport after his losing his run for governor of California. . And as for movie celebrities, I flew to London on the same plane as Rex Harrison, and once watched Gregory Peck pick up kids from a Waldorf School.

I have had conversations and professional exchanges with Margaret Meade, Gregory Bateson, Norbert Wiener, Robert Hutchins, John Wheeler, and Fritz Schumacher. Several discussions with Richard Feynman, Carl Sagan, and Muktananda.. I have even had the privilege of being at a meeting which was attended by the Dalai Lama.

Those who impressed me most favorably in this list, in the sense of being outstanding human beings, from their immediate presence not from their public image, were Norman Thomas, Harry Truman, Adlai Stevenson, and Fritz Schumacher, and of course the Dalai Lama in a class by himself. Those who impressed me unfavorably were Kruschev, Kissinger, Nixon, and most unfavorably of all, Lyndon Johnson. The rest, distributed in between, were all impressive persons.

but in none did I detect charism

Pentagon Papers

In Time's book of the 100 most influential people of the 20th century. I have talked with six:

1911 Frank Lloyd Wright
1925 Margaret Mead
1929 Edwin Hubble
1954 Earl Warren
1968 Lyndon Johnson
1974 Richard Nixon

I've seen Truman
Dalai Lama

Donna's report on her viewing of Pope John XXIII
He had charism

Re-write with introduction re. Joe Ellis
and "resumé padding"

PAPYRUS.WPD February 4, 1999

ON MATHEMATICS

The famous Rhind Papyrus, a mathematical document written somewhere around 1650 B.C.E. by a priest-scribe called Ahmes, begins by advertizing itself as "a complete and thorough study of all things, insight into all that exists, knowledge of all secrets." This claim brings to mind the claims of present day mathematical theorists who say they are on the verge of compiling "a theory of everything". This affirms for us the observation that those familiar with mathematics have over the millennia felt that they are the ones before all others who are operating in a domain of universal validity. We might ask, what is the source of this age ~~long~~ old hubris of mathematicians about mathematics? Perhaps their sense of certainty derives not only from the fact that mathematics is the most precise and comprehensive representation of the world so far invented/discovered by humans, but also from the fact that of all knowledge mathematics has the longest shelf life. Go into any library. In these days almost every section except mathematics becomes dated and even obsolete in the course of a few decades. Mathematics alone grows without needing to be revised. After almost 4000 years Ahmes' math is still valid today (although notations have improved and shortcuts have been designed).

Mathematics may be compared to a generalized or universal genome. Whereas the genes of the DNA spirals encode the properties of living organisms, mathematics encodes the properties of all that physically exists. For example, in particle physics mathematical groups encode the structure of the standard model. The question naturally arises, if the template codes of bio-organisms are located in the chromosomes, where are the template codes of the fundamental particles located? Or put more generally, where does mathematics exist? Math seems to be of the world but not in it. [The obverse of the monk or mystic who is in the world but not of it] We here recall Plato's postulating a non-physical realm in which archetypes exist. Are the formulae of mathematics and the laws of physics to be included among the archetypes that dwell in this Platonic realm? And the key question, is this realm material or non-material? [1]

However, this lofty view of mathematics is not shared by most human beings. On the contrary it is held that mathematics is not essential or even useful for most. The great psychologist Carl Jung felt that:

> "It is an asinine prejudice that mathematics has anything to do with the training of the mind... Mathematics is not a function of intelligence or logic,. You also find a mathematical talent in individuals that are idiotic in every other respect. So I think you waste your time absolutely when you try to study mathematics.

This is a view that deserves consideration for it insinuates that there are other realms (such as Jung's realms of myth and dreams) that operate independently of any mathematical ground. Some of us are adept at tuning to the ~~set~~ precise physical domain described by mathematics and others to the open misty domain of mind and spirit. Are we dealing with two realities or with but one? And if two how do they interrelate, and why should mathematics be absent in one and present in the other ? Or if one reality, why is mathematics manifest only in a portion?

---

[1] In the case of objects possessing the attributes of life, both the genotype and the phenotype are material. In non living objects it appears that only the phenotype is material. Is this a valid and meaningful distinction?

To exist there must be ≥ 2 levels, Life exists as phenotype and genotype
Other entities exist because of matter and form
energy and information

Mathematics describes the unfuzzy part of the world.
- the part that has settled in, locked in, - the past
Whether it is Markovian, Fibonaccian, or deterministic
that portion of the world that is actualizing has lost
freedom. [It has itself on its back]

Both Music and Math are exact.
And those who teach either music or math
are martinets.

One part of mathematics bends to human duplicity
- statistics
Other part preserve integrity.

GEONRGY.WPD February 15, 1999

GEOMETRY ←→ENERGY

The basic equation of the general theory of relativity,

$$R_{ij} = 8\pi G\left(T_{ij} - \tfrac{1}{2} g_{ij} T\right)$$

where R_{ij} is the curvature tensor, T_{ij} is the stress-energy tensor, and g_{ij} is the metric tensor, states that the geometry (curvature and metric) and the dynamics (stress-energy) of a system determine one another. Or as J. A. Wheeler succinctly puts it:

Curvature tells matter how to move;
Matter tells space time how to curve.

This interaction between geometry and force-energy has been confirmed by many astronomical and physical observations. The equation has been applied mostly in attempts to describe the large scale structure and behavior of the universe, for which purpose it is assumed that the universe is both homogeneous and isotropic because of the great difficulty in solving the equations for more complex configurations. The implications of this equation have been revolutionary in both astronomy and physics, and currently generalizations are sought that will include all the known forces of physics. But in this essay a different kind of generalization is sought.

It is tautological to note that the dynamic capabilities of all systems, animate and inanimate, are both enabled and limited by their form or structure. Historically interactions between structure and behavior have long been recognized. Centuries ago Plato described a realm of archetypes or templates that manifest themselves as behavior or energy patterns in the material world. Einstein's equation marries the structure of space-time to the behavior of bodies in the material world. Plato's dichotomy is information (template or scenario) // form-behavior in the material world. Einstein's dichotomy is structure (information) of space-time // behavior of material objects. If the realm of archetypes is the equivalent of space-time then Plato and Einstein are conceptually in accord. However there may be an important difference. In the material world both energy and information (matter is energy plus information) are present. But what about space-time? Does it contain only information (geometry = pure information) or is space-time itself a species of energy? The equations put information into the curvature and metric tensors and energy into the stress tensor. Is this separation totally correct?

We note here that energy is proportional to frequency:

$$E = \hbar\nu$$

Hence we may consider space-time as space-ħ/energy. That is energy is implicitly contained in space-time. So called "empty" space, since it contains "free" energy, will necessarily expand. No cosmological constant is required.

GEONRGY.WPD February 15, 1999

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If not only information but also energy is present in space-time then both the material world of physical things and the world of archetypes contain both information and energy. An archetype is then more than a template or scenario, it is a species of energy.

Let us redo Plato. Instead of a realm of pure information, let us hypothesize a realm of non material energy forms. That is energy plus information need not necessarily result in matter.

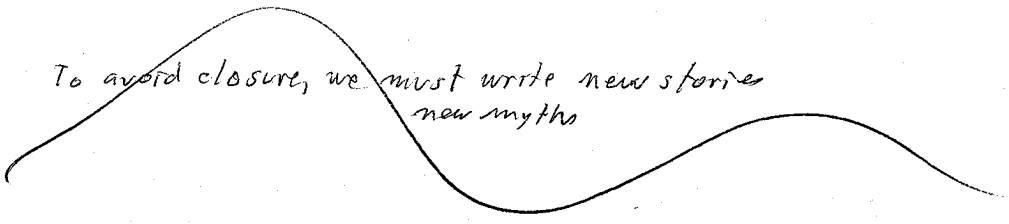
3CHURCHS.WPD February 16, 1999
Revised of 1999#24

The Churches of the Transfiguration

And Yeshua went up unto the mountain taking with him Peter, John, and James. He revealed to them the Great Theophany, the continuing gifts of God, given to us whenever we can receive. The Theophany of Moses, the Law; the Theophany of Elijah, the Still Inner Voice; and Yeshua's own Theophany, The Kingdom of Heaven is within you. And Theophanies are never final. As there was Moses, Elijah, Isaiah, and Myself there will be, as you become able to hear, prophets in times yet to come who will bring more enveloping understanding of the One who is everywhere and eternal, both beyond and within.

And then he charged each of the three, Peter, John, and James, with responsibility for the care of those who would follow. To Peter he charged the protection of his sheep, those only beginning in their awakening, needing the guidance and supporting love of a parent. To John he charged the illumination of those who had committed to the path of contemplation and service. And to James he charged the assumption into Paradise of those whose devotion and courage would cost them their lives.

Thus there are to be three Churches The Church of Instruction, the Church of Illumination, and the Church of Martyrs. And he completed his injunctions by saying, "I am of the Church of Instruction. I have taught and healed those hungry of body and spirit. I am also of the Church of Illumination. I have shared with you and those who have been with me the Light that I have received. And now I must go to Jerusalem so that I may enter the Church of Martyrs, the blessed company whose sacrifices ever resurrect the Life and Light that guides us to the Eternal One.


To avoid closure, we must write new stories
new myths

FILE LOST
~~CHSTJMS.WPD~~

February 16, 1999

The Church of Saint James

THE BURNINGS BEGIN

Jan Hus burned at stake, July 6, 1415, at Constance by Papal decree

John Rogers, 1555, the editor of William Tyndale's translation of the Bible.
By Cardinal Pole

John Hooper, February 1555, Bishop of Worcester.

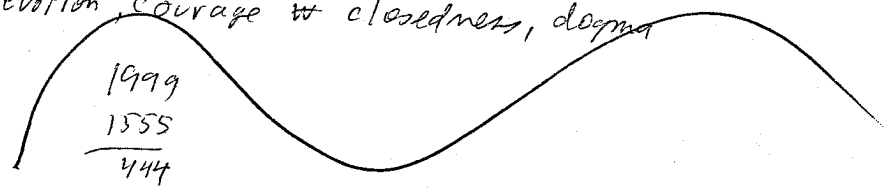
Bishops Latimer and Ridley, Autumn 1555
Latimer: "We shall this day light such a candle, by God's grace,
as shall never be put out".

Archbishop Cranmer, March 1556, by Cardinal Pole

Giordano Bruno, February 17, 1600, (Opposed Aristotle's Logic, Favored Copernicus)
By the Inquisition

Cassie Bernal "Yes, I believe in God" Shot dead at Columbine High School
99/04/20

Devotion, courage ~~to~~ closedness, dogma



1999
1555
444

SINVSLAW.WPD February 22, 1999

SIN AND THE LAW

> ***Oh Lord our God, you answered them indeed; you were a god who forgave them, yet punished them for their evil deeds.***
> -- Psalm 99:8
>
> ***Sin was indeed in the world before the law, but sin is not imputed when there is no law.***
> --Romans 5:13
>
> Adam sinned and as consequence, ***death reigned even over them that had not sinned.***
> --Romans 5:14

The passage from the Psalms infers that there are two orders of transgression, one which could be forgiven, the other which must be punished. The texts from Romans infer that there is a difference between sin and breaking of the law. It was possible for Adam to sin even before there was law. What then is the difference between sin and law breaking?. And is this difference related to what can be forgiven and what must be punished?

We may view this difference as originating in more than one level of rules. One level of rules consists of those of the cosmic or natural order, the direct injunctions of God if you will. These rules may not be violated without punishment, even by those having the freedom to chose. Another level of rules has its origin in social experience, and is codified, enforced, and punished by social forces. These rules can be violated, with punishment expected but not always forthcoming. Still neither of these levels seems to clarify just what sin is. Sin seems to be concerned with a subset of the rules of natural order which may be violated but which still involves inevitable punishment. Sin here is related to negative karma, those volitional actions having consequences that cannot be erased. As law breakers may be pardoned, sinners may be forgiven, but the sin itself has enduring detrimental consequences.

So far we have discriminated three levels of rules:

1) Cosmic or global laws that may not be violated.
2) Transcultural laws that may be violated but result in enduring damage– the realm of sin.
3) Societal laws that operate locally in spatial and temporal domains.- *the realm of crime*

Levels 1) and 3) are enunciated by scientists and lawyers respectively. However, level 2), traditionally clarified by theologians, is in need of severe re-examination. What can be said is that sin may be individual or collective. The consequence of sin is unerasable negative karma. Sin results in that which is in anyway detrimental to any portion of the cosmic order, that is, thoughts, speech and actions that face in and move in directions contrary to that toward the positive potential of the cosmos. [The understanding of which is humankind's most urgent sacred task]

Further Discussion

Role of Intention in Sin? Role of intention in Mistake

Does thought alone contaminate? cf. Sermon on the Mount

cf. Cyber

$$\frac{\text{God}}{\text{Humanity}} = \frac{\text{Potential}}{\text{Actual}}$$

What things specifically are sin?

Sin ≠ Crime Sin ≠ Mistake, accident

The Holocaust
The Congrest
The Inquisition
The Bomb

Sin ≠ Karma
forgivable but Not erasable

When I a + and a −
must look at each case
no valid generalization - i.e. laws or rules
e.g. abortion
euthanasia
must have meta rules

Question
Augustines Original Sin
Knowledge of Good + Evil as sin
Disobedience as Sin

One could say Mistake includes
both law-breaking and Sin

Certain forms of law-breaking, however are
not mistakes.

Intention ≠ Mistake ?
Mistake ⇒

Breaking God's Law	Breaking Societies Rules	errors
Moral Law SINS	CRIMES	MISTAKES Breaking Rules of Logic, Grammar, Mathematics

which to be punished
which to be forgiven
which to be corrected

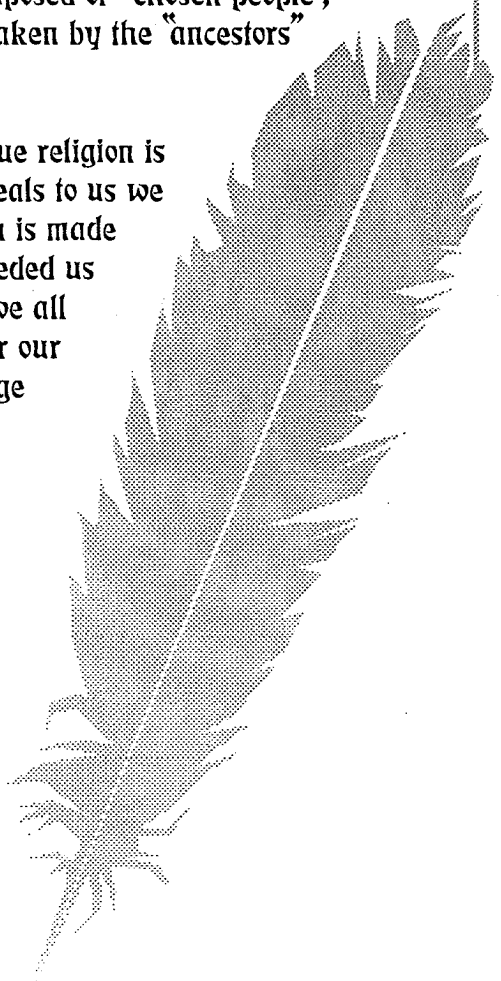
SIN = SEPARATION

TWO GENEALOGIES

In ancient times only the pharaoh or king was divine. And only royalty had ancestral records tracing their lineage back to the gods. Today the worldview holds that in the sense the pharaoh and king were divine, all are now divine. But as kings and pharaohs felt there was an important connection between divinity and lineage, so today it is important for citizens to recognize their divinity by exploring their lineages. In some cultures the importance of this has been long recognized, even taking the form of ancestor worship. But we are commanded to "Honor thy father and mother, that thy days may be long in the land the lord hath given thee".

But we must recognize that we possess two ancestral lineages. One a lineage of blood, Blutverwandshaft; the other a lineage of identification, Wahlverwandshaft. In studying the past we encounter deeds, ideas, and persons that resonate within us. Deeds, ideas, and persons that we somehow recognize as belonging to the same cosmic guild to which we aspire and choose to belong. In this sense such a cosmic guild is composed of "chosen people", those who choose to dedicate themselves to the same path already taken by the "ancestors" with whom they wish to identify.

Perhaps it is not erroneous to say that for each of us the only true religion is dedication to the path of the cosmic guild that recognition reveals to us we have in some timeless sense always belonged. This recognition is made manifest by the lives, words, and sacrifices of those who have proceeded us in time. We select them, or is it that they select us? Or most likely we all make the same selection and form a guild so as to afford one another our mutual support. It is through this guild that we trace our own lineage both back to the gods and forward to God.



2lineags.wpd 99/03/04

Change is gradual or punctuated

Physical
2° Law
Expand Univ

Cyclical Change

The Types of change
Evolution - Mutation growth,
Revolution
Coup d'etat
Innovation {
Replacement
Invention
Discovery Exploration
Virgin Birth

The Types of preventing change
Lineages
Blood
Tulku
Guilds
- - -
Monopolies

Parmenides

The use of cyclicity to prevent linear change

Imagination
Recognition

Quasi Change [gradual]
Permutation
Elections
Business as usual under new name

Fear
Power Lust

Eclecticism
blagoops whee

Single cycle stable
Multi cycles not
Cf. 2 and 3 body problem

Change is the fundamental adversary of power

and there are the Kamarovshis who have mastered retaining power in the face of change

2 parties stable
cf. Mayans understanding of the multicycle change

Two kinds of replacement - with new - with same

Evolution is permutation + mutation

The passing of inheritance

The FOURTYPES of Lineage continuities (and their underlying world views)
Blood - Bio
Tulku - Reincarnation
Memes - Guru-Chela, Prof-Student Prana Culture, Tradition
Laying on of Hands - Club - Initiation - indoctrination - pledge allegiance
↓
Guilds } Elect
Constitution, Citizenship

all are inheriting of money mantle

ZUSHA.WPD

5c
12b

ON LINEAGES A SUPPLEMENT

A lineage is an "old boy's club" extended over time.

Rabbi Zucha of Hanipoli (eighteenth century) was famous for his simple faith. Many stories are told about him, but perhaps the best known related his response to students when asked why his teachings were different from those of his own teacher. Zusha's answer was, "When I come before the judges of the heavenly tribunal, they are not going to ask if I lived my life like Moses, of if I lived my life like Abraham. They are going to ask me if I lived my life to be the best Zusha I could be." ---From "God is a Verb" Rabbi David Cooper p122

Brahma created the world by giving it a theme. Brahma knew the beginning and the end. What Brahma did not know was all the possible variations on the theme. Brahma therefore treasured above all else the variations given the theme by the uniqueness of each individual.

The modes of lineage: heredity inheritance of power (position), authority, wealth, knowledge

Genetic, blood	Kings and their offspring, right by birth
Tulkus	Dalai Lamas etc. importance of timing
Laying on of hands	Bishops and priests, induction by allegiance
Doctrinal transmission	Gurus and chelas, Professors and students, brains washed
Elections	Popes and presidents, only approved candidates allowed
Coup d'etat	Same tyrannies, new faces, permutations only

Energy cannot be inherited data can be information cannot

Yeah, Money is energy no money is a symbol

Guild ~~Laying on of hands~~

The modes of no-lineage: ↔ Eclectic, revolution

Innovation by discovery	exploration, what is into what is known, research
Innovation by invention	creativity, what is imagined into what is, research
Virgin Birth	Innovation from outside the system, receptivity

Judaism deified the message - the Torah

:Note that Islam deified the message [the Quran] and not the messenger [Muhammed] The Church deified the messenger [Jesus –> Christ] and appropriated the message [the Gospels] The deity is neither in the message nor in the messenger, yet the deity is both in the message and in the messenger. For the Deity is the originator of the message and the selector of the messenger.

Lineage ⇔ Tradition ?
to close valid ?
keep power

Figure ⇔ Ground
Parmenides

Openness has two parameters
• breadth, scope
solid angle ... 4π
• depth, focus, filters

Emil Herzog joke

openness: 2 parameters, Ω and $\frac{dr}{dt}$

Zosha.wpd ~~[COPIES]~~ → 1998

5a
12 c

6LINAGES.WPD March 5, 1999

THE TYPES OF LINEAGE

The preservation of power, control, and status quo and the retarding of unwanted change has found a useful device in the concept of lineage. This concept has taken many specific forms.[1]

On the other hand, I find great pleasure and satisfaction when I encounter the wisdom of unheralded individuals; those who seem to have been able to reach essences unshepherded by the protocols of some lineage. I feel it is in the diversity of individuals and their variety of approaches that our true wealth and hope lie. But I suppose all that I am saying is that I treasure most those cultural anarchists like me--no, ~~who~~ those cultural anarchists are different from me.

Precedence

[1]Other scraps on the subject of lineages: Tulkushp.wp6,1998 #5; Confeson.per, 1998#8; 2lineags.wpd, 1999#12

pieces of the puzzle 1999#1

ISAIAH53.WPD

ISAIAH 53 (King James Version)

1 Who hath believed our report? and to whom is the arm of the LORD
revealed?
2 For he shall grow up before him as a tender plant, and as a root
out of a dry ground: he hath no form nor comeliness; and when we
shall see him, there is no beauty that we should desire him.
3 He is despised and rejected of men; a man of sorrows, and acquainted
with grief: and we hid as it were our faces from him; he was
despised, and we esteemed him not.
4 Surely he hath borne our griefs, and carried our sorrows: yet we
did esteem him stricken, smitten of God, and afflicted.
5 But he was wounded for our transgressions, he was bruised for our
iniquities: the chastisement of our peace was upon him; and with
his stripes we are healed.
6 All we like sheep have gone astray; we have turned every one to
his own way; and the LORD hath laid on him the iniquity of us all.
7 He was oppressed, and he was afflicted, yet he opened not his
mouth: he is brought as a lamb to the slaughter, and as a sheep
before her shearers is dumb, so he openeth not his mouth.
8 He was taken from prison and from judgment: and who shall declare
his generation? for he was cut off out of the land of the living:
for the transgression of my people was he stricken.
9 And he made his grave with the wicked, and with the rich in his
death; because he had done no violence, neither was any deceit in
his mouth.
10 Yet it pleased the LORD to bruise him; he hath put him to grief:
when thou shalt make his soul an offering for sin, he shall see
his seed, he shall prolong his days, and the pleasure of the LORD
shall prosper in his hand.
11 He shall see of the travail of his soul, and shall be satisfied:
by his knowledge shall my righteous servant justify many; for he
shall bear their iniquities.
12 Therefore will I divide him a portion with the great, and he
shall divide the spoil with the strong; because he hath poured
out his soul unto death: and he was numbered with the
transgressors; and he bare the sin of many, and made intercession
for the transgressors.

Should this be viewed as prophecy or as archetype?

Prophecy is forthtelling not foretelling

- Bishop Kenneth Cragg

Prophecy reveals other realms.
not especially the future
just

The church has sought to reduce the living God
to one manifestation.

Isaiah is not foretelling, he is forthtelling

Manifestations of God are neither rare
nor once and for all. cf Krishna in the Bagavagita

The church religion chooses to focus on one event.
[science also focuses on a special sub-set of phenomena]

SMALL Ω !! choosing special cases

An archetype manifests again and again
In this sense - cyclical
and: involves prediction, foretelling, prophecy
in that sense
but also Fractal - this is what should be pursued !!!

But this misses the mark.
It is not prediction that is the essence
it is in what the manifestation reveals

The fractal aspect not the cyclical or foretelling aspect
↓
as manifest
so archetype [Hermes T.]

PLNCK2BN1.WPD April 28, 1999

PHYSICAL QUANTITIES

$\log_{10}$ cgs units

Fundamental Constants:

$c = 10.476821$ [L/T]; $G = -7.175705$ [L^3/MT^2]; $\hbar = -26{,}976924$ [ML^2/T]

$c^2 = 20.953642$; $c^3 = 31.430463$; $c^4 = 41.907284$; $c^5 = 52.384105$

$c^2/G = 28.129347$[M/L]; $c^3/G = 38.606168$ [M/T]; $c^4/G = 49.082989$ [ML/T^2] (Force);

$c^5/G = 59.559810$ [ML^2/T^3] (Power); $\hbar G/c^4 = -76.059913$ [LT];

$\hbar/c = -37.453745$ [ML]; $\hbar/\alpha^2 c = -33.180075$; $\hbar/c^2 = -47.930386$ [MT]; $\hbar/\alpha^2 c^2 = -43.656896$

The Planck Particle

$m_o = \sqrt{(\hbar c/G)} = -4.662199$ [M] $l_o = \sqrt{(\hbar G/c^3)} = -32.791545$ [L]

$t_o = l_o/c = -43.268366 = \sqrt{(\hbar G/c^5)}$ [T] = $\tau_o = \sqrt{(l_o^3/Gm_o)} = -43.268366 = \sqrt{(\hbar G/c^5)}$ [T]

$E_o = m_o c^2 = 16.291442 = \sqrt{(\hbar c^5/G)}$ [ML^2/T^2] = $\epsilon_o = Gm_o^2/l_o = 16.291442 = \sqrt{(\hbar c^5/G)}$ [ML^2/T^2]

$\varrho_o = c^5/\hbar G^2 = 93.712439$ [M/L^3]; $G\varrho_o\tau_o^2 = 1$; $E_o t_o = \epsilon_o \tau_o = \hbar$; $\hbar\nu_o = 16.291442$

The Baryon:

$m_p = -23.776602$ [M] $m_n = -23.776004$ [M]

$r_e = -12.550068$ [L]

$t_b = -23.026889 = r_e/c$ $\tau_b = -3.348949 = \sqrt{(r_e^3/Gm_p)} \sim$ [$= 4.48 \times 10^{-4}$ sec] [T]

$\varrho_b = 13.873602 = m_p/r_e^3$ [M/L^3];

The Electron:

$m_e = -27.040511$ [M]

$t_e = -23.026889 = r_e/c$ $\tau_e = -1.716994 = (G\varrho_e)^{-1/2} \sim$ [$= 1.9187 \times 10^{-2}$ sec] [T]

$e = -9.318469$ $e^2 = -18.636938 = \hbar\alpha c$ [ML^3/T^2] $e/\sqrt{G} = -5.730617$ [M]

$\varrho_e = 10.609693$ [M/L^3]

Dimensionless Constants:

$\alpha^{1/2} = -1.068418$; $\alpha = -2.136835$; $\alpha^{3/2} = -3.205253$; $\alpha^2 = -4.273670$

$\alpha^{1/8} = -0.267104$; $\alpha^{2/3} = -1.424556$

$\mu^{1/2} = 1.631955$; $\mu = 3.263909$; $\mu^{3/2} = 4.895864$; $\mu^2 = 6.527818$

$(\alpha\mu)^{1/2} = 0.563537 = n$; $\alpha\mu = 1.127074$; $(\alpha\mu)^{3/2} = 1.690611$; $(\alpha\mu)^2 = 2.254148$

$(\alpha\mu)^{2/3} = 0.751383$; $(\alpha\mu)^{3/4} = 0.845306$; [$\log_{10} 7 = 0.845098$]

$S^{1/2} = 19.677940 = N$; $S = 39.355880$; $S^{3/2} = 59.033820$; $S^2 = 78.711760$

Mathematical Quantities:

$\pi = 0.497150$; $2\pi = 0.798180$; $4\pi^2 = 1.596360$; $4\pi/3 = 0.622089$; $8\pi/3 = 0.923119$

$e = 0.434294$; $\Phi = 0.208988$;

Miscellaneous Quantities:

No. sec in year: = 7.499112; $T_U = 17.456065$ seconds;

$\hbar/[(\alpha c)^2 t_o] = -0.388530$ [M] ~ 0.408762 g

THE MARTYRS OF BREAD AND THE MARTYRS OF WINE

There are two kinds of martyrdom:

Living martyrdom: Living one's life on a dedicated path, living in search of understanding, wisdom, peace, and love. Living for the salvation or enlightenment of all human or sentient beings. Identifying, not with the ego-self, but with others, with all life, with the Earth, with all Creation.

Dying martyrdom: This is the martyrdom of ultimate commitment. It arises whenever one's path encounters an obstacle that feels threatened and resorts to physical force as the arbiter of the trans-physical matters of heart or mind.

The Church of St. John.
The Martyrs of the Bread

This is my body which is given for you, take eat all of it.

The body symbolizes the wisdom of the teaching which is the fruit of sacrificial living. The sacrifice of living life for the recognition of wisdom, for the perfection of the intellect, for access to higher Mind. The body is the Tao Te Ching, the Dharma, the Bhagavad-Gita, the Gospels, the Quran, and all holy scriptures, as well as the ever evolving constructs of science.

The Church of St. James.
The Martyrs of the Wine

This is my blood which is shed for you, drink it all of you.

The blood is the resurrection of the spirit which is the fruit of sacrificial dying. The resurrection is the inspiration that gives hope, vision, and meaning to life. The resurrection is liberation from the confines of past prisons both of the heart and the mind.

Martyrdom is beyond sacrifice

TABLE OF VALUES OF $N^x n^y$

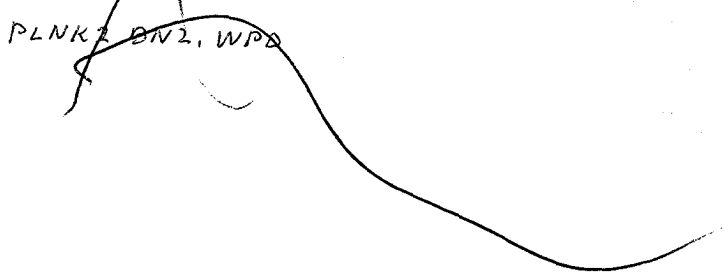
$N = \sqrt{S}$, where S is the ratio of coulomb to gravitational force;

$n = \sqrt{(\alpha\mu)}$, where α is the fine structure constant and μ is the ratio of baryon mass to electron mass.

All entries are $\log_{10}$ of cgs values.

	n^{-4}	n^{-3}	n^{-2}	n^{-1}	n^0	n	n^2	n^3	n^4
N^4	76.457612	77.021149	77.584686	78.148223	78.711760	79.275297	79.838834	80.402371	80.965908
N^3	56.779672	57.343209	57.906746	58.470283	59.033820	59.597357	60.160894	60.724431	61.287968
N^2	37.101732	37.665269	38.228806	38.792343	39.355880	39.919417	40.482954	41.046491	41.610028
N	17.423792	17.987329	18.550866	19.114403	19.677940	20.241477	20.805014	21.368551	21.932088
N^0	-2.254148	-1.690611	-1.127074	-0.563537	0	0.563537	1.127074	1.690611	2.254148
N^{-1}	-21.932088	-21.368551	-20.805014	-20.241477	-19.677940	-19.114403	-18.550866	-17.987329	-17.423792
N^{-2}	-41.610028	-41.046491	-40.482954	-39.919417	-39.355880	-38.792343	-38.228806	-37.665269	-37.101732
N^{-3}	-61.287968	-60.724431	-60.160894	-59.597357	-59.033820	-58.470283	-57.906746	-57.343209	-56.779672
N^{-4}	-80.965908	-80.402371	-79.838834	-79.275297	-78.711760	-78.148223	-77.584686	-77.021149	-76.457612

April 30, 1999


PLNK2 DN2. WPD

PLNK2BN3.WPD April 30, 1999

See 1999#4

PLANCK PARTICLE BARYON TRANSFORMATIONS

If we write N for $S^{1/2}$ and n for $(\alpha\mu)^{1/2}$, then the following relations between the Planck particle and the baryon obtain:

$$\text{Mass}\ \frac{m_o}{m_p} = \frac{N}{n};\quad \text{Length}\ \frac{l_o}{r_e} = \frac{1}{Nn}$$

$$\text{v - time}\ \frac{t_o}{t_b} = \frac{1}{Nn};\quad \rho\text{ - time}\ \frac{\tau_o}{\tau_b} = \frac{1}{N^2 n}$$

Note velocity time and density time are equal for the Planck particle and that $N\, t_b = \tau_b$ resonance?

$$\text{m - energy}\ \frac{E_o}{E_b} = \frac{N}{n};\quad \text{G - energy}\ \frac{\varepsilon_o}{\varepsilon_b} = \frac{N^3}{n}$$

where $E = mc^2$ and $\varepsilon = Gm^2/l$

$$\text{t - action}\ \frac{\Omega_o}{\Omega_b} = \frac{1}{n^2};\quad \tau\text{ - action}\ \frac{\Omega_o}{\Omega_b} = \frac{N}{n^2}$$

where t-action is ML^2/t and τ-action is ML^2/τ, are the respective angular momenta.

$$\text{t - force}\ \frac{F_o}{F_b} = N^2;\quad \tau\text{ - force}\ \frac{F_o}{F_b} = N^4$$

where t-force is ML/t^2 and τ-force is ML/τ^2.

$$\text{G - force}\ \frac{\Psi_o}{\Psi_b} = N^4;\quad \text{Density}\ \frac{\rho_o}{\rho_b} = N^4 n^2$$

where G-force is GM^2/L^2 and density is M/L^3

What are the ratios to the Planck force, $\frac{c^4}{G}$, 2

PLNK2BN4.WPD MAY 3, 1999

ELECTRIC CHARGE TRANSFORMATIONS

1995 values: (Log_{10} cgs) $e = -9.318\ 468\ 712$ $[\sqrt{(ML^3/T^2)}]$;
$e^2 = -18.636\ 937\ 424$ $[ML^3/T^2]$

$e^2 = \hbar\alpha c = -18.636\ 937\ 429$
$e^2 = m_e r_e c^2 = -18.636\ 937\ 4$
$e^2 = G m_p m_e S = -18.636\ 937\ 6$

$S = 39.355880$
$N = \sqrt{S} = 19.677940$
$n = \sqrt{\alpha\mu} = 0.563537$

Planck Particle:

$$e_o^2 = m_o l_o^3/t_o^2 = -16.500\ 102 = e^2/\alpha = \hbar c$$

Proton:

$$e_{pt}^2 = m_p r_e^3/t_p^2 = -15.373\ 028 \qquad \frac{e_o^2}{e_{pt}^2} = \frac{1}{n^2} \quad -1.127\ 075 = -\alpha\mu$$

$$e_{p\tau}^2 = m_p r_e^3/\tau_p^2 = -54.728\ 908 \qquad \frac{e_o^2}{e_{p\tau}^2} = \frac{N^2}{n^2} \quad 38.228\ 806 = \frac{S}{\alpha\mu}$$

Electron:

** $e_{et}^2 = m_e r_e^3/t_e^2 = -18.636\ 937 = e^2$ $\qquad \frac{e_o^2}{e_{et}^2} = \frac{1}{\alpha} \quad 2.136\ 835$

$$e_{e\tau}^2 = m_e r_e^3/\tau_e^2 = -61.256\ 727 = G m_e^2 \qquad \frac{e_o^2}{e_{e\tau}^2} = \frac{N^2\mu}{\alpha} = \frac{N^2 n^2}{\alpha^2} \quad 44.756\ 625$$

** $e_{et}^2 = e^2$ leads to the definition of e as the charge of the electron. ($\neq e_o^2$)

$$\frac{e_{ot}^2}{e_{o\tau}^2} = 1 \qquad \frac{e_{pt}^2}{e_{p\tau}^2} = N^2 \qquad \frac{e_{et}^2}{e_{e\tau}^2} = N^2\mu$$

PLNK2BN5.WPD MAY 3, 1999

FORCES $[ML/T^2]$

The Planck Particle:

The gravitational force: $F_{go} = Gm_o^2/l_o^2 = 49.082\ 988$
$c^4/G = 49.082\ 989$; $\hbar/ct_o^2 = 49.082\ 989$
The electric force: $F_{eo} = e_o^2/l_o^2 = 49.082\ 988$ $F_{eo} = F_{go} = F_o$

Note that a Planck Particle's gravitational and electric forces are equal.

Proton:

The gravitational force: $F_{gp} = Gm_p^2/r_e^2 = -29.628\ 773$ $\frac{F_{go}}{F_{gp}} = N^4$

The electric forces: $F_{ept} = e_{pt}^2/r_e^2 = 9.727\ 108$ $\frac{F_{eo}}{F_{ept}} = N^2$

$F_{ep\tau} = e_{p\tau}^2/r_e^2 = -29.628\ 772$ $\frac{F_{eo}}{F_{ep\tau}} = N^4$

Electron:

The gravitational force: $F_{ge} = Gm_e^2/r_e^2 = -36.156\ 591$ $\frac{F_{go}}{F_{ge}} = N^4\mu^2 = \frac{N^4n^4}{\alpha^2}$

The electric forces: $F_{et} = e_{et}^2/r_e^2 = m_e r_e/t_e^2 = 6.463\ 199$ $\frac{F_{eo}}{F_{eet}} = N^2\mu = \frac{N^2n^2}{\alpha}$

$F_{e\tau} = e_{e\tau}^2/r_e^2 = G\, m_e^2/r_e^2 = -36.156\ 591$ $\frac{F_{eo}}{F_{e\tau}} = N^4\mu^2 = \frac{N^4n^4}{\alpha^2}$

Note that in the Planck particle, the proton, and the electron, the gravitational and τ-electric forces are equal.

TABLE OF VALUES OF $N^x \mu^y$

$N = \sqrt{S}$, where S is the ratio of coulomb to gravitational force;
and μ is the ratio of baryon mass to electron mass.
All entries are $\log_{10}$ of cgs values.

	μ^{-3}	μ^{-2}	μ^{-1}	μ^0	μ	μ^2	μ^3
N^4	68.920033	72.183942	75.447851	78.711760	81.975669	85.239578	88.503487
N^3	49.242093	52.506002	55.769911	59.033820	62.297729	65.561638	68.825547
N^2	29.564153	32.828062	36.091971	39.355880	42.689789	45.883698	49.147607
N	9.886213	13.150122	16.414031	19.677940	22.941849	26.205758	29.469667
N^0	-9.791727	-6.527818	-3.263909	0	3.263909	6.527818	9.791727
N^{-1}	-29.469667	-26.205758	-22.941849	-19.677940	-16.414031	-13.150122	-9.886213
N^{-2}	-49.147607	-45.883698	-42.689789	-39.355880	-36.091971	-32.828062	-29.564153
N^{-3}	-68.825547	-65.561638	-62.297729	-59.033820	-55.769911	-52.506002	-49.242093
N^{-4}	-88.503487	-85.239578	-81.975669	-78.711760	-75.447851	-72.183942.	-68.920033

PLNK2BN7.2PD MAY 5, 1999

of 1999 # 17

PLANCK PARTICLE ELECTRON TRANSFORMATIONS

If we write N for $S^{1/2}$ and n for $(\alpha\mu)^{1/2}$, then the following relations between the Planck particle and the electron obtain:

$$-22.378\,321 \qquad \text{mass}\ \frac{m_o}{m_e} = \frac{N\mu}{n}; \quad \text{length}\ \frac{l_o}{r_e} = \frac{1}{Nn} \qquad -20.241\,477$$

$$\text{v-time}\ \frac{t_o}{t_e} = \frac{1}{Nn}; \quad \rho\text{-time}\ \frac{\tau_o}{\tau_e} = \frac{1}{N^2 n\sqrt{\mu}} \qquad -41.551\,372$$

Note velocity time and density time are equal for the Planck particle and that $t_e N\sqrt{\mu} = \tau_e$

$$\text{m-energy}\ \frac{E_o}{E_e} = \frac{N}{n}\sqrt{\frac{\alpha}{\mu}}; \qquad \text{G-energy}\ \frac{\varepsilon_o}{\varepsilon_e} = \frac{N^3\mu^2}{n} \qquad 64.998\,101$$

where $E = mc^2$ and $\varepsilon = Gm^2/l$, $\varepsilon_e = -48.706\,659$

$$\text{t-action}\ \frac{\Omega_o}{\Omega_{et}} = \hbar\alpha; \qquad \tau\text{-action}\ \frac{\Omega_o}{\Omega_{e\tau}} = \frac{N\sqrt{\mu}}{\alpha} \qquad 23.446\,729$$

where $\Omega_{e\tau} = -50.423\,653$ and
where t-action is ML^2/t, and τ-action is ML^2/τ, the respective angular momenta.

$$\text{t-force}\ \frac{F_o}{F_{et}} = N^2\mu; \quad \tau\text{-force}\ \frac{F_o}{F_{e\tau}} = \frac{N^4 n^4}{\alpha^2}$$

where t-force is ML/t^2 and τ-force is ML/τ^2. $F_o = 49.082\,989$

$$85.239\,580 \qquad \text{G-force}\ \frac{F_o}{F_{ge}} = N^4\mu^2; \quad \text{Density}\ \frac{\rho_o}{\rho_e} = N^4 n^4 \mu \qquad 83.102\,746$$

where G-force is GM^2/L^2 and density is M/L^3

PLNK2BN8.WPD MAY 9, 1999

THE PLANCK PARTICLE

PARAMETER	SYMBOL	DIMENSION	FORMULAE	VALUE $\log_{10}$(cgs)
MASS	m_o	[M]	$\sqrt{(\hbar c/G)}$	- 4.662199
LENGTH	l_o	[L]	$\sqrt{(\hbar G/c^3)}$	- 32.791545
V-TIME	t_o	[T]	$\sqrt{(\hbar G/c^5)}$ l_o/c	- 43.268366
ϱ-TIME	τ_o	[T]	$\sqrt{(\hbar G/c^5)}$ $\sqrt{(l_o^3/Gm_o)}$	- 43.268366
MOMENTUM	Q_{ot}	[ML/T]	$\sqrt{(\hbar c^3/G)}$ $m_o l_o/t_o$	5.814622
MOMENTUM	$Q_{o\tau}$	[ML/T]	$\sqrt{(\hbar c^3/G)}$ $m_o l_o/\tau_o$	5.814622
ANG. M'NTUM	Ω_{Ot}	[ML^2/T]	$\hbar$	- 26.976924
ANG. M'NTUM	$\Omega_{O\tau}$	[ML^2/T]	$\hbar$	- 26.976924
REST ENERGY	E_O	[ML^2/T^2]	$\sqrt{(\hbar c^5/G)}$ $m_o c^2$	16.291442
GRAV ENERGY	E_{OG}	[ML^2/T^2]	$\sqrt{(\hbar c^5/G)}$ Gm_o^2/l_o	16.291442
ν - ENERGY	$E_{O\nu}$	[ML^2/T^2]	$\sqrt{(\hbar c^5/G)}$ $\hbar\nu$	16.291442
t - POWER	P_{ot}	[ML^2/T^3]	c^5/G $m_o l_o^2/t_o^3$	59.559810
τ - POWER	$P_{o\tau}$	[ML^2/T^3]	c^5/G $m_o l_o^2/\tau_o^3$	59.559810
t - CHARGE	e_{ot}^2	[ML^3/T^2]	$\hbar c$ $m_o l_o^3/t_o^2$	- 16.500102
τ - CHARGE	$e_{o\tau}^2$	[ML^3/T^2]	$\hbar c$ $m_o l_o^3/\tau_o^2$	- 16.500102
FORCE	F_o	[ML/T^2]	c^4/G $m_o c^2/l_o$	49.082989
G - FORCE	F_{oG}	[ML/T^2]	c^4/G Gm_o^2/l_o^2	49.082989
e - FORCE	F_{oe}	[ML/T^2]	c^4/G e^2/l_o^2	49.082989
DENSITY	ϱ_o	[M/L^3]	$c^5/\hbar G^2$ m_o/l_o^3	93.712439
VELOCITY	c	[L/T]		10.476821
ACTION	h	[ML^2/T]		- 26.976924
"NEWTON"	G	[L^3/MT^2]		- 7.175705
CHARGE	e^2	[ML^3/T^2]		- 18.636937
e - ENERGY				

Volume $\left(\frac{\hbar G}{c^3}\right)^{3/2}$ −98.374635

$\mathbb{P}$: $f = \frac{1}{t}$ $\quad \nu = \frac{1}{t}$

$h\nu = hf = E_0 = E_{0G} = 16.291442$

ANONYMITY

On June 4, 1989 world television showed a lone Chinese man standing defiantly before a column of tanks blocking their path. This is not only one of the most remembered moments in the history of 20th century television, but one of the most memorable moments in the great drama of the advance of human liberty. And if we are to recognize those who have made the greatest contributions to this advance, it is the martyrs, those burned at the stake, beheaded, gassed, or following this man, massacred at Tiananmen Square. The anonymity of this man elevates him to the level of a symbol representing all those who have at any place at any time taken a stand for the cause of liberty.

The Churches of the Transfiguration

The final journey to Jerusalem had begun. For three years Yeshua had taught them, healed them, loved them. Had told them things that had cleared their minds, opened their hearts, brought life to their souls. But now he told them the time had come for him to go to the Temple in Jerusalem and offer his sacrifice. The road uneven, the walk weary, the evenings welcome when they could lie beside the way and rest. But here early before the dawn , Yeshua was wakening three of them. "Come silently with me for there is here on the summit of this mount a message for each of you"

And Yeshua went up unto the mountain taking with him Peter, John, and James. He revealed to them the Great Theophany, the continuing gift of God, given to us whenever we are prepared to receive. The Theophany of Moses, the Law; the Theophany of Elijah, the Still Inner Voice; and Yeshua's own Theophany, The Kingdom that is Love. But more: He told them there is never a final Theophany. As there was Moses, Elijah, and others, and now I, Yeshua, there will be messengers in times yet to come who, when you are able to hear, will bring purer and clearer understanding of the One who is both everywhere and eternal, beyond and within.

And then he charged each of the three, Peter, John, and James, with responsibility for the care of those who were to come. To Peter he charged the *protection* of the sheep, those beginning awakening, needing the guidance and supporting love of a parent. To John he charged the *illumination* of those who committed to a path of contemplation and service. And to James he charged the *inscription* of those whose devotion and courage would allow them to offer their lives.

Thus there are to be three Churches: The Church of Instruction, the Church of Illumination, and the Church of Inspiration. And he completed his message by saying, "I am the Church of Instruction. I have taught and healed those hungry of body and spirit. I am also the Church of Illumination. I have shared with you and those who have been with me the Light that I have received. And now I go to Jerusalem that I may also become the Church of Resurrection, the blessed company of martyrs whose sacrifice forever breaths inspiration into all of life, and renews union with the Eternal One.

Journey.wpd 99/06/19 cf. 1999#9

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- The Church of Instruction prosylytes, missionizes
- The Church of Illumination receives those who seek
  Those who are in but not of the world
- The Church of Transformation engages the world
  Challenges, confronts
  The world responds by making martyrs
  ∴ immortalizing
  It is blood that is the essence of life

CONCERNING THE TRANSFIGURATION

The interpretation of the Transfiguration given in the accompanying story is in accord not only with the scriptures[1], but with the concept that there will always be One Yet to Come. In Judaism, this is the Messiah; in Christianity, it is the second coming of Christ; in Buddhism, Maitreya, the Buddha yet to come. And of course the Hindu concept of the successive avatars of Vishnu. Krishna says in the Bhagavad Gita, "Whenever there is the need, I make for myself a body and return to earth." Turnings of the Wheel

While in some quarters the Transfiguration has been recognized as the most significant event of the New Testament, surpassing and making intelligible the Crucifixion and Resurrection, it has been largely ignored by the Church in the west. The Eastern Church recognized its importance as foreshadowing the Resurrected Christ and inferring the Cosmic Christ. "The central idea of the Eastern Fathers was that of *theosis*, the divinization of all creatures, the transfiguration of the world." (As against the idea of personal salvation which was the emphasis of the Western Church)

But the message of the Transfiguration undid the notion that the Gospels were God's last message to his people on earth. It affirmed the continuing love and concern of God. He would speak again and again, return again and again. But the continued presence of God did not fit with the idea that God had passed His authority to the Church. To protect its authority and power, the Western Church chose to downplay and superficially interpret the event of the Transfiguration. Only after the Reformation did the Roman Church acknowledge the Transfiguration in its liturgical calendar, with the Protestants ignoring it totally. But more than undoing the finality view of the Church, the interpretation that there are three churches, undermines centralized ecclesiastical authority and power. In ignoring the Transfiguration, the Church of St Peter has taken on itself to persecute the Church of St. John. (As in the obliteration of the Celtic Church), However, in its persecutions it has supplied the Church of St. James with ample martyrs whose sacrifice has kept the pure vision of the Gospels alive.

Now all of this is changing. The theology of continuing enlightenment, the recognition of an evolving theophany has served to liberate the West from the sheep pen in which it has been spiritually confined for centuries. Yes, grant that Peter and his "successors" were given charge of the sheep, there was no authority granted to them or to anyone to defer the sheep's liberation from the pen nor to delay their graduation to a continuing spiritual path. At the close of the millennium, we seem to be preparing ourselves to receive a new theophany. And when prepared the promise of the Transfiguration is that we shall again receive.

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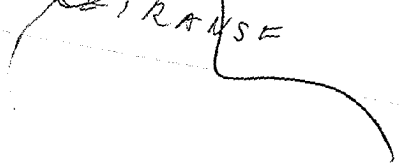
[1] References to the Transfiguration in the New Testament:
Matthew 17:1-13; Mark 9:2-9; Luke 9:28-36; II Peter 1:16-19
Reference re Moses: Exodus 34:29-35; re Elijah: I Kings: 19:9-13


TRANSE

TRINITY.WPD JUNE 29, 1999

THE WISDOM—THE POTENTIAL—THE REALIZED

WISDOM IS THE GUIDE–THE POTENTIAL IS THE GOAL–THE REALIZED IS THE SUPPORT

This is expressed in various organized religions as:

DHARMA–BUDDHA–SANGHA	Buddhism
GOSPELS–CHRIST–CHURCH	Christianity
TORAH–YAWEH–HOUSE OF ISRAEL	Judaism
QURAN–ALLAH–ISLAM	Islam

God is a name for the highest Wisdom, highest Potential, highest realization that Man can envision. This is the true Trinity, although usually given in anthropomorphic terms such as: Father, Son, and Holy Spirit. However this vision of the highest is forever extended and enhanced by the wisdom gleaned from the day to day lives of human beings, derived from their experiences of separation and suffering, of unity and recognition. From time to time the accumulation of this wisdom is formulated in a new Theophany by some teacher, a Siddharta, a Moses, a Yeshua, a Mahomet.

A great fallacy is the substitution of worship for being. Worship implicitly effects separation. When we worship divinity it is out there, when we are being divinity it is within us. [*The Kingdom of Heaven is within you.*] We are not called to be separate from divinity, to make sacrifices to it in order to acquire its favor nor to live by petition and supplication. Rather we are called to become divinity exuding compassion and forgiveness, not requiring, but dispensing gratitude, not sacrificing others but offering ourselves.

The Path involves :

Study of the Wisdom: Purification of the intellect
Being One with the Potential, the Divinity: Purification of the heart
Living within the Community: Mutual support of all who are on the path
Service to all sentient beings.

The Meditations of Silence have proved to be efficacious beginning and continuing practices allowing Oneness with the Potential. However, from Oneness with the Potential comes both understanding and recognition for the boundless wisdom; and compassion and theosis for all sentient beings.

Develop this w Spong

What role is proper for the actual, the realized, to play in selecting the potential?

e.g. the question of abortion is one of selection

When you have an issue, problem, or challenge, you cannot solve it at the same level of consciousness by which you created it.

—Albert Einstein

The same kind of education that led us into the cul-de-sac will not get us out

—Alfred North Whitehead

The environmental backlash we confront today cannot be eliminated just by applying more of the same science and technology that put us in our present predicament.

—Stewart L. Udall

If the only tool you have is a hammer, you tend to see every problem as a nail.

—Abraham Maslow

Philosophy is about the attempts to solve with words the problems that have been created by words.

—Li Kiang

Government is about the attempts to solve with legislation the problems that have been created by legislation.

—Li Kiang

Science is about the attempts to solve with theories the problems that have been created by theories.

—Li Kiang

Religion is about the attempts to solve with authority the problems that have been created by authority.

—Li Kiang

Technology includes attempts to solve with technology the problems that have been created by technology.

- L.K.

NOTHING1.WPD JULY 12, 1999

THE EXPLORATION OF NOTHINGNESS—PART I

At the time of Pythagoras there was no **zero** in the number system. The association of the abstract concept of number with quantity of objects had over millennia been gradually developed, but the association of number with complete absence of objects was felt to be wrong: No object, no number. But Pythagoras felt uneasy about this and thought that there should be a numerical symbol for nothing. He concluded that "1", **one**, could stand for nothing, for the non-presence or non-existence of objects. Perhaps he reasoned from ordinals. If there were no second, no third, etc. , or if there were simply no second, then saying something was first was meaningless. Whatever his reasoning, the implication of **one** representing or being nothing was that there had to be two or more of anything in order for it to exist. Equipped with the symbol "0", **zero**, which was introduced to the West centuries later[1], we hold Pythagoras' solution to nothingness to have been a quaint stroll down a dead end street.

However, there is something to be said for Pythagoras' view. Let us say that there is only one color, then we would not have the concept of color. Color would not exist. Only when there is more than one color does color come into existence.[2] Or if there were only one temperature, say 70° F all the time, we would not be conscious of temperature. Or more likely in Pythagoras' mind, the example of tone. If there were but one tone, then there is no tone. Only when there are many tones does sound or the awareness of sound come into existence. (Is this the origin of the Music of the Spheres which, it is said, we never hear because we hear it all the time?) It could even be said that Pythagoras' reasoning was supportive of paganism and pantheism. If there is but one God then there is no God. Monotheism infers atheism.

But what is valid in Pythagoras' approach is the fact that for a parameter (e.g. color) to exist or be recognized it must assume two or more values. We can then see the relation between conventional or **zero** nothingness and Pythagorean or **one** nothingness: There are two levels involved, the level of parameter and the level of values of the parameter. A parameter with one value is not recognized as a parameter; only when there are two or more values of a parameter does it come into existence (or awareness, depending on your ontological selections). **One** on the value level corresponds to **zero** on the parameter level; two or more on the value level corresponds to **one** on the parameter level. So when Pythagoras says that **one** can represent nothing, he means having only **one** value effects a **zero** or null parameter. This is not a quaint dead end at all. It reminds us that there may be many parameters of which we are not aware that are basic to the definition the world. We do not notice them because we perceive only one value, or they do not vary or change within our resolving power of space or time. Finally, we must give Pythagoras credit for a preliminary construction of what we now call category theory.

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[1]Although the Babylonians had a symbol for void as early as 500 BCE, Zero, our symbol for nothing was introduced to Europe by the Arabs in the 9th century. The Arabs obtained it from India, but exactly when it was devised in India is not certain. It is also of interest that the Mayans in meso-America had quite independently created a symbol for nothing as early as the third century.

[2]There is an ontological argument here which we shall avoid for the present. We will not here probe into existence versus awareness of existence.

NOTHING2.WPD JULY 13, 1999

THE EXPLORATION OF NOTHINGNESS PART II

Uniform sameness is the philosophical equivalent of non-existence—Eddington

From PART I we saw that Pythagoras felt that if there were only one of anything, it did not exist. He accordingly concluded that the number "1" could be used to represent nothing or non-existence in the manner we use the number "0" today. But it appears that what Pythagoras really had in mind was that the number "1" signified something that took on only one value, did not change, always remained the same. This would be something that we would be unlikely to be aware of. Centuries later Eddington came up with the same idea: uniform sameness in space or time would escape perception and as far as we were concerned would not exist. But if we make the distinction between existence and our awareness of existence, we can go along with Pythagoras and Eddington and use **one** to represent uniform sameness and hence non-awareness, but still use **zero** for non-existence.

In Part I we discriminated parameters and values. These may be represented as number pairs, [p,v] with the provisos: If $v \leq 1$, then $p = 0$; and if $v > 1$, then $p = 1$. That is if there are two are more values, then the parameter exists in the sense of being in the domain of our awareness. But if no value or only one value (sameness) then the parameter does not exist for us. We shall take the first member of the pair to represent awareness or non-awareness with the possible entries p (a number > 1), and 1. p in the first place means awareness exists, 1 in the first place means no awareness. The second member will represent existence or non-existence, with possible entries v (a number >1), 1, and 0. v in the second place means physical and perceptual existence, 1 in the second place means non-physical existence, and 0 means non-existence. There are six possibilities:

[p,v] represents that which physically exists and is perceptually experienced, the visible, the domain we usually designate as physical reality [Kant's phenomena]

[1,v] represents ontological domains which may physically exist, and even though changing ($v > 1$) for some reason (such as epistemological limitations) we are not aware of them, (or choose to ignore them), [Kant's noumena]

[p,1] domains which have non-physical existence, but of which we are aware. These are cognitatively rather than perceptually experienced. Example: mathematics

[1,1] domains which have non-physical existence, and of which we are not aware.

[p,0] domains which do not exist, but of which we are cognizant
Fiction, realms created by imagination
This could also include awareness of nothingness, the exploration of the gaps in existence, exploration of these realms may reveal that the non-existing portion of the universe may be as rich as the existing portion. And this non-existing portion may be knowable.

[1,0] no awareness and no existence, the domain of Nagarjuna and Buddhist contemplation.

Finally we must add [0,0], our symbol for Total Nothingness.

The Tao that can be expressed is not the Tao.
—Tao te Ching

Hope that is seen is not hope.
—Romans 8:24

A secret that can be told in no secret.
—Anon

We do not hear the music of the spheres because we hear it continuously.
---Anon

What we are familiar with we cease to see.
—Anais Nin

The Tao is hidden but always present.
—Tao te Ching

Undiscriminated sameness and non-existence are indistinguishable.
—Arthur S. Eddington

Being and non-being create each other.
—Lao Tzu

The secret of the psyche is safe because it is not communicable to those who have not yet experienced it for themselves.
—Edward F. Edinger

The truth of a thing is in the feel of it, not in the 'think' of it.
—Stanley Kubrick

THE UBIQUITOUS IS ~~INVISIBLE~~ UNSEEN

2

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also 2000#48
2000#54
2000#58

HSUNTZU.WPD JULY 19, 1999

OBSESSION

The sage Hsün Tzu (c. 250 B.C.E.) was disturbed with the obsessions of philosophers,. that they emphasized one aspect and ignored others:[1]

> Mo Tzu was obsessed by utilitarian considerations
> and did not understand the beauty of form.
>
> Sung Tzu was obsessed by the need to lessen desires,
> for he could not understand how they could be satisfied.
>
> Shen Tzu was obsessed with the concept of law and
> did not understand the part played by worthy men.
>
> Shen Pu-hai was obsessed with the power of circumstance
> and did not understand the role of human intelligence.
>
> Hui Tzu was obsessed with words and
> did not understand the truth that lies behind them.
>
> Chuang Tzu was obsessed with thoughts of nature
> and did not understand the importance of man.

Who thinks only of utilitarian concerns will take the Way to be wholly a matter of profit. Who thinks only of desires will take the Way to be wholly a matter of satisfaction. Who thinks only of the law will take the Way to be wholly a matter of policy. Who thinks only of circumstance will take the Way to be wholly a matter of expedience. Who thinks only of words will take the Way to be wholly a matter of logic. Who thinks only of nature will take the Way to be wholly a matter of harmonization. But Kung Fu Tzu (Confucius) was free of obsession. He studied the doctrines of all schools and established his own school, open to correction.

What Hsün Tzu observed centuries ago we see today. Philosophies, Religions, Political Parties, Professions, obsessed with some aspect of the world and failing either to effect balance or find solutions. As in China in the third century B.C.E. we find many of the same obsessions:

Business with bottom line	Scientists with Nobel Prizes
Politicians with re-election	Television with ratings
Republicans with tax cuts	Sports fans with winning
Presidents with polls	Churches with dogmas
Lawyers with litigation	Americans with consumption
Health care with profits	Teenagers with sex

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[1]Hsün Tzu, Basic Writings trans B. Watson, Columbia Univ Press 1963, p 125

LSTPI728.WPD JULY 28, 1999

SOME REFLECTIONS ON MY 81ST BIRTHDAY

I feel a strong identification with the century now ending, and also with the millennium now ending, but most of all with the age now ending, the so-called Piscean Age. Perhaps that is why I like to call myself the "Last Piscean". This age, the one labeled the Axial Age by Karl Jaspers, began in the sixth century B.C.E. In that century sages in China, in India, and around the world, in Persia, Palestine, Greece, on to Mexico, gave to the world a remarkable set of novel ontological and axiological insights. For the past 26 centuries we have been digesting and amplifying those insights. And as some have said, all the ideas contributed since have only been summaries of or footnotes to the Axial Ideas. Be that true or not, those ideas have shaped and guided our religions, sciences, cultures, and world views to this day. But now there is change in the air. The recent decades have the feel of a new axial period in gestation. What is to be born cannot be said as yet, but whatever it is will effect a deep change in how we view ourselves and the world.

Our task during this inter-age bardo is not to speculate on the future, but to consecrate the experience of the departing age. And how is this to be done? Paradoxically, to consecrate we must desecrate. We must pull down the idols and gods we have worshiped, but recognize their contributions to the elevation and purification of our temples. As the gods depart, the temples become launch pads to new perceptions and new insights–vehicles taking us to new worlds. If we were to view this in terms of architectural metaphor, the domes of cathedrals and mosques transform into those of observatories, the steeples and minarets transform into space vehicles. But the underlying abstract symbols of sphere and trilon with their eternal meanings remain. Only the utilitarian specifics change with the age. And through the juxtaposition of age with age we can begin to glimpse the real meaning sphere and trilon.

DHARMA01.WPD AUGUST 4, 1999

The Wisdom of the Bodhisattva Yeshua

Whosoever shall seek to save his life, will lose it; and whosoever shall offer his life shall save it.

Matt 16:25

My friends, be not afraid of them that kill the body, and after that have no more they can do, rather fear them that can destroy body and soul.

Luke 12:4, Matt 10:28

Love your enemies, bless them that curse you, do good to them that hate you, and pray for them which despitefully use you and persecute you. Do good and lend to them hoping for nothing again.

Matt 5:44, Luke 6:35

Do as your Father in Heaven: He makes his sun to rise on the evil and on the good, and sends rain on the just and the unjust.

Matt 5:45

When two or three are gathered in my name, there am I, in the midst of them.

Matt 18:20

Come unto me, all of you that labor and are heavy laden, and I will give you rest.

Matt 11:28

If any person thirst, let him come unto me, and drink.

John 7:37

Blessed are the pure in heart for they shall see God.

Matt 5:8

If this cup may not pass away from me, except I drink it, thy will be done.

Matt 26:42

He that followeth me, the works that I do he shall do also, and greater works than these shall he do.

John 14:12

Purity of thought:
Matt 5:28

Purity of speech:
Matt 5:22

Purity of action:
Matt 5:21

NONTOL01.WPD
NEONTOL 2

AUGUST 4, 1999

NONTOLOGY PART I

THE NON-EXISTENCE OF ONE AND THE EXISTENCE OF ZERO

This paradoxical proposition can best be introduced with a quadric diagram:

	ZERO	ONE
EXISTS	EMPTINESS SUNYATA	THINGS
NOT-EXISTS	NOTHING	SAMENESS

Our conventional view of symbolizing is that of the upper right and lower left quadrants. We associate zero with nothing or the absence of things, with non-existence. We associate one (or some higher number) with the presence of things, with existence. However, the inverse symbolization using zero for existence and one for non-existence as in the upper left and lower right quadrants also makes sense if we pursue the following reasoning:

Consider the lower right quadrant: Eddington noted that "uniform sameness is the philosophical equivalent of non-existence." Centuries earlier, before the introduction of zero, Pythagoras concluded that the number one was the correct symbol for nothing. He held that at least two of anything had to be present to confer existence. Eddington required that there be **diversity** in order for there to be existence. Pythagoras required that there be **multiplicity** in order for there to be existence. We may argue that Eddington and Pythagoras were really talking about perception rather than existence. Where there is no difference we perceive nothing. If there were only one color we would not be aware that there was such a thing as color. Only in there being two or more colors does the parameter or attribute of color come into existence or awareness. If there were only one tone (frequency), then there would be no tone. Only when multiple tones are perceived do we become aware of the existence of tone. The same argument may be made for texture, taste, aroma.

REVOLUTN.WPD AUGUST 12, 1999

BEYOND WORLD REVOLUTION

(To the left of Lenin and Trotsky)

Marx called for a social revolution. Einstein called for a cognitive revolution. Neither of these revolutions will succeed until there is first an epistemological revolution. And what would be an epistemological revolution? It would be the ability to perceive the world in an entirely different way. And a different way to perceive is more than a different way of organizing, more than a different way of thinking. It amounts to transcending our traditional subjective point of view and discovering further sensory channels to complement our physical senses. And how is this to be done? It has already been done. Done by those who have learned the transforming power of meditation. Meditation changes the way we perceive everything, the world, ourselves, and each other. Meditation is thus an alternate epistemology, a different way of knowing. Those who have practiced extensively indeed see the world quite differently, and quite contradictory to the way we traditionally have perceived it.

> The real task is not to speculate about the world, but to change it. –Karl Marx

> We shall require a substantially new manner of thinking if mankind is to survive. –Albert Einstein

Also those at the forefront of discovery who have employed traditional epistemology, have in this century concluded that the world as we have known it is not the world as it really is. Penetration into the micro- world, the world of quantum mechanics, has revealed that many of our perceptions are illusions. Everything is far more interconnected than we have ever perceived. Entities we have accepted as distinct are but facets of a single entity. Entities we have accepted as localized in space and time exist far beyond their visible boundaries. Divided entities, whatever their spatial separation, seem to be able to communicate instantly . These and other findings of modern physics closely resemble the nature of things as perceived by some who have achieved understanding from their committment to the epistemology of a meditative practice.

The epistemological revolution taking place, whether from visions in the zendo or from interpretations of accelerator data, requires us to review and revise our ontologies, our axiologies, our theologies, our cosmologies, in short our entire world view. In time revised knowledge will alter our way of thinking and will "trickle down" to our modes of social and political organization. Then we shall have a successful social revolution and a successful cognitive revolution.

On the Night of 99/08/15 I had a dream:

I was at a table with several, discussing various things.

An old Crone who was present, interrupted, and unroling a blank scroll, said in a commanding voice:

"A WHITE PAPER REBELLION"

I didn't understand, and said what does that mean.

A young woman present, condescendingly said,

"It means, Breaking of Ideals"

Oh, an axiological revolution? yes

AREAS899.WPD AUGUST 16, 1999

PROJECT AREAS AUGUST 1999

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

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

FZWICKY.WPD AUGUST 28, 1999

FRITZ ZWICKY

Feb 14, 1898–Feb 8, 1974

Fritz Zwicky came from the canton of Glarus, that part of Switzerland exemplifying the extreme independence and individuality typical of those whose lives are blessed with the presence of towering mountains. Perhaps it is not coincidence that the 16th century monk, Henricus Glareanus, (Heinrich Loris) who took musicology beyond its prescribed and proscribed bounds, and Fritz Zwicky, who did the same for astronomy, both came from Glarus.

Zwicky's contributions were numerous: Identification of supernovae, prediction of dark matter, identification of alternate modes of jet propulsion, designer and manager of the first attempt to place an object in orbit (1946, 11 years before sputnik), and what he felt to be the most significant, morphological analysis, a new way of thinking. And it was Zwicky's new way of thinking that was the infrastructure of all his other contributions.

Today, some 25 years after his death, professionals who derided him during his lifetime, have come to recognize that Zwicky's ideas may have a greater shelf life than had theirs. However, Zwicky was controversial, indeed dedicated to controversy. This not only because his proposals conflicted with conventional ones, but because Zwicky appreciated the value of controversy itself. His credo was that any party-line was stagnating. Disagreements led to deeper insights and heresies led to the destruction of dogmas. But Zwicky paid the price required of heretics: isolation and repudiation. He acquired the reputation of being abrasive and belligerent. But those who knew him saw through this facade, seeing that Zwicky, like Gurdjief, chose shock as a prod to keep awake the otherwise somniferous.

Zwicky thought of himself as a "lone wolf". He would not hear to having disciples. Disciples and lineages destroyed freedom of thought and the power to view the world anew and think about it in new ways. Indeed, the only way one could be considered a disciple of Zwicky would be also to become a lone wolf, not necessarily agreeing with anything he said or did, but continuing the search for meaningful alternatives on one's own. .

I consider those years in which I had the privilege of working with Fritz, to have been the most rewarding of my life. Even though he loudly boasted that he was a lousy teacher, he was a great teacher. Students in his classes complained that Zwicky didn't teach the listed subject but each lecture was on what he was currently thinking about, and unless you already knew all the necessary mathematics, physics, and astronomy, you were left in the penalty pen. True, Zwicky certainly did not exposit ideas entertainingly or simplicitly , but in the sense of example he was a great teacher to those who wanted to learn to think.

Einstein once said that we shall require an entirely new way of thinking if we are to survive. Zwicky added a question mark: He said, "To 'save' the world might take still greater freedom of thought than we are capable of." I believe that Zwicky, struggling to find that freedom, left us a legacy of hope.

Also see 1997 #16

Zwicky repeatedly rediscovered basic truths:
When told they were already known, he would just
"That bastard Parmenides stole my idea"
re apophasis? Inversion

The idea that the center is everywhere
while not ~~explaining~~ interesting the equal value of every opinion
~~emphasizing~~ the importance of there being many opinions
many alternatives, many options

Beginning with Copernicus we find concept
replacing percept

For Zwicky percept's greatest use was in the
~~g~~generation of novel concepts.

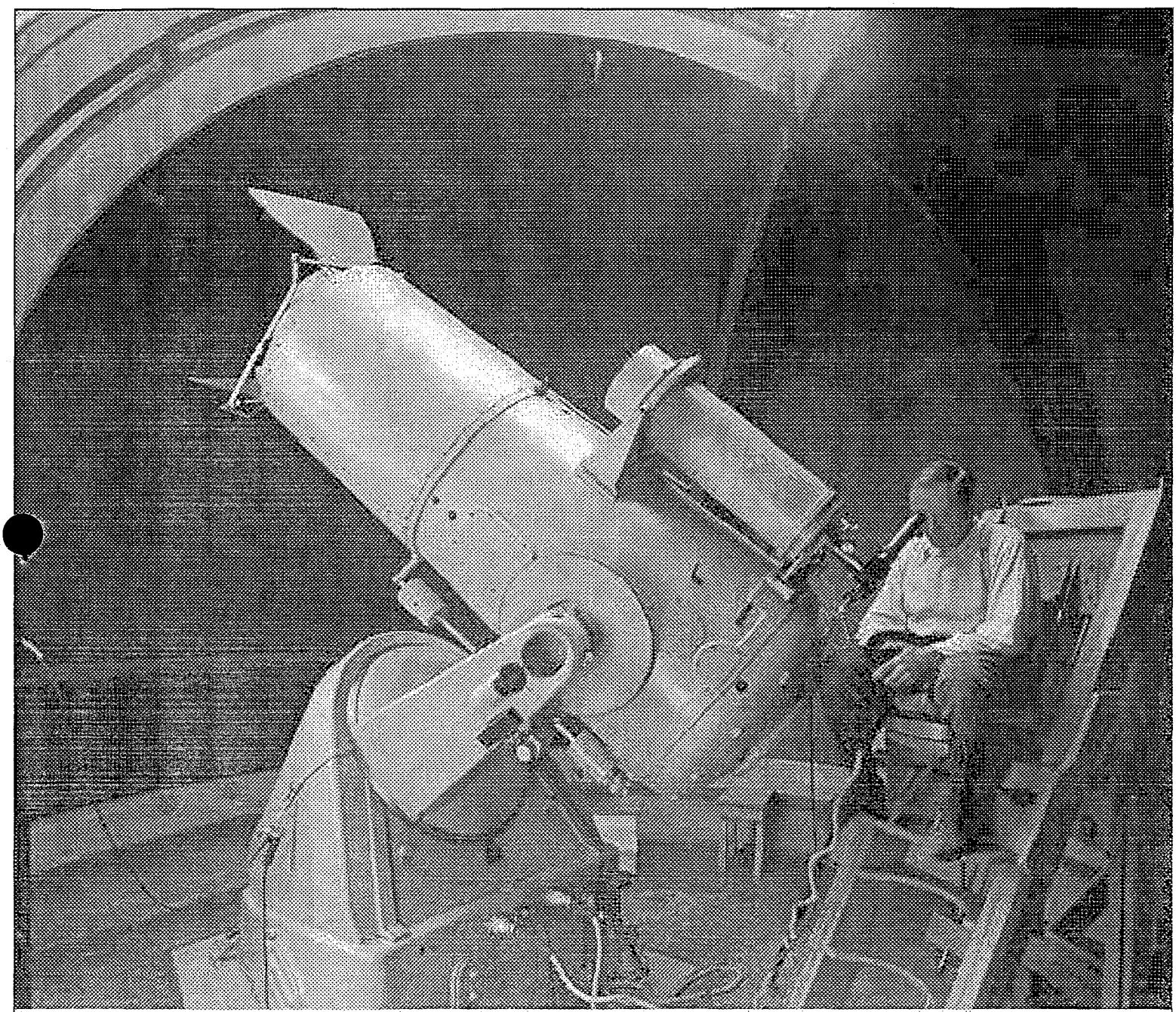
Is not Glarianus work a predecessor of the Morphological box?

Zwicky on washrooms

Zwicky would not form alliances with others who
disagreed with ~~Ortho~~orthodoxy or the "party line" [e.g. Hoyle]
He disagreed with other disagreers — he felt the more options
~~alternatives~~, the more contending alternative,
the more vital would be research and progress.
On the surface This took the form of high competitiveness, but ~~was~~
at a deeper level, was based on the power of emergence being
a function of the degree and extent of variety.

But what seems really original with Zwicky
[cf. Jesus + Hillel] is "go for the totality of solutions"
The box is a "how" — and be all you can be
Eleminate don't select
[aphobhatic selection]

Generate First
Eleminate afterward



FRITZ ZWICKY c 1943
18 inch Schmidt Palomar Mountain
Supernovae Search

August 28, 1999

Richard A. Burch
President
Design Cast Studios, L.L.C.
1245 Center Street
Henderson, KY 42420

Dear Mr. Burch:

I was most pleased to receive the model of the asteroid "Geographos", which you kindly sent. It has been almost 50 years since Rudolph Minkowski and I discovered the faint trace of this object on one of the original Palomar Sky Survey plates. It was an unusual object at the time, but now it is becoming apparent that it has more company than we would care for.

I want to commend your company for the excellent designs you have reached for displaying models of these objects. I feel these models help to make us aware of an important part of the natural order that has but recently entered our consciousness. And it is important that these objects play an increasing role in our cultural concerns. Your models should be in every school and on the desk of every congressman and senator. That might someday prove to have made a great difference.

I would be pleased to be up dated on the availability of future models as they become available.

Sincerely yours,

Albert G. Wilson

ONBOOKS.WPD DECEMBER 7, 1998; AUGUST 30, 1999

BOOKS

Yesterday I again bought some books. There are now over 5000 books here and I have read but few from cover to cover. Yes, it is a reference library and I refer to scores of these books every year, but there must be some other reason for this library. It seems to be about something that many bookophiles have said about libraries, about being surrounded by books. When we are in a library, when we are surrounded by books we are in some sense in the presence of those who wrote them. We feel their thoughts even when we are not actually reading them. It is as though a collection of books creates a thought field that somehow affects the thoughts that come into our minds. We would not think these thoughts were the books not there. And I believe this to be more than symbolic. It is as though the books are living cells and in aggregate become an organism having a mind that communicates to us. Buying a book by a certain author brings the power of his/her mind into the mind of the aggregate, enriching and extending it.

There are many definitions of information, but all seem to hold that information requires some physical substratum for its existence, be it stone stelae, scrolls, books, tapes, disks, or the molecular configurations of a brain. Information can be impressed on sonic or electromagnetic waves and transmitted over space. It can be inscribed in the patterns of fossils or artifacts and transmitted over time. Disembodied information is unknown, but may it not exist in a non physical world such as that of Plato's archetypes? May there not be fields of pure thought containing information radiated both from sources encapsulated in physical form and from sources vibrating in some non-physical platonic space? I feel something like this is valid and that information oscillating between its physcical and non-physical manifestations creates a non-localized entity we call mind. And that there are innumerable minds, not only minds associated with individuals, but collective minds and higher minds of many levels, all radiating thought through space and time. We gain knowledge and wisdom whenever we learn how to access these higher minds.

FRAGCONS.WPD October 22, 1995; August 30, 1999

FRAGMENTATION AND CONSOLIDATION

The breakup of the Soviet Union in 1991, was the result of contending forces of fragmentation and consolidation. The forces of fragmentation won. The unification of Germany in 1989 also involved both the forces of fragmentation and consolidation, the forces of consolidation won. Every week we read both of corporations splitting and of corporate mergers. Why at this time are we seeing diverse results from the simultaneous action of fragmenting and consolidating forces? The usual historical pattern of "departure and return" states that in a given period of time one type of force will dominate. Today, however, is an indecisive period when either force may dominate.

The economist, James O'Toole, who is vice president of the Aspen Institute, analyzes the ingredients of these opposing forces as follows:

Forces of Fragmentation:

- Human egos, urge to power.
- Imperatives of change
- Differences of vision in an era of large opportunity
- Difference of heritage, cultural differences
- Differences of psychological type
- Preservation of identity
- Facilitation of management and control

Forces of Consolidation:

- Human egos, urge to power.
- Imperatives of change
- Lack of vision in an era of small opportunity
- Economic forces, such as advantages of large scale
- Economic needs, such as requirements of large scale

"The basic forces directing fragmentation and consolidation are respectively egalitarianism and libertarianism. From the users' vantage point the desired economic end state for any product or service is abundance and cheapness. It will be a difficult traverse for American industry to reach these goals in the next few years having to operate between the Scylla of competition and the Charybdis of mounting costs. The American political focus on the egalitarian--libertarian issue (read level playing field--deregulation) not only contributes to iterated fragmentations and consolidations, it obscures from us the more significant efficiency and communitarian paths followed successfully by both our European and Asian competitors. We are playing the game with additional self imposed handicaps."

O'Toole includes "Human ego, the urge to power" in both the fragmentation and consolidation lists. The fragmentation ego is that of teen age rebellion, the less mature and experienced wishing their chance at power. The consolidation ego is that of a Napoleon seeking to grasp ever more control and power. The "Imperatives of Change" also included in both lists, depend on whether a single issue in involved, resolved by consolidation, or multiple issues, resolved by fragmentation. [cross dialectic]

USSR 1991

CULTURE → FRAG
ECON → CON CULTURE DOMINANT

GERMANY 1989

CULTURE → CON
ECON → FRAG CULTURE DOMINANT

Iron
~ the Fe watershed
∃ a merge/fragment watershed
dividing when it is more profitable to merge
from when it is more profitable to divest

We are on a cultural "Schwarzschild boundary"

merge ← consolidate | → fragment divest

SCENE: A clearing in the Forest of Phanoses, where Metametheus has taken refuge from the Olympians.
Enter: Dionysius (left stage)

Dion: Metheus, Metheus, what form hast thou taken today to deceive our eyes?
I feel your presence, but know not to whom to speak,
Art thou that owl perched on yonder branch?
Or the hart hiding betwixt the brushes, betrayed by boldsome antlers?
Or the fleeing rodent seeking security in some secret haven?
Tell me, Metheus, this day how shall I know thee?

Perhaps thou art the wind whispering with the leaves,
choosing not to speak but to wait for my silence
so your thought may mingle with mine.

Oh, Metheus, hear me, I have grave news of dire import.
The Goddess, robbed of charism by Zeus,
plans to confront and challenge him,
seeking rightful restoration in the heart of livingkind.
Help me dissuade her from such folly.
You and your brothers well know the cunning and treachery of Zeus.
Even now, upon Zeus' command,
wretched Prometheus hangs on lofty Elbruz
skewered and gnawed by vile vultures.
Hear me, Metametheus, what counsel may I take her,
Lest she suffer some dreadful fate?

Meta: Stand, Dion, before the ancient oak at the clearing's end.
That I may more clearly hear that which frightens thee.
If you fear for the Goddess, waste not your feeling.
Kairos is with her, the time is ripe for this confrontation.
She shall overcome the arrogant usurper
whose tribe has ruled the earth for ages too long.
You wish to take her counsel?
Rather take yourself, be at her side as she mounts Olympus
Remain with her as she enters the hall of Zeus
It will be that your presence, not your advice,
will help turn the day.
Go now and be assured. The time has come.

Meta: You are presumptious to try to obtain the knowledge that the dead possess [without first dying]

You have arranged that you take care of her while she is incarnated, and she takes care of you when you are incarnated.

CLOUDS

Tomorrow is the date of the crossing when the sun moves into its southern lobe, and the clock and sundial are in agreement. A tropos, the beginning of a forgotten season lost between Summer and Autumn. The magical time of the Harvest Moon, even the beginning of a new year in one culture [Rosh Hashana]. Today I saw the first red leaves on a maple, at least the plant world recognizes what humans have forgotten. And today I sat by a fountain and watched the clouds as they changed their forms. A cloud can become anything, it has boundless potential. Is this what the Buddhists mean when they say "Form is emptiness"? But the forms of clouds are not the forms of thought, they are the forms of feeling. Being like music which also contains the forms of feeling, just as mathematics contains the forms of thought, and silence contains the forms of recognition. As I looked at the white clouds and the blue sky, I thought of those pictures the astronauts have taken of the earth from the distance of the moon. The earth a small blue and white disk, the same blue and white we see when we look up. The clouds divide the inside from the outside, they are the fulcrum of symmetry between earth and cosmos.

Sometimes I also wonder about life spans. Seeing clouds resting on a mountain top causes me to reflect that we are able to simultaneously view clouds whose lifetime is measured in hours and mountains whose lifetime is measured in millions of years. And when we do the numbers, we find that the lifetime of a cloud is to the lifetime of a human as the lifetime of a human is to the lifetime of a mountain. So our lives form a bridge that allows us to experience not only the small and large but also the brief and the long lasting. We live in a temporal zone that has been defined by Herakleidos on one side and by Parmenides on the other. Change is only perceived against the backdrop of the changeless.

See also 2000#63

The lifetime of a cloud is very short
clouds contain few elements

The lifetime of a mountain is long
mountains contain many element i.e. more variety

Clouds contain lighter elements mostly H, O
Mountain contain heavy elements

How is lifetime related to density?
$\tau \propto \rho^{-1/2}$?

Clouds not as fulcrums, but as lenses
Indeed, lenticular clouds are felt
to have special properties - having
even been confused for UFO's,
flying saucers, which they resemble.

Lenticular clouds are ice clouds.

CONTOL01.WPD SEPTEMBER 8, 1999

COSMOS TO CONSCIOUSNESS

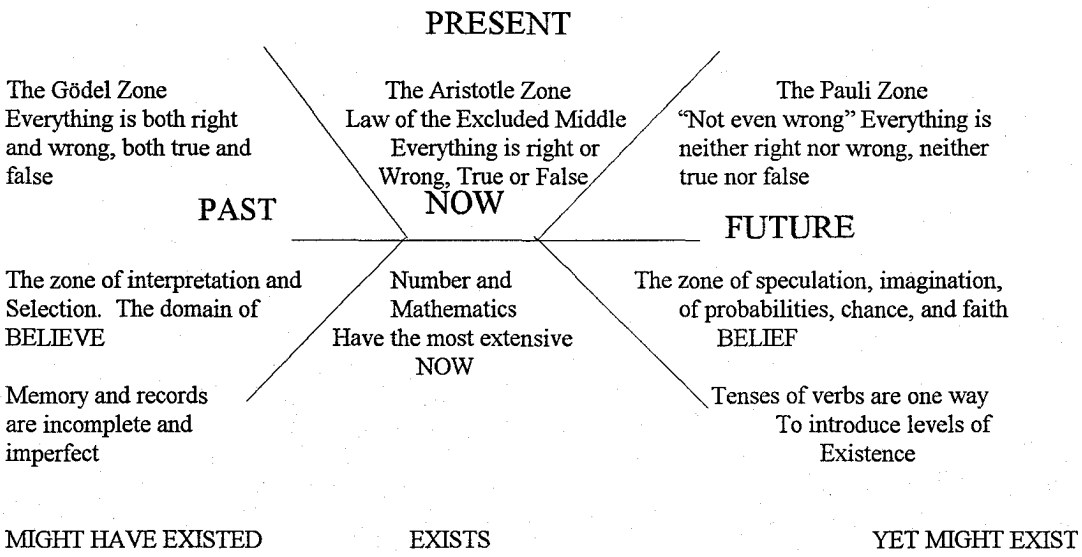
AXIOM 1.
The cosmos is here taken to be the totality of all that in any sense exists. It is all that there is. All parts of this cosmos are interconnected, making the cosmos a unity, a plenum, a continent, no islands. In addition no part of the cosmos exists independently or independent of the other parts. *[This implies that Brahman or whatever existed prior to cosmos did not exist in the same sense that cosmos exists. But that with cosmos now existing, Brahman becomes part of and one with what it may have created.]*

AXIOM 2.
The cosmos may be divided into two parts which we shall call Subject–Object, such as I–Thou, observer–observed, knower–known. However, this dichotomy may be made in many ways. What is included in Subject and what is included in Object depends on the manner in which cosmos is "sliced" into the two parts. But what is not included in Subject is Object, and what is not included in Object belongs to Subject. Here the whole (cosmos) is the sum of the two parts. Further, each division or slice creates a set of ontologies.

AXIOM 3.
A particular "bridge" between the two parts of an ontological set which selects a specific member of the set is called an epistemology. Each epistemology thus describes a specific ontology that belongs to the particular ontological set created by the original Subject–Object slice.

AXIOM 4.
Each division or slice also creates a particular species of consciousness. Thus there are many possible conscious nesses each resulting from a particular dichotomy. And each governing the epistemologies that may be used.

THREE ZONES OF TIME, LOGIC, AND EXISTENCE



HUBBLE02.WPD SEPTEMBER 15, 1999

THE HUBBLE PARAMETER AND FUNDAMENTAL CONSTANTS

It has been shown[1] that a joint implication of the Heisenberg and Schwarzschild inequalities is that the average rate, $\Delta V / \Delta T$, in increase of volume of an expanding mass system is greater than or equal to $\psi = G\hbar/c^2$. That is,

$$1) \qquad \Delta T \leq \frac{\Delta V}{\Psi} = \frac{V_f - V_o}{\Psi}$$

where $\mathbf{V_f}$ is the final volume and $\mathbf{V_o}$ is the initial volume. Interpretating ΔT as the time elapsed since the volume was equal to the initial value $\mathbf{V_o}$, a bound on the maximum age of the system is given by equation 1).

First, consider the case of the initial volume being that of the Planck particle,

$$V_o = \left(\frac{G\hbar}{c^3}\right)^{\frac{3}{2}}$$

which has the $\log_{10}$ value of -98.374635, and the final volume being that of a baryon,

$$V_f = r_e^3$$

which has the $\log_{10}$ value of -37.650204. $\mathbf{V_o}$ is negligible with respect to $\mathbf{V_f}$, hence,

$$\Delta T \leq \frac{r_e^3}{\Psi}$$

Using the $\log_{10}$ value, -55.106271, for ψ, gives $\log_{10} \Delta T = 17.456057$ seconds as the maximum time or age since the expansion of the system. This is equivalent to 9.056387 billion years.

What is of interest here is that this is remarkably close to the age of the universe from the big bang to the present. From determinations of the Hubble parameter using cepheids, Wendy Freedman et al find for the age since the big bang a value of 9.18 billion years (± 10%)[2]. Kirshner using type II supernovae derives a value of 8.93 billion years.[3]

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[1]See Scraps 1995 #82 and 1996 #27

[2]Physics Today, August 1999, p20

[3]Physics Today, May 1996, p19

The following table compares the Cepheid, Type II supernova, and "Heisenberg-Schwarzshild" values:

	CEPHEIDS	II SUPERNOVAE	"H-S"
AGE OF SYSTEM	9.18×10^9 years	8.93×10^9 years	9.056387×10^9 years
HUBBLE TIME	13.77×10^9 years	13.40×10^9 years	13.58×10^9 years
HUBBLE CONSTANT	71±7 km/s/mpc	73±7 km/s/mpc	71.977 km/s/mpc
UNCERTAINTY	10%	15%	< 1%

It must be repeated here that the H-S determination is for a hypothetical universe, the others for the "Hubble Universe".

The H-S derivation led to a value of $\log_{10}\Delta T = 17.456067$ seconds. Converting from seconds to Planck time units, t_o, ($\log_{10} t_o = -43.268366$ seconds) gives $\log \Delta T = 60.724433$, which is a dimensionless quantity. One third of this value is 20.241477 which is equal to $\log_{10}\sqrt{(\alpha\mu S)}$. Where α is the fine structure constant, μ is the ratio of proton to electron mass, and S is the ratio of coulomb to gravitational force. We conclude:

$$\Delta T = (\alpha\mu S)^{3/2}\, t_o \text{ seconds}$$

Is this a fractal invariant, isomorphic between different scales, or a just a highly improbable numerical coincidence? It raises many questions!

AREA1099.WPD OCTOBER 31, 1999

PROJECT AREAS OCTOBER 1999

THE ULTIMATE TEST OF TRUTH IS ITS INDEPENDENT REDISCOVERY

I. VERGES: THE INTERFACES

A verge is where a difference occurs
A verge is where dialectics meet
All existence occurs at a verge
All innovation occurs at a verge
There are four kinds of verge:
- The meeting of two somethings
- A something between two nothings
- A nothing between two somethings
- The meeting of two nothings

Life and humanity exist at the intersection of multiple verges.
- Earth (solid) and Space (empty)
- Heaven and Hell
- Force and Matter

Some particular verges:
- The Taoist verge (Represented/Unrepresented)
- The Zarathustra verge (Ahura Mazda/Ahriman)
- The Dionysus/Apollo verge (Heart/Intellect)
- The Nagarjuna verge (Nothingness/Non-existence)
- The Male/Female verge(Make rules/Make judgements; In command/Who belongs)
- The "Eden" verge (Zarathustra/Harmony; Good and evil/Life)
- The "Future and its Enemies" verge (Planning/iterated random)
- The "Alphabet and the Goddess" verge (signs/images)
- The Inner space/Outer space verge (recognition/experience)
  - External experience brings to awareness that which already exists internally i.e. brings recognition. Our coherence with the outer world depends on recognition

II. The Garden of Eden
- Four Characters: God, Serpent, Adam, Eve
- Four Choices:
  1) Obey/Disobey
  2) Which tree
     a) Good and Evil, Zarathustra
     b) Life, the Harmonious world
  3) a) was selected, whom to serve Ahura Mazda or Ahriman
  4) Is nature Ahura Mazda or Ahriman
     If Ahura Mazda then we are back to 2) b), if Ahriman then Nature is an enemy to be overcome, conquered, and controlled.

Fertile Verge is a term used by ~~Samuel~~ Daniel Boorstin to represent America

SELECT01.WPD SEPTEMBER 17, 1999

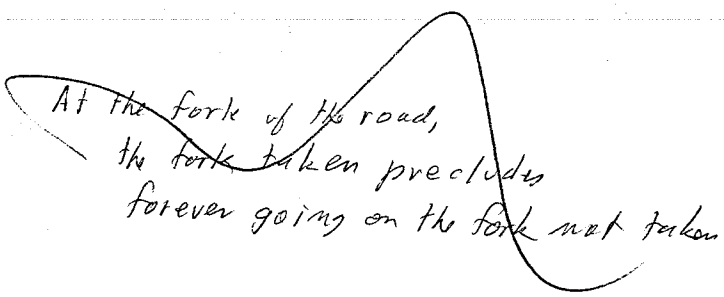
Those Not Selected

Natural Selection–we are told picks those best fit to carry on the agenda. But it is not natural selection, it is auto selection. These selected themselves, yet they tell us that God chose them, or that the processes of nature selected them over others. But when we seek the identity of the selector, we discover that it is not God but they themselves who did the selecting. But it is not only that they select themselves as the agents, but they also selected the agenda. And the agenda they have selected is the Principle of Plenitude–conversion of all into their own likeness. This is homogenization! And prunes the branches from the tree, leaving a bare pole. Or at best terminates deviation while permitting some variation.

We know that self-reference is a process initiating existence. Self-selection seems naturally to follow self-reference. It thus seems we must find and support that which came into existence by some process other than self-reference. Those of a different origin may not be addicted to the Principle of Plenitude, but be dedicated to an agenda of proliferation of diversity. Only in diversity, the flourishing of many species and agendas, may the tree become a tree. Meantime, we must cherish our differences. We must unite with those rejected, with those decreed to being of no use to the agenda of the selected ones. We must seek alternate agendas to the Principle of Plenitude. For it has been said that Brahma created the world and its theme in order to listen to all the possible variations on the theme.

It is the responsibility of those rejected, those scorned, those disavowed, and those betrayed not to seek to destroy that which exists, but to seek and establish alternatives that will co-exist in symbiosis and harmony. If the agenda of the Principle of Plenitude with its adherents cannot fit into such a ensemble of diverse agendas, then according to workings of their own agenda they become extinct.

This scrap
My reaction to being rejected



HUBBLE03.WPD SEPTEMBER 19, 1999

THE HUBBLE PARAMETER AND FUNDAMENTAL CONSTANTS OF PHYSICS

REVISED

Number is the infrastructure of everything. –Pythagoras
As above, so below. –Hermes Trimegistius

From the Heisenberg and Schwarzschild inequalities it can be shown that,

$$\frac{V}{T} \geq \frac{G\hbar}{c^2} = cl_o^2 = \frac{l_o^3}{t_o}$$

where V has the dimensionality [L^3], T has dimensionality [T], G, ħ, and c are respectively the gravitational constant, Planck's constant, and the velocity of light; l_o is the planck length and t_o the planck time. Hence,

$$\frac{T}{t_o} \leq \frac{L^3}{l_o^3}$$

In particular, if L is taken equal to r_e, the electron radius,

$$T \leq \frac{r_e^3}{l_o^3} t_o = (\alpha \mu S)^{\frac{3}{2}} t_o$$

where α is the fine structure constant, μ the proton to electron mass ratio, and S the coulomb to gravitational force ratio.

The $\log_{10}$ value of T becomes 17.345065 seconds, or $\log_{10}$ 9.956955 years, which is equal to 9.056387 billion years. The interesting thing about this maximum value of T is that it is close to modern approximations of the time since the big bang, or "age of the universe". Indeed, if we take recent values derived from observations of 800 cepheids in 18 galaxies out to 25 megaparsecs[1] , the age of the universe comes out to be 9.18 billion years, (with a Hubble time of 13.77 billion years). This value is derived from a Hubble parameter = 71±7 km/sec/mpc.[1] When the above value of 9.056387 billion years is converted to a Hubble parameter, it turns out to be 71.977 km/sec/mpc. If this is not just a numerical coincidence, and the present value of the Hubble parameter is indeed 71.977 km/sec/mpc, then there are some disturbing implications.

Pursuing this line of investigation, we find that the above value of T arises also from other levels of the inequality.

$$T \leq \frac{r_e^3}{l_o^3} t_o; \quad T \leq \frac{l_a^{\frac{3}{2}}}{l_o^{\frac{3}{2}}} t_o; \quad T \leq \frac{l_U}{l_o} t_o$$

where l_a is a stellar radius, and l_U is the radius of the Hubble universe. In each case the value of T is 9.056387 billion years.

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[1]Key Project, Wendy Freedman et al. Physics Today Aug 1999, p 19

THIS IS AN OBSERVATIONAL
NOT A ~~THEORETICAL~~ RESULT
cf. BALMER + BOHR

PUZZLE2.WPD

PIECES OF THE PUZZLE JUNE 1999; OCTOBER 1999

1. DYADS
2. DIALECTICS
   - Homogenization//Diversification
   - Stability//Change
   - Realization//Potententialization [The Great Dialectic]
   - Materialization//Etherialization
3. SPACES
   - P-SPACE POSITION or PHYSICAL SPACE
   - H-SPACE PATTERN, ARCHETYPE, GENOME SPACE
   - B-SPACE BONDING, CONSOLIDATION, MERGER SPACE
   - O-SPACE OPTIONS, ALTERNATIVES, DECISION SPACE
   - S-SPACE INFRASTRUCTURE, GROUND SPACE
4. FOUR
5. PYTHOGOREAN COSMOLOGY
   - The Planck value for the Hubble parameter
   - Cosmology without telescopes
   - The four quadrants
6. TIME
7. CORTEZ//MOCTEZUMA
8. NODES//LINKS
9. ATHROISMATICS
   - PARTS//WHOLES
10. TOP DOWN//BOTTOM UP
    - GOD//REDUCTIONISM

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:

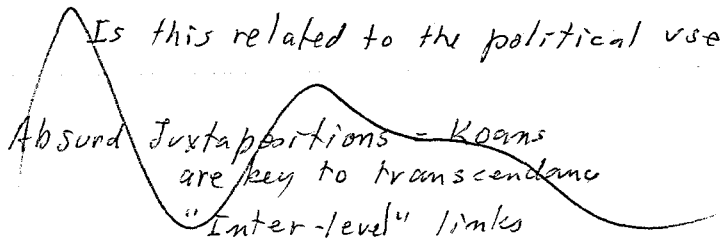
Visualize a prolate spheroid. Allow this spheroid to spin rapidly about one of its minor axes. What will be the resulting apparent "outer" figure? After reflecting the apprentice comes up with: The outer figure would be an oblate spheroid having the diameter of the prolate spheroid's major axis. Very 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?

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


Is this related to the political use of the word spin?
yes - altering linkages
Absurd Juxtapositions = Koans
are key to transcendance
"Inter-level" links

HUBBLE5a.WPD NOVEMBER 14, 1999

COSMOS–BY THE NUMBERS INTRODUCTION

Recent observations of Cepheid variables in distant galaxies[1] and measurements of distant type II supernova[2] converge on a value close to 72 km/sec/mpc. If further observations confirm this value, then there is a strong possibility that the Hubble parameter, H_o, is related to the fundamental constants of physics by the relation,

$$H_o^{-1} = (\alpha\mu S)^{3/2}\sqrt{\frac{G\hbar}{c^5}}$$

where α is the fine structure constant, μ the proton to electron mass ratio, S the coulomb-gravity force ratio, G Newton's constant, $\hbar$ Planck's constant, and c the velocity of light. The value of H_o^{-1} given by this equation is 71.977 km/sec/mpc or 10 ^ 17.456067 seconds. This corresponds to an age of 9.056 billion years or a Hubble time of 13.584 billion years.

While it is not surprising that the value of the Hubble parameter should depend on the values of the fundamental physical constants, it is disturbing, since it is believed the constants involved do not vary with time, that the equation implies a constant Hubble time and hence an unaging universe. We conclude either

1) The original assumption of the correctness of the equation is wrong
2) One or more of the fundamental may constants vary
3) The models relating Hubble time to the age of the universe are wrong
4) The interpretation of redshifts as purely velocity shifts is wrong.

The validity of a model depends on the number of observations explained and on there being a consistent relation or pattern between all the observational check points. The above equation is consistent with all the observations involved, but is not consistent with present interpretations of those observations, particularly those relating Hubble time to an age and possibly the doppler interpretation of redshifts. The following tables show the many ways in which the particular value $\log_{10}(H_o^{-1}) = 17.456067$ sec links other objects, including the Planck particle, baryons, stars, and the universe itself. But every good model should also make predictions by which it can be further tested. This equation and others related to it predict the existence of certain astronomical objects whose existence, if confirmed, would contribute to the solution of other problems. These predictions plus the extent and accuracies of the overall pattern involving this value of H_o^{-1} suggest the above equation and its implications be investigated further.

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[1]Wendy Freedman et al. Physics Today August 1999, p19ff 71±7 km/sec/mpc

[2]R. Kirshner ApJ 438 L17 1995 73±7 km/sec/mpc

THIS IS AN OBSERVATIONAL
NOT A THEORETICAL RESULT

COSMOS– BY THE NUMBERS PART I

OBJECT	LENGTH	VALUE (cm)	TIME	VALUE (sec)	σ	γ	δ	T (sec)
Planck particle	l_o	-32.791545	t_o	-43.268366	0	3/2	∞	17.456067
W particle	l_w	-22.670802	t_w	-33.147623	1/4	5/4	6	17.456067
baryon	r_e	-12.550068	t_b	-23.026899	1/2	1	6/2	17.456067
Q particle	l_q	-2.429328	t_q	-12.906151	3/4	3/4	4/2	17.456067
star	l_a	7.691310	t_a	-2.785412	1	1/2	3/2	17.456067
star cluster	l_c	17.812049	t_c	7.335329	5/4	1/4	6/5	17.456067
Universe	l_U	27.932888	t_U	17.456067	3/2	0	2/2	17.456067

NOTES:

1) The value of T = 17.456067 sec is equivalent to a Hubble parameter of 71.977 km/sec/mpc
2) The time values, t_i, are the light travel time = l_i / c
3) σ_i is the exponent of l_i / l_o or of t_i / t_o ; γ_i is the exponent of $(\alpha\mu S)$
4) $l_i = (\alpha\mu S)^{\sigma i}\, l_o$; $t_i = (\alpha\mu S)^{\sigma i}\, t_o$; $T = (\alpha\mu S)^{\gamma i}\, t_i = (\alpha\mu S)^{\sigma i+\gamma i}\, t_o$
5) $\sigma_i + \gamma_i = 3/2$; $\delta_i = 1 + \gamma_i / \sigma_i$; $\sigma_i \cdot \delta_i = 3/2$
6) If σ represents scale and δ represents dimension, then [scale]·[dimension] is an invariant = 3/2.
7) Values: c = 10.476821 cm/sec
   $(\alpha\mu S)^{1/4}$ = 10.120738
   $(\alpha\mu S)^{1/2}$ = 20.241477
   $(\alpha\mu S)^{3/4}$ = 30.362216
   $(\alpha\mu S)$ = 40.482954
   $(\alpha\mu S)^{5/4}$ = 50.603690
   $(\alpha\mu S)^{3/2}$ = 60.724431
   1 L.Y. = 17.975932 cm

$$T \le \left(\frac{t_i}{t_o}\right)^{\delta_i} t_o \qquad \frac{t_i}{t_o} = (\alpha\mu S)^{\sigma_i}$$

$$\frac{T}{t_o} \le \left(\frac{t_i}{t_o}\right)^{\delta} = \left[(\alpha\mu S)^{\sigma}\right]^{\delta} = (\alpha\mu S)^{3/2}$$

$$\frac{T}{t_i} = (\gamma\mu S)^{\gamma_i}$$

$$\frac{T}{t_i} \cdot \frac{t_i}{t_o} = (\alpha\mu S)^{\gamma_i} \cdot (\alpha\mu S)^{\sigma_i} = (\alpha\mu S)^{\sigma+\gamma} = (\alpha\mu S)^{3/2}$$

TRIAPHOR.WPD NOVEMBER 16, 1999

TRI-APHORISMS

PART I ALLITERATIVE TRI-APHORISMS

A ANONYMITY ASSURES AUTONOMY
B ~~BOREDOM~~ BELLIGERENCY BEGETS BELLIGERENCE
C COMPROMISE CATALYZES CORRUPTION competition condones callousness
D DOUBT DILUTES DOGMA
E ETERNITY EXTINGUISHES EXISTENCE
F FACTS FRUSTRATE FAITH
G
H HOMOGENIZATION HUMILIATES HUMANS
I IRRESPONSIBILITY INVALIDATES INGENUITY
J
K
L LOVE LEGITIMATIZES LUST
M MONEY MANIPULATES MORALITY
N NECESSITY NEGATES NIHILISM *
O ORDER OBSTRUCTS OPENNESS *
P PRAGMATISM PROSCRIBES PERFECTION *
Q QUALITY QUENCHES QUANTITY *
R REPETITION REINFORCES REALITY REALITY REQUIRES REPETITION
S SERENITY SANCTIFIES SOLITUDE * REPETITION REFRESHES REALITY
T THOUGHT TRUNCATES TRUTH
U UNIFORMITY UNDERMINES UNCERTAINTY *
V VANITY VERIFIES VAPIDITY
W
X
Y
Z ZEN ZAPS ZEALOTS

* These aphorisms are invertible. "The opposite of every great truth is also a great truth." –Plato

COSMOS– BY THE NUMBERS PART II

OBJECT	LENGTH cm	TIME	VALUE (sec)	σ	γ	δ	
Planck particle 0	-32.791545	t_o	-43.268366	0	3/2	∞	
particle 1	-27.731171	t_1	-38.207992	1/8	11/8	12/1	
particle 2	-22.670802	t_2	-33.147623	1/4	5/4	12/2	
particle 3	-17.610433	t_3	-28.087254	3/8	9/8	12/3	
baryon	-12.550068	t_4	-23.026899	1/2	1	12/4	
particle 5	-7.489695	t_5	-17.966516	5/8	7/8	12/5	
Tritone particle 6	-2.429328	t_6	-12.906151	3/4	3/4	12/6	
object 7	2.631043	t_7	-7.845778	7/8	5/8	12/7	
neutron star 8	7.691310	t_8	-2.785412	1	1/2	12/8	
max star 9	12.751781	t_9	2.274960	9/8	3/8	12/9	
star cluster 10	17.812049	t_{10}	7.335329	5/4	1/4	12/10	
galaxy 11	22.872519	t_{11}	12.395698	11/8	1/8	12/11	
Universe 12	27.932888	$T=t_{12}$	17.456067	3/2	0	12/12	

$(\alpha\mu S)^{\sigma}$ $\sigma = 1/8$ 5.060369 $\sigma = 1/4$ 10.120738 $(\alpha\mu S)^{\sigma i}\ t_o = t_i$ $c = 10.476821$

3/8 15.181107 ½ 20.241477 $(\alpha\mu S)^{\gamma i}\ t_i = t_{12} = T$ $l_i = c \cdot t_i$

5/8 25.301845 3/4 30.362216 $(\alpha\mu S)^{\sigma i+\gamma i} = t_{12} = T$ $T = (\alpha\mu S)\ r_e/c$

7/8 35.422583 1 40.482954 $\sigma_i + \gamma_i = 3/2$ $T = (\alpha\mu S)^{3/2}\sqrt{(G\hbar/c^5)}$

9/8 45.543321 5/4 50.603690 $\delta_i = 1 + \gamma_i/\sigma_i$ $H_o^{-1} = T = 71.977$ km/sec/mpc

11/8 55.664059 3/2 60.724431 $\sigma_i \cdot \delta_i = 3/2$

NEONTOL1.WPD

November 18, 1999
PART II 2000 # 69

EXCLUDING THE EXCLUDED MIDDLE PART I

Aristotle's Law of the Excluded Middle has not only dominated western logic in the sense that a proposition is either True or False, but has conditioned cultural thinking to frame options in terms of two opposing either/or possibilities. Hence we have not only true/false, but good/evil, guilty/not-guilty, top down/bottom up, exists/doesn't exist,..., even two party political systems. We might even say that part of the difficulty we have had with the particle/wave dyad of quantum mechanics derives from the excluded middle way of thinking. (One must not overlook, however, the influence of Zarathustra's deities, Ahura Mazda/Ahriman, in this dyadic thinking. Aristotle doesn't get all the credit.)

An ontological example of this dyadic framing is the chance vs. necessity option. Is the universe structured on a causal-deterministic base or on a random-open ended base? Is there such a thing as free will, purpose, intent, τελος, or does the random/causal, chance/necessity dyad cover it all?

We might begin our liberation from the A to Z, Aristotle to Zarathustra, universe by inserting **both** and **neither** into every dyad. Ontologically, we would then say that the universe is both causal and open ended, or that it is neither. The **both** option leads to the formation of models consistently containing determined domains and free domains. The **neither** option requires us to seek hitherto unimagined parameters. For example, in the **both** option we might consider the universe to be like a set of Russian matroshka dolls or Chinese nested boxes or even a Burgess shale in which alternate dolls, boxes, or layers are domains of choice then no-choice. Another model would be based on alternate periods of time in which there is choice, then no-choice, then choice, no-choice, etc. The **neither** option would eschew matroshka dolls, nested boxes, Burgess shales, and seek some undiscovered parameters that would demonstrate that the chance/necessity dyad is illusory to begin with, or perhaps similar to the second law of thermodynamics' increasing entropy, the universe is evolving in the direction of increasing determinism, decreasing options, or vice versa, etc.

One immediate result of abandoning an Aristotelean approach to ontology would be the putting to rest some of the contentions between science and religion. While science would describe the deterministic domains of the world, religion would have the responsibility to derive decision making criteria for the domains of choice. Another result of giving up the excluded middle would be allowing there to be more than one kind of truth and more than one kind of false; ["It's not even wrong" –Pauli]; and allowing more than one kind of existence, and more than one kind of non-existence, all such notions that are nonsense to Aristotelean thinking.

Perhaps one answer to Einstein's challenge: "Humanity must find a new way of thinking if it is to survive", is to purge the excluded middle not only from our logic but from all of its intrusions into our culture.

St. Thomas Acquinas found Aristotle
compatible with church teaching,
because it was already based on the Persian - Hebrew
dyadic concepts of Zarasthustra.

MATH01.WPD December 14, 1999

see also 99#7, #8 #56

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

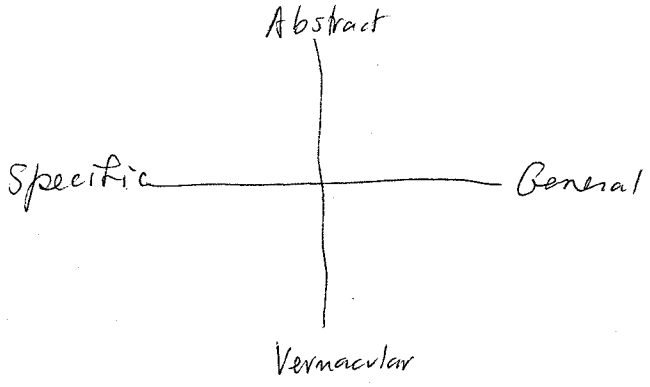
For example, the universe is a fractal in that it exhibits the same patterns on different scales. Thus exhibiting a certain type of symmetry, or even economy. It is the gaps, the nothingness, that give existence to the discrete. The content of non-sameness that gives existence to patterns. Thus the discrete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

The approach of mathematics is to seek the most {abstract / general / comprehensive} formulation possible. Everything must be regarded as a special case.

Math works because it deals with levels of abstraction that reflect the general - what Einstein calls "The thoughts of God". Mathematics seeks the texture of God's Thought



Mathematics is a tool extending our powers to explore, like telescopes and microscopes. It both discovers and creates existence. It lies on the verge between creation [invention] and exploration The verge is called recognition.

In a list of famous mathematicians from 600 BCE to the present only three women were listed: (of 182 mentioned)

Gödel not listed

Marie Emmemond Camille Jordan 1838-1922

Lovelace not mentioned

Sonya Kovalevski 1850-1891

Emmy Noether 1882-1935

Diophantes

Pythagoras 580-496 BCE 84

Thales 624-547 BCE

Yogi Berra put geometry & counting together in a new way!

Do you want your pizza cut into 4 pieces or 8 pieces?

Better make it four, I don't think I can eat 8.

$\sqrt{2}$ effected a divorce between arithmetic and geometry

See also 1999
#7, #8, #55

ATHMATH.WPD December 31, 1999

MATHEMATICS AND ATHROISMATICS

Mathematics is based primarily on various abstractions derived from quantity (number) and measurement (scale and dimension) and their multiple relations to one another. Athroismatics is based on various abstractions of the relations between parts and parts, parts and wholes, and wholes and wholes. While the abstractions derived in mathematics overlap those of athroismatics, there are many distinctive domains.

Some of the areas peculiar to athroismatics include:

- Boundaries
  - Interfaces
  - Verges
  - Watersheds
  - Limits
- Dyads
  - Opposites
  - Symmetries
  - Duals
  - Dialectics
- Triads
  - Nodes, Links, Traffic, cargo
- Containments
  - Whole ⋑ Parts
  - Part ⋑ Whole
  - Wholes ⋑ Wholes

MUTUALITIES

- Relations
  - Horizontal
  - Vertical

Loops
Regressions
Mutualities

- Processes
  - Repetition
  - Iteration
  - Recursion
  - Regression
- Logics
  - Aristotelean
  - Quadric
  - Nagarjunian

Metataxis
Order, Organization

FATHREAS.WPD

December 31, 1999

See also 2001 #28

FAITH AND REASON

Michael Dertouzos (Technology Today Jan/Feb 2000, p28) calls for a rectification of the "Enlightenment Bug", the 300 year old split between the domains of reason [science], faith [religion], and their interface [humanism]. He calls our attention to the fact that this bug is far more serious than any purely technological bug, such as Y2K. And most disastrously, has placed humankind's three cultural possessions into spurious adversarial confrontations with one another.

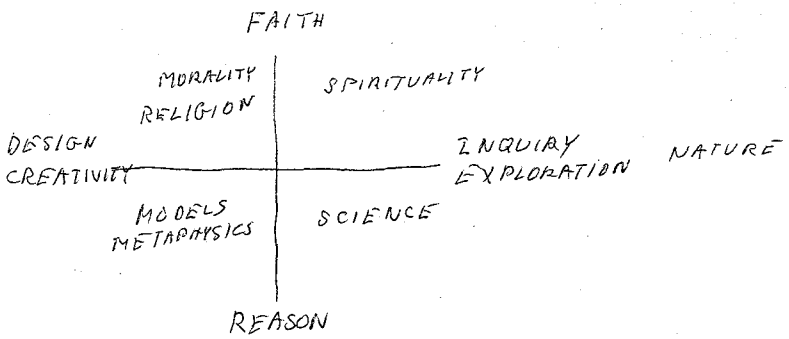
I agree with Dertouzos' caveat and hold that at the end of the 20th century we have come to a threatening impasse. While the Enlightenment liberated reason from the dogmas of faith, with resulting scientific and technological advances, Faith was discredited by an inappropriate attack employing reason's tools of empiricism and logic. What was not recognized was that each domain had its own epistemology and resulting ontology. However, aspects of their respective epistemologies are the same and from these commonalities we can construct an integration.

First, both reason and faith use the technique of hypothesis formulation and testing. Hypothesis formulation in both domains involves imagination, imagining a reality which is to be tested. But it is in the testing of their hypotheses that the difference between reason and faith lies. Science [reason] tests its hypotheses inductively empirically against the natural or objective world. If its surmises consistently fit, then they are adopted as contributions to a description of physical reality. Faith, on the other hand, tests its hypotheses by their affect on the attitudes, behaviors, and subjective essences of ~~persons~~ individual humans. If its surmises result in compassionate, inspired and happy persons, then they are held to be efficacious. moral, beauty

The problems arise when those hypotheses which pass their tests, in either domain, are taken as being "truth". The concept "truth" implies not only possession of universal validity but possession of sole validity,–all differing hypotheses are false. Holding that something is truth brings closure and finality.

We conclude asserting that the conflict between reason and faith is a pseudo conflict. And that instead of assaults upon each other's present holdings, both should ~~devoid~~ divest themselves of their presumptions of truth and pursue refinements and innovations in their respective missions, renouncing finalities, risking ongoing openness.

It should be further remarked that in its general form, Gödel's Incompleteness Theorem places limits on the reaches of reason. There is much that may be valid in the physical and natural worlds that cannot be attained per reason or through the epistemology of science. We might surmise that the same is true of every epistemology. None is adequate alone to comprehend the cosmos.



WHERE DO MORALITY AND METAPHYSICS BELONG