# SCRAPS
# 2005

COSCUR2.WPD January 24, 2005

# COSMIC CURIOSITIES PART II

| VALUES MEASURED ON EARTH | ROOTS OF THE RECURSIVE EQUATION $A_{n+2} = 10\,A_{n+1} - 10\,A_n$ |
|---|---|
| $\log_{10}(\alpha\mu) = 1.127074$ | $q = 5 - \sqrt{15} = 1.1270166..$ |
| | $p = 5 + \sqrt{15} = 8.8729833...$ |
| $\log_{10} S = 39.355880$ | $p^2/2 = 5(4 + \sqrt{15}) = 39.364917$ |

Where $\alpha$ = the fine structure constant
$\mu$ = the proton/electron mass ratio
S = the coulomb/gravity force ratio
$= \hbar\alpha c/Gm_e m_p = \alpha\mu\, m_o^2/m_p^2$

Explicit Formula:
$A_n = (p^n - q^n) / (p - q)$
$(p + q)^n = (p \times q)^n = 10^n$

$\log_{10}(\alpha\mu) - q = 0.000057$ $\log_{10}(\alpha\mu)/q = 1.000051$

$p^2/2 - \log_{10} S = 0.009035$ $p^2/2 \log_{10} S = 1.000230$

see 2003#40, 2004#39, 2004#57

## TWO TERRESTRIAL CYCLES

| | | Value in seconds | $\log_{10}$ value in seconds |
|---|---|---|---|
| T | The Schuster Period | 5060.24 | 3.704171 |
| D | The mean solar day | 86400.00 | 4.936514 |

The Schuster period is determined by the mass M and radius R of the earth and is the time period in which a satellite would circle a spherical earth at its surface were there no atmosphere or other obstructions. The above values are derived from a mean earth radius $6.371000 \times 10^8$ cm and Earth mass of $5.9737 \times 10^{27}$ g [Cox, Astrophysical Quantities 1999];$G = 6.674215 \times 10^{-8}$ $cm^3/g\ s^2$ [Physics Today July 2000 p 21]

$$T = 2\pi \sqrt{(R^3/GM)}$$

Note that $\log_{10}(T)/\log_{10}(D) = 0.750361$

which to about 4 parts in $10^4$ is equal to 3/4.

Hence, $T^4 = D^3$

see 1991#88, 1994#7, 1994#13, 1994#15, 2000#22, 2000#43

See 2003 #40

ECOPOW.WPD February 1, 2005

# ECOLOGY vs. POWER

Nature tells us that all life lives so that Life can live, and that Life lives so that all life can live. Life abides in a great Ecological Complex of its own creation. Mutually sustaining, mutually creating, recognizing and respecting the importance for its survival of the roles of its component diversities. But life also recognizes and respects the role of the inanimate world which supports its several ecologies. The source and origins of this magnificent complex of evolving parts is a mystery, a mystery we have tried to comprehend but whose examples we seem to ignore. The concept of ecology has been well expressed by the phrase, "from each according to its abilities and to each according to its needs". But these words have become anathema to many.

Humans are having a love affair with the concept of power, power in many forms: the physical form $P = ML^2/T^3$, energy/ time, speed, NOW!!; The political form, control over information, over other people, and over nature itself; and even in religious forms, "Subdue the earth", the Anthropic Principle, "It all happened so we could be here". Humans, in considering themselves apart and above the ecologies in which they live, are ceasing to be part of those ecologies. Some, intoxicated with power, seem to think we can "go it alone". While the great Ecological Complex of life might well survive without a particular species, it is difficult to imagine any particular species surviving ~~by itself.~~ without the ecological complex.

Paleontological studies of the history of life indicate that when so called "extinctions" occur, destroying a portion of life's ecology, there follows a "radiant", an explosion of new species. In every extinction, the major or "most advanced" species are always terminated, and in the subsequent radiant there is more diversity, allowing new and more complex species to emerge.

There are two lessons in this for us to contemplate:

First, the cosmos does not operate for the end of producing an "advanced species" such as humans. We are here, not as an end, but as part of a process. This might be as deflating to us as was Copernicus' removing the earth from the center of the universe, but until our religions and psyches can adapt to our not being number one, we will continue with the delusion of our birthright to power. The task of our sciences and philosophies is to explore our place in the context in which we find ourselves. This is an ongoing open-ended search with no definitive answers, but it can give us meaning and serve as our role in the order of things.

Second, control and power are antithetical to ecology. Power must homogenize and diminish diversity, it seeks to recast all in its image. But with diversity being the essence of survival, the concentration of power becomes the path to its self-destruction.

3 DYNAMIC ECOLOGIES #species ↑
and
STATIC or STABLE ECOLOGIES #species = constant
and Convergent ecologies, e.g. Armstrong Grove - ultimate extinction
ECOLOGIES are the Selectors in Natural Selection

# BREATHING

While we associate breathing with living forms, it may be that *breathing* in a general sense is fundamental to most of the processes of nature. Of course we recognize the universal manifestations of cycles of various frequencies and durations, but breathing is more than just a cycle, it is a form of transformation–of energy, of force, of form. Consider the example of an engine. An engine breathes, i.e. it operates with cycles and transforms energy. But the breathing of an engine involves the alteration of two cycles. In the first cycle, in expansion fuel is taken in to the engine and in contraction the fuel is compressed. In the second cycle, expansion comes from burning the fuel, then contraction exhausts the residue. We can say that the operation of an engine is effected with a cycle that consists of two 'breaths', or alternatively, we might say that an engine breathes with two expansion-contraction cycles. This example leads us to consider complex cycles, where many breaths constitute an operation cycle, or many operational cycles constitute a breath.

While we ordinarily observe change as continuous[1], upon magnification, repetitive alternate states and cycles become manifest. It appears that all change is basically structured on oscillatory processes–on some form of 'breathing'.[2]

Breathing manifests itself in four forms:

In P-SPACE, Expansion–Contraction
In H-SPACE, Diversification–Homogenization
In L-SPACE, Fragmentation–Consolidation
In O-SPACE, Non-existence–Existence

In addition, breathing manifests itself,

In philosophy and education as the Question–Answer dialectic,
In science as the hypothesis Formulation–Testing dialectic,
In social systems with Hegel's Thesis–Antithesis dialectic

It becomes seductive to feel that the laws of change and the laws of aggregation can be explained in terms of various breathing processes. However some periods are irregular, and some are too long or too short to have been observed, all of which complicates their analysis. What is needed at this time is understanding of new ways in which cycles can be interlaced. We are well acquainted with resonances and harmonics and the properties of regular cycles, but breathing consisting of multiple cycles of different frequencies [such as brown and white noise], needs to be further explored.

---

[1]The philosopher Zeno of Elea, illustrated non-continuity of change with his paradoxes such as that of Achilles and the Tortoise.

[2]Not only change but also stasis depends on equilibriums and balances preserved by breathing like processes.

Add: Radiant-Extinction
Modulation and Meta-Modulations
Li Kiang's Meditation Breathing (2 cycle)

BREATHING & DIALECTICS

SIMPLE 1 CYCLE BREATHING - LIFE,
ENGINES
LOOPS [TURBINES] reciprocation
PROPELLORS mutuality
Wkd 4 first
cause

Reciprocating, Steam
Otto cycle

effect movement [P-SPACE]
effect transformation [H-Space]
growth
cocoons, chrysalis

BARTUCH.WPD February 3, 2005

# THE WISDOM OF BARBARA TUCHMAN

## The Insights of an Historian

In 1913 it was still possible to think the fault lay in the system, not in humanity.

Government remains the paramount field of unwisdom because it is there that men seek power over others and lose it over themselves.

Policy founded upon error multiplies, never retreats.

War is the unfolding of miscalculations.

MENTGRAF.WPD February 4, 2005

# SOME MENTAL GRAFFITI

## WILL vs BELIEF

Will and belief are related in the way vector magnitude and vector direction are related:

$$P = W e^{iB}$$

Power is equal to Will times [cos(B) + i sin(B)], where B is the direction, that is, the goal. Will, resolve, drive, are the more visible part of power. Part of the direction, the cos(B) part is visible, but there is also an invisible part, the i cos(B) part. This represents the overlooked inevitable "side effects".

---

## INSTRUMENTAL VALUES vs. SUBSTANTIVE VALUES

This is another example of the need for vector representation. Instrumental values such as commitment, courage, loyalty, persistence are like the magnitude of a vector, substantive values such as, freedom, happiness, health, justice are directions. As before, we have:

$$P = I e^{iS}$$

Progress is equal to the Instrumental times [cos(S) + i sin(S)], where S is the substantive. But this is really over simplified. While magnitude and direction are one way to express the necessity of two levels, in this case a more profound distinction of levels is needed. The important point is that most processes require two levels or two states for their representation. Vector representation is a useful special case of multilevel representation, but only for two levels

.

---

## STEPWISE vs COMPLETE

Scientists, engineers, writers, artists, know that the creative process must follow the ancient Chinese admonition that every journey begins with single step. And that the process is step wise, altering hypotheses, redesigning, rewriting. Sometimes trashing the first draft completely, and going back to the drawing boards, [e.g. Copernicus vs. Ptolemy, 1543]. This way of creating and thinking has never caught on with certain professions, such as the legal profession, or with politicians. They have an 'all or nothing approach', of completion on first try or forget it. [read 'my way or no way'].[1] This all or nothing approach also seems endemic in certain cultures. Arabs have great difficulty with stepwise. For example, the Camp David accords opened the door for step wise progress toward achievement of an equitable modus vivendi for the both Israelis and Palestinians. But Arafat insisted on completion at the first step and not getting it, sulked into intifada. But there is something deeper involved. Those who are not willing to move step by step are those given to fighting over what exists. [What else to lawyers do?] Those who feel it is more worthwhile to expend energy on creating what has not existed instead of struggling over what exists, are not only the wise ones, they are the step-wise ones.

---

[1] President Woodrow Wilson, only accepted the Versailles Treaty after acceptance that there be a 'League of Nations'. To his credit he recognized the need for step-wise. Typically, the U.S. Senate, in its majestic unwisdom, blew it.

FUTURE01.WPD JANUARY 14, 2101

# TOP STORIES OF THE TWENTY FIRST CENTURY

There is little doubt in the minds of most, that the outstanding discovery of the Twenty First Century was that the human race was not a single species, but consisted of two species of very similar primates. Whether these two had earlier evolved from different branches of the evolutionary tree or were just in the process of splitting into two distinct species has created two schools. But the genomes infer unquestionably the existence of two distinct species. Interbreeding of the two distinct species is possible and there seems to be a significant proportion of the whole so-called human population that are hybrids. Some geneticists are proposing that there now are really three distinct species, the two historic species and the hybrids.

The genetic differences displayed resemble the differences in two living species of chimpanzees: the PCHA and the PCHB genetic types. This fact gives support to the theory that the two human species have derived from two distinct primate branches. Some humans from the PCHA branch others from the PCHB branch. Over thousands of years by adaptation to similar environments the two species became so similar that interbreeding became possible. This would confirm a basic precept of evolutionary theory that certain destinations [organisms] will occur and reoccur, regardless of the details of their evolutionary paths.

Humans have long sensed that important differences existed within their species, but have focused on the outward manifestations such as race, ethnicity, or on religions and nationalities as the bases of their differences, little suspecting that there existed a basic genetic difference. This was obscured because there were the same races and ethnic groups in each of the two species. There were PCHA blacks and PCHB blacks, PCHA whites and PCHB whites, etc. The real differences were not such outward manifestations as skin color, etc, but the presence and/or absence of certain genes.

What then are the important differences between those with the PCHA genome and those with the PCHB genome? Returning to the chimpanzees, the PCHA variety find their social unity through conflict, seeking security by overcoming competitors. The PCHB chimps, on the other hand, find security and strength in cooperation and in a compassionate society. Sounds familiar? Everywhere we see both types of humans, those who thrive on competition, control, and power, and those who thrive on creativity, sharing, and compassion. Those whose energies go into a struggle over what exists, and those whose energies go into creating what needs to exist. Those whose challenge is a human enemy, and those whose challenge is human ignorance. Those who see life as a win/lose game, and those who see life as a cooperative enterprise. Those who fear diversity, and those who see diversity as wealth. Those whose god is made in their image, and those who seek to become the image of their god. Yes, there are two different species. And don't forget the hybrids since most of us are hybrids.

How are we to live together? It is useless for any group to try to "convert" the other. But it is important that there be understanding of any threats to the survival of any of the sub-species for the three need each other to survive. But the ways in which we have lived together for the past few thousand years is not going to continue to work. The creativity of the PCHB group has, in the hands of the PCHA group created a crisis for survival. Everyone must change. Creativity must be liberated from Ozbekian's Law, and Power must be treated as the destructive psychological disease which it is. Let us hope in our new 22nd Century we shall find a beneficent solution.

PRODPROC.WPD March 25, 2005

cf 2005 #5

# CONCERNING VECTOR DYADS [PART I]

Among the various species of dyads are those having a vector nature, that is dyads that may be considered as having a dynamic and a direction. [see scrap 2005 # 5] Some examples:

| **Magnitude** | **Direction** |
|---|---|
| Process | Products |
| Evolution | Species |
| Means | Ends |
| Belief | Beliefs[1] |

Most of us have difficulty with the vector species of dyad, confusing it with the us/them opposition type of dyad. While the resolution of opposition dyads requires one side win and the other lose, vector dyads do not. But what is subtle about a vector dyad is that while both magnitude and direction are matters of choice, there exists a functional relation between them. That is, where you choose to go and how you choose to get there are not totally independent. Some choices of how will take you to a different where and some choices of where require an overlooked choice of how. And in some cases you just can't get there from here.

More basic to vector dyads, is the matter of emphasis, whether it is on the product or on the process, on the goal or on the route. For example, in science emphasis is almost exclusively put on process, on the so called scientific method,.(the how). An hypothesis must be empirically tested and the tests be reproducible. But on occasion some hypothesis (a where) becomes so convincing that the basic scientific method of validation is replaced by validating through what is in accord with the product (a theory). This in effect closes off paths to possible alternate products and puts the focus on alternate affirmations of the specific product. And quite frequently in the building of knowledge around some specific product(s), important facts are ignored and others considered irrelevant. After the open ended scientific process has been taken over by its products, the end result is a set of unchallenged theories that remain until, as Max Planck said, "their adherents die off".

But the compromise of process for the sake of a product is far more common in politics than in science. It is disturbing that this past week the majority in congress saw fit to ignore the Constitution in order to advance their standing with their political base. The democratic process subverted for a partisan product. The emphases of many politicians result in an ephemeral *where* taking priority over diachronic constitutional processes. This is certainly us/them thinking invading a vector dyad. It may be that approaching all problems as us/them issues is natural for those trained in certain branches of the law. The win/lose mentality of the court room becomes reflex thinking for many politicians. They reduce the world to a win/lose, us/them game. It is long past time that such simplistic thinking be exiled from the halls of legislators, the pulpits of clergy, and the councils of nations.

---

[1] * Because of some semantic limitations of the English language, the same word, *belief*, is used both for a process, such as the power implicit in the act of believing, and for a product, the particular world view that is believed in.

HYPACK.WPD March 31, 2005

# PERSONAL AND CONSENSUS PACKAGES

It is paradoxical that what defies the logic and experience of some can be valid and inspirational to others. What we often view in others as hypocrisy is rather their subscription to a belief and value package that appears to us as self-contradictory, while to them it is totally consistent and self-supporting.. Do we live on the same planet? It is true we all make packages of our experience. This simplifies life. But we are not allowed to stay with our personal packages. Cultures and societies create consensus packages; and the experience and value packages of individuals in time morph into the prevailing consensus packages. Why? To get along we must go along, since it is more important to us to belong than to insist on the validity of our personal experience. Thus, sooner or later, we all become Conservatives or Liberals, Democrats or Republicans, Christians or Agnostics, etc, whatever our personal package has morphed to. And in becoming conformists, we also become hypocrites. no longer loyal to our personal experience package.

Consensus packages are invariably given labels. In some way a label endows the package with an aura of validity, and sometimes even gives the package a life and will of its own. It simplifies everything. To have too many alternatives on the menu is confusing and overtaxes our thinking capacity. Besides the fewer the options, the more power there is in activity. There is no denying the power and momentum of a single condensed option such as, ein Volk, ein Reich, ein Führer.

But recently spin masters have created a new breed of package: Orwellian Packages. This type of package bundles conflicting and contradictory ideas and interests into a unified structure advantageous to certain special interests, going far beyond mere hypocrisy. It is curious that such conflicting values as morality and greed could be co-packaged. But it works! However, it should be emphasized that traditional consensus packages have for the most part been neither self-contradictory nor dismissive of facts. The Orwellian consensus packages , while still labeled consensus packages, are not derived by consensus. They do not represent the joint interests of the constituent groups. Rather they are the creations of spin doctors to coopt diverse groups into a political base that, paradoxically, subverts the participants own interests. Packages no longer represent value or belief systems, they have become fronts of political manipulation.

In terms of set theory, the union of the set would be the totality of all the personal packages. The major intersect of the set would constitute a consensus package. But in addition to the union and full intersect, there are many sub-intersects consisting of several overlapping personal packages. These share values and interests but do qualify as consensus packages. It is respect for these sub-intersects that is the real essence of democracy. And now with the internet it becomes possible for them to be viable and effect a confederation of diverse participants into the promotion of the general welfare in accord with the Constitution.

RANDCORP.WPD April 1, 2005

# THE THINK TANK EXPERIENCE
## Some Notes About RAND[1]

- The Two Dimensional Organization:

| The Resource Staff | The Project Staff |
|---|---|
| Discipline or field | Task or project |
| Organization | Organization |

The resource staff must be on top of their specialties. This is best assured by their ability to make research contributions to it. Members of the resource staff may become ad hoc members of the project staff.

Projects, in general, are multi-disciplinary requiring the participation of several members of the resource staff. Projects may become disciplines and hence develop their own resource staffs. (e.g. nuclear deterrence)

The two staff organization has several advantages:

- o It is an anecdote to specialization, it creates generalists as against the current practice in universities. At RAND even the arrangement of offices led to cross fertilization of ideas.
- o It raises and considers non-pedigreed problems and creates non-pedigreed fields of knowledge.
- o It is readily adaptable to synthetic thinking, providing a format for ideas in juxtaposition

.

- Inter-Disciplinary Studies vs. Multi-Disciplinary Studies:

An inter-disciplinary project is one in which the project staff calls on the inputs of resource people from the various involved disciplines. A multi-disciplinary project is one in which the project staff invites the full participation of germane members of the resource staff. Each is given the whole problem, not just questions concerning their own expertise.

*"Give me your problem. not your solution".*

Each contributor, thus not only brings his expertise but also, of more importance, brings a different perspective .

- The Journeyman Staff:

The university is modelled on the guild, with students (apprentices), under faculty (journeymen), and professors (masters). Schools usually emphasize the apprentices, Universities, the masters. It is the unique aspect of the Thinktank that it emphasizes the journeymen, those who are trained and skilled, but are still open ended enough to move into new areas and develop new skills. (Masters may be hired as consultants, if needed. ) Those who "haven't yet made it" are more dynamic and creative and more likely to find novel alternative solutions than those deeply specialized in their discipline.

---

[1]Condensed from RAND publications

PRAIRIE.WPD April 6, 2005

# ON LIMITATIONS [PART I ]

## WHY IS THERE SOMETHING INSTEAD OF NOTHING?

Imagine being on a boundless open prairie, on an expanse so undifferentiated that everything seems like nothing. There is unlimited choice where to go, but boundless choice offers no destination. Suddenly a path appears. A path? It must come from a source and lead to a destination, but were we to follow it, should we go to the right or to the left? Either way it must lead out of this nowhere to somewhere. Or could it be a loop? And whichever way we went we would sooner or later end up back here. In that case here and now would be both the source and the destination. But would we know this here and now when we got back? Maybe we would really see it for the first time.[1]

On closer inspection the prairie has not one path but many paths. In fact the prairie is crisscrossed with countless paths, each coming from and going to one knows not where. Each path is some epistemological process, each destination is some ontological reality. Yes, countless realities can be reached on this blank prairie depending on which path is selected. This nothingness is the source of all realities. There are countless paths, but finite beings, such as humans, can take but one path. Although confined to one path, to one reality, to one destination, we nonetheless ask, is there not some way we can picture the whole? Some way we could know the nature of all the alternative destinations in order to select the path taking us to our heart's desire?

But a picture of all the alternatives is not available. The point is that being restricted to one path we are empowered and are enabled to create. For example, confined to one path creates a destination for us where none existed before. While the boundless prairie has no destinations, being only a plethora of options and possibilities, it does nothing. But the limitation imposed by a single path empowers us to create and reach a destination, even to reach sequential destinations. And accommodating our natures, this single path gives us a sense of certainty and security. It comforts us with the hope that, if devotedly followed, it will take us to the destination of our dreams.

But on even further inspection, it seems there may be a pattern in these countless crisscrossing paths. It may be that there are really only a limited number of paths and that some of them traverse the prairie in such a manner as to enable exploration of its multi-dimensional fullness and possibilities. Maybe even the path we have selected is such a path. Now we can not only accept that limitations are the way to get to where we could never get without them, but can visualize that limitations per se even enable us to transcend the limits they impose.

---

[1]Apologies to T. S. Elliot

CUSA.WPD April 7, 2005

# COGNITIVE ANARCHISTS

## NICHOLAS OF CUSA

Nicholas of Cusa (1401-1461), a remarkable diachronic thinker. A century before Copernicus he claimed that the earth itself moved and that it was not at the center. Going beyond Copernicus he reflected modern cosmological thought when he said, "The fabric of the world has its center everywhere and its circumference nowhere." Relativity enunciated in the 15th century! In his treatise, Learned Ignorance, (1440) he said that the universe is neither infinite nor finite because there are no limits with which it is enclosed, that is, the universe is finite but unbounded. His cosmology not only foreshadowed relativity, his logic anticipated Gödel's Incompleteness Theorem, when he asserted that "reason is inadequate for determining truth". His logic was perhaps the earliest non-Aristotelean logic in the West. "It both is and is-not, but it is also neither is nor is-not."[1]

---

## KURT GÖDEL

Kurt Gödel, greatest logician of the 20th century, famous for his Incompleteness Theorems, in which he proved the intrinsic limitations of axiomatic systems, felt that stories were the best devices for grasping truth. He stated, "Only fables present the world as it should be and as if it had meaning."[2] He saw stories as going beyond logic and equations in conveying *contexts* which are required as well as *contents* for communicating meaning. He implies that meaning is primarily about humans not reality.

---

## PAUL FEYERABEND

The scientific philosopher, Paul Feyerabend, a 20th century thinker in the forefront of interpretations of modern physics, agreed with Gödel. He asserted that "A systematic analysis is a fraud. So why not avoid the fraud by going directly to stories."[3]

---

[1] World Book

[2] A World Without Time, Palle Yourgrav, p5

[3] Killing Time, Paul Feyerabend, p163

"The logicians are able to subdue people's mouths, but cannot win their hearts"

– Chuang Tzu [399-295 BC]

DAYNEWS.WPD April 30, 2005

# ONE DAY IN THE NEWS

APRIL 30, 1945, SIXTY YEARS AGO TODAY:
The last defenses of Berlin collapsed and the Russians entered the city. As the Red Army approached the Reich Chancellery and its underground bunker, Adolf Hitler shot himself and his bride of one day, Eva Braun.

APRIL 30, 1975, THIRTY YEARS AGO TODAY:
The last defenses of Saigon collapsed and the North Vietnamese entered the city. As the Viet Cong approached the American Embassy, helicopters took off from the roof carrying the remaining military and embassy officials to carriers waiting off-shore.

---

Yes, Virginia, history does repeat itself. While the characters and scenery may differ, the plots remain the same. While the times and locations may differ, the archetypal patterns endure. And as Santayana said, "Those who are ignorant of history are destined to repeat it."

---

But there were parallel follow-up's to each of the above events:

Two significant follow ups to APRIL 30, 1945. 1) At Nuremberg: Trials were held and laws regarding war crimes and crimes against humanity initiated. 2) At San Francisco: Nations met to institute a global organization that could deter wars and genocide. The United Nations was founded.

A significant follow up to APRIL 30, 1975 was the conference at Bandung in which nations that had been victims of colonialism gathered together and issued a resolution declaring opposition to all colonialism.

---

On APRIL 30, 2005 it is apparent that those ignorant of history are again bent on reproducing past blunders. It must be that one of the diachronic archetypes of history is that there will always be those whose imagination and intelligence is limited to repeating over and over what has never worked.

And here we must admit to the truth of the pessimistic old Russian proverb:

Прошлое Не Прошло

The past has not passed

RACELOST.WPD May 5, 2005

# THE RACE WE ARE ALL LOSING

Something is seriously wrong with the human situation as we begin the 21st Century. We are absorbed with countless problems of our own creation, but are totally unaware of how our patterns of living and thinking have created and continue to create these problems. Of course we still have the traditional metabolism problems of sustenance and protection that have always been with us, problems that continue to give rise to competition and conflicts; but today there are new situations creating problems of a different genre, problems that are not only searching for solutions, but even for articulation. And underlying all, there are threatening situations that are not even perceived.

How do we proceed toward identifying and defining these situations and problems?

First, we must recognize that the context within which human cultures have evolved over millennia has radically changed in the past two centuries. The world to which our cultures adapted no longer exists. Second, we must acknowledge that it is we ourselves that have effected this radical contextual change. We have succeeded in changing the context in which we are embedded at a rate far exceeding our capacity to adapt to the change. This has rendered traditional concepts and institutions counter productive and in some cases our traditional practices now threaten the survival of our species.

So we ask, what human activities have been involved in effecting the major contextual changes of the past two centuries?

Two areas immediately come to mind: [1]

1) Technology and its unintended side effects.

2) Corruption of our semiotic and semantic representations of the world.

There are others, [e.g. certain scientific theories] but technology and linguistic dysfunction have contributed to major changes in values, morals, and our even our world view.

Finally, we must ask what in our traditional way of doing things, what in our traditional belief systems, what in our traditional institutions, and what in our very psyches sets us at odds with this rapidly changing world that we continue to create?

---

[1] The role of technology in effecting major changes in our social and environmental milieu is quite visible. But the subtle "Orwellian" manipulations in the meanings of words and symbols and the psychological "packaging" of unrelated, even contradictory, items and ideas developed by the advertizing and public relations industries has played a major role in the destruction of critical thinking and of a valid perception of reality. Indeed, it is through the creation of illusory images for commercial and political purposes that the real nature of the changing world has been obscured. The unintended side effects of semantic manipulations are proving to be the greatest threat of all.

What technology has rendered obsolete
is that portion of humanity that seeks
control and power, (the human cancer cells
societal
)

With technology's contribution to weapons
of mass destruction, the traditional
power struggles of rulers are obsolete

Humans will either constrain those
who seek power, or become extinct.

2500 years ago Confucius said:

"Those who seek political office should
automatically be disqualified"

Today we should amend this,

— and be confined in a gulag on the moon.

BLAKE.WPD May 5, 2005

*TO SEE A WORLD IN A GRAIN OF SAND,*
*AND A HEAVEN IN A WILD FLOWER,*
*HOLD INFINITY IN THE PALM OF YOUR HAND*
*AND ETERNITY IN AN HOUR.*
–BLAKE

When ultimately disclosed, everything that exists is of the nature of a loop. Or said in another way, everything that exists can be constructed of loops or cycles. Said in still another way, all of reality can be represented by superimposed frequencies. [sounds like string theory]

Take the example of Blake's two loops.[1] The first is the scale loop. Going down into the grain of sand and on below, to silicon atoms, to quarks, and on into a "white hole" through which we pass and lo we behold the cosmos itself. The infinitesimal intimately connected to the infinite! In Blake's second loop, focus on the present, go down to the micro second, the nanosecond, and on into a white hole passing through to all eternity! The present moment intimately connected to eternity! How strange, the whole is more intimately linked to its most minuscule parts than to its major ones. But have not many great teachers told us this? God is more closely in touch with a falling sparrow than with the grandest emperor or pope. "What you do for the least of these, you do for Me."

How about an identity or belonging loop"? Start with yourself. You are your basic identity. Then comes an identification with your family, then with your neighbors. On upward identification with your community, your country, your species, your genre, your kingdom [plant or animal], your planet, star, galaxy...your cosmos. But where is the white hole? To find it you have to go inside, go down below your ego, below your self, down to the mindful essence that is doing the identifying, then suddenly the white hole appears and you and the cosmos are one. You belong!

If you can go through the white hole,[2] what you belong to also belongs to you. How strange, that not only does the whole contain each part, but each part contains the whole. And now we can understand the answer to the questions: Who is my brother? Who is my neighbor? You, your brother and your neighbor, are all One. The Kingdom of God is within each of you.

All exists as a consequence of one or more of these great loops. However, whenever any loop is broken open, through a part seeking to be the whole, the loop ceases to exist.

---

[1] Perhaps there is a third loop. The aesthetic loop! Whenever we become transfixed with the beauty of a wildflower, a butterfly, a snow capped peak, a cloud, ...., we are in that loop which includes Heaven.

[2] Sometimes this white hole is called enlightenment, sometimes salvation, sometimes surrender.

loops as mutualities

co-existence = a loop

Symbiosis, ecology = complex loops

If societies are loops they persist

Capitalism is not a loop

THOTS0507.WPD May 7, 2005

# THOUGHTS OF THE DAY

Why are crows so smart? Maybe we made them smart just by making scarecrows. At first the scarecrows worked, they scared away the crows. Then over time the crows noted that while the scarecrows were scary they were not really a threat. Then they began to ignore them altogether. But what is important is that the crows learned something most humans have yet to learn: *What is apparent and what is real should not be assumed to be the same.* When you know that, then you are smart.

---

One of the top domestic issues these days is education. " Industry goes abroad to find qualified people". "China trains six times more engineers than the U.S." "Japan, with a smaller population graduates twice the number of engineers each year than the U.S." .....etc.
No child left behind: "Administration absorbs increasing percentage of education budget", "Administrators get raises, teachers get larger classes", (students get the shaft). This picture is quite visible to everyone. Why then, with America's future at stake, are the remedies adopted ineffectual and efficacious remedies ignored? My take is that the dumbing down of the next generation is intentional. An ignorant, uneducated, homogenized population is far easier to control and manipulate than an informed, educated, diverse citizenry. Power wants a population that so long as it orates democracy in the media, it can get away with fascism in the board room and Oval Office.

---

Several top educators have said that the essence of education is learning how to learn. To my knowledge there are no explicit courses in any school curriculum entitled, "How to Learn". Of course not. How to learn cannot be taught, it must be learned from one's own observations and experience. But before the *how* to learn there must be the *desire* to learn. Whence the desire? We are born with the desire. We ask questions as soon as we can talk. Some never lose this desire to learn and keep asking questions. However, many parents in their parenting weariness begin to discourage continual questioning and in time sensing disfavor the questioners cease. But our culture itself encourages the suppression of questioning. To have a workable society we must have conformity and this is what schools are for, not to teach how to learn, but to teach conformity. Schools teach us *what* to think not *how* to think. But now and then there are rare exceptions. There are teachers, who in front of their students, question what they are teaching. This has the effect of lighting a fire for learning. Suddenly the students and teachers are on the same side. There is more to be learned than any of us know, no one has final answers. We all become partners in questioning the unknown. The students see they have real meaning. They discover that they too have an important role in the human endeavor to rise out of the quagmires of ignorance and dogma that have enslaved us for centuries. They discover we must learn, not just be taught. And now they are ready to explore *how to learn.*

EAST HILL.WPD
~~NOTE09S.WPC~~ July 6, 2004 May 12, 2005
804 2004 #51

# THE EASTERN HILLS

Sometimes when viewing hills that lie to the east, I feel that our destiny lies beyond them. Not in the valley that lies on the other side of the hill, but beyond the hill in some alternate dimension. As my view sweeps up the slope to the ridge, I note that at the summit the world splits into two. One part goes over the hill and into the valley beyond and on over the next hill and on and on, following the surface of the earth, a finite sphere of closed curvature. But another part separates at the summit and turns upward into an infinite space of open curvature. While both of these worlds are real, we live for the most part in the closed world. But now and then we are able to glimpse the open world; as perhaps when we watch the harvest moon mount above the ridge into the open and infinite space.

Yesterday I had surgery on my right eye to remove cataracts. And today as my eye begins to recover I see two worlds. My left eye still sees the cataract darkened world sharply. My right eye, however, sees a cataract free bright world, but fuzzily. Curiously, the two worlds intersect, with the bright world of light centered a few degrees above the cataract dark world. This experience helps me to understand that there are indeed two worlds, one darkened by the semi blindness of the cataracts of traditional mind sets, however from long experience seen sharply. The other brilliant and colorful, but lacking the sharp edges of the dyads of us/them, true/false, good/evil that govern the dark world.

The way my eyes see today becomes another metaphor for what I was trying to say about the hills. The sharpness of our physical world derives from repetitive experience. On the other hand, the higher world of Light and Mystery is never seen sharply, not because we experience it only intermittently, but because it cannot be reduced to the rational. As Lao Tzu said, the Tao that is articulated is not the true Tao, for articulation and rational thinking inevitably truncate and delimit. On the other hand, those limits serve to guide us and keep the Mystery open for us.

#17

PRONOUS.WPD

~~NOTE20.WPD~~

October 30, 2004 May 13, 2005

# PRONOUNS AND SETS

Over millennia of human experience most languages have come to use the same six interrogative pronouns –who, what, how, where, when, and why. The questions implied by these pronouns lead to the most common links which we perceive to connect the events of our experience. These six pronouns are not only basic to how we organize our experience, but also direct and limit the way we perceive the world and think about it. They govern how we assign facts, people and events to different sets and categories; they govern how we project order onto the world and create order in our lives.

Each pronoun refers to parameters that occur repeatedly in our experience. For example, **where** seeks the values of parameters defining location in space;. **when,** the values for the parameter time; **what** attempts to locate a specific event in a common class or set of events; **who,** a specific agent in a class or set of human agents; **how**, in a class of tools or processes. Finally, **Why** is a "catch-all" pronoun, not relating to any given set but rather inaugurates a search for a set whose intersects with some common sets might reveal links to other events. That is to say, find links which would give the event meaning, locate it with respect to its contexts.

We might ask ***why*** have our languages settled on these six interrogations? While they have been modified and supplemented with other words, such as, where is —, when will —, how much is—, etc, why are there not more single word interrogative pronouns referencing additional specific sets and categories? Does the cut off at five imply some boundary to what is commonly experienced or is it a consequence of some limit to human information processing capacity? Or did the catch-all **why** pronoun make additional pronouns unnecessary? With the rapid increase in the diversity of human experience in the past two centuries, are the traditional pronouns still sufficient? Today, many of the most important errors in our thinking arise from our inability to discriminate between elements, sub-sets, and sets and between their multiple intersects. Perhaps we now need new pronouns or verbal devices for correctly locating events in the hierarchy of the **intersects** of the who, what, how, where, and when sets. And perhaps pronouns or devices for realizing entirely new categories and sets

In summary, interrogative pronouns are tools our language uses to assign events to sets or categories. These sets or categories are the entities we use to construct reality. Although they simplify and truncate our experience, they do allow us to create order and find meaning.. But has the time now arrived when we must add new basic interrogations in order to keep pace with the world we are recreating?

These interrogatives are part of the Q-A dialectic [Socratic Dialectic]

The fundamental question is what relate to known occurences, the familiar
requires a description hopefully in terms
of previous experience - [the repetitive set]
~ precedence

How, relate to some known process(s), cause

Why, relate to some known purpose, goal, entelechy, agenda

who, relate to some agent

where, relate to a location } space-time context
when, relate to a time }

which, a second order interrogation
⇒ ∃ a menu in one or more of the above

PRONOUNS.WPD May 13, 2005

INTERROGATIVE PRONOUNS

| ENGLISH | WHO | WHAT | WHERE | WHEN | HOW | WHY | WHICH |
|---|---|---|---|---|---|---|---|
| GERMAN | WER | WAS | WO | WENN | WIE | WARUM | |
| FRENCH | QUI | QUE | OU | QUAND | COMMENT | POUQUOI | |
| ITALIAN | CHI | CHE | DOVE | QUANDO | COME | PERCHE | |
| SPANISH | QUIEN | QUE | DONDE | CUANDO | COMO | PORQUE | |
| RUSSIAN | КТО | ЧТО | ГДЕ | КОГДА | КАК | ПОЧЕМУ | |
| JAPANESE | DARE | NANI | DOKO | ITSU | DO | DOSHITE | |
| CHINESE | SHEI | SHENME | NAR | SHENME SHIKOU | ZENME | WEI SHENME | |

SEVENINT.WPD ~~No File~~ 2002-07-20

## REALITY AND THE SEVEN INTERROGATIONS

| ENGLISH | GERMAN | FRENCH | ITALIAN | RUSSIAN | JAPANESE |
|---|---|---|---|---|---|
| WHAT | WAS | QUOI | COSA | CHTO | NANI |
| WHERE | WO | OU | DOVE | GDYE | DOKO |
| WHEN | WANN | QUAND | QUANDO | KOGDA | ITSU |
| HOW | WIE | COMMENT | COME | KAK | DOYATTE |
| WHY | WARUM | POURQUOI | PERCHE | POCHEMU | NAZE |
| WHO | WER | QUI | CHI | KTO | DARE |
| WHICH | WELCHER | LEQUEL | QUALE | | |

Grammarians distribute these seven basic interrogative words into the categories: pronouns, adjectives, or adverbs, depending on their use in a sentence. Epistemologists prefer to view the way these words control our question-answer dialectical process.

# AN EPISTEMOLOGY BALLOT

Design your epistemology by checking which of the following you wish to adopt:

Experiential input channel
- ❑ Sensory data (Positivism)
- ❑ Intuitive perceptions (Recognition)
- ❑ Revelation (Meditation)
- ❑ Mathematical concepts and constructs

Preferred probability distribution
- ❑ Gaussian (Science)
- ❑ Bi-modal
- ❑ Minimized sigma (Dirac function, probability 0 or 1)
- ❑ Flat (Disregard probability)

Preferred validation method
- ❑ Reproducibility (Induction)
- ❑ Logical analysis (Consistency)
- ❑ Consensus (Or Majority)
- ❑ Authority

Preferred dialectical process
- ❑ Question / answer (Socrates)
- ❑ Hypothesis formulation / testing (Science)
- ❑ Thesis / antithesis –> synthesis (Debate dyads) (Hegel)
- ❑ Suppress alternatives

Desired product
- ❑ Knowledge
- ❑ An ontology (A Weltanschauung)
- ❑ Truth (Dogma)
- ❑ No Product (Open ended)

---

There remains nothing but to turn to the simple things: we should conscientiously fulfill the duties and tasks that life presents to us without asking too much about the why or the wherefore. And then we should wait for whatever happens. Agree ❑ Disagree ❑

Whatever the selection, it will self-perpetuate. Selections becomes selectors. They seek to reaffirm themselves by focusing on what they have previously rendered customary and familiar, discrediting alternatives. Agree ❑ Disagree ❑

Reality is transforming itself without our influence. Agree ❑ Disagree ❑

EBALLOT2

5-5-16

KRASNIK 71

ANIV71,WPD May 23, 2005

# THOUGHTS ON THE 71ST ANNIVERSARY OF A VISION

On the 23rd of May, 1934 when I was 16 years old I had a glimpse of a world, one different from the sensory world in which we are living; and different from the world we feel 'makes sense'. This glimpse was a vision felt in the heart. It subsequently launched me on a quest that became for me a Holy Grail. But I am not sure whether it was a vision of what this world could become, or was a glimpse of World as it really is. And today, 71 years later, I am still uncertain which.

From time to time in different places and in diverse circumstances the glimpse has reappeared and briefly manifests dimensions of beauty, wonder, and sanctity that are the contexts within which our everyday world exists. How are these glimpses to be interpreted? How are they even to be articulated ? All I can say is that if they could be grasped, they would completely transform us.

But I am certainly not alone in having experiences like those I am here calling glimpses. Countless men and women throughout history have described, or attempted to describe, similar visions. Sages and great teachers in many cultures have succeeded in articulating what I and those like me cannot begin to say. But all, using different symbols, seem to be speaking of the same contexts of beauty and holiness that surround us and infuse us.

One difference between our sensory world and the meta-world in which it resides can be partially articulated. The things and events in our world are imprisoned by spatial contiguity and temporal continuity, which severely limit the kinds of relationships that can exist between them. Contiguity requires that the parts must have forms that "fit together". Continuity requires a fixed sequence leading to the single relationship of cause before effect. In the meta-world, on the other hand, with modules and events not locked into contiguity and continuity, multiple relationships, linkages and connections are possible. Objects can be mutually interconnected in vastly more ways than contiguity allows; events can be interlaced in multiple bi-directional ways that the causality imposed by continuity forbids. And in consequence of emancipation from contiguity and continuity, semiotic and symbolic representations are liberated from the strictures of logic and consistency. That is, the meta-world is not structured on consistency. While it contains sub-worlds, such as ours that are self-consistent, there coexist other sub-worlds subject to diverse sets of limits. And the diversity of limits allows the diversity of worlds.

The quest continues. But the quest has turned into a search. While a quest is for something known to exist but not yet apprehended, a search is for whatever may exist that is not yet apprehended. On the path, from time to time, something graspable is encountered. Whenever this happens, some degree of transformation occurs. And an important part of each transformation is an increase in the ability to live with uncertainty and openness.

MAY2505.WPD May 25, 2005

# THOUGHTS ON MAY 25, 2005

## COGITANS

In our thinking we separate what is inseparable:
- Creator and Creation
- Designer and Design
- Selector and Selection

We fail to relate what is related
- Process and Product
- Option and Action[1]
- Form and Force

And we homogenize what is ~~distinct~~. diverse and distinct

## IDENTITY

The technological changes of the past two centuries have rendered obsolete our way of looking at the world. Not only are our ways of thinking obsolete, but our continuing to inculcate them in our children has created an impending cultural crisis: A culture becoming incompatible with its environment and oblivious of its trend to self-destruction. Our collective identity has become local and synchronic. We connect with what is immediately contiguous, and with what is current and continuous. We either ignore or are unaware of the broader contexts essential to our actions and our survival. In remedy, there has been a call for "reentification", which means the depackaging of our traditional and current associations between the elements of our experience and coming up with alternate connections and patterns more isomorphic to the real nature of the world we inhabit. This requires a revolution in our way of thinking, in our way of organizing, in our way of evaluating. Such a revolution would not only revise our educational system, but many of our other basic institutions–legal, political, commercial, ~~and even~~ and especially religious.

In the present world order we find that the major decisions are being made by people totally unqualified to make them. The important decisions in today's world involve complex technical, economic, and ethical issues. And those making the critical decisions lack the technical, historical, and philosophical backgrounds needed for meaningful resolution of the issues. At an earlier period legal training was held to be sufficient for doing legislation. This is no longer the case. In fact legal training, how to think like a lawyer, is deleterious to useful decision making in today's world. But worse, the psychological types of people attracted to political power are exactly those who should never hold political power. (~~Even those of this species see the truth of this in an extreme case such as that of Bolton~~). Noteworthy, over 2500 years ago, Confucius came to the conclusion that "those who desired political power should automatically be disqualified.

---

[1]This trade-off may also be stated as: Insight vs Movement, Awareness vs Focus. In general, Action takes two forms: movement and selection.

POPMAT.WPD May 29, 2005

# A PEOPLE MATRIX

| SPECIES | TALK ABOUT | FOCUS QUESTIONS | PURSUIT | PRODUCT | VALIDITY PER |
|---|---|---|---|---|---|
| WATCHERS | OTHER PEOPLE | WHAT —>WHO | CERTAINTY | INSTITUTIONS | AUTHORITY |
| DOERS | THINGS | WHAT—>HOW | UNDERSTANDING | TECHNOLOGY | UTILITY |
| THINKERS | IDEAS | WHAT—>WHICH | ALTERNATIVES | KNOWLEDGE | EMPIRIO/LOGIC |
| SEARCHERS | SILENCE | WHAT—>WHY | MYSTERY | MORE MYSTERY | RECOGNITION |

Watchers, spectators, are the vast majority. They like certainty, win/lose games. They formulate experience in dyads: us/them, right/wrong, good/evil, making the world as simple as possible. They need to belong, be one with the gang, and join institutions political parties, churches, to fill this need. Given various situations , their first question is 'who is involved'. [For example, if given there is a design, who designed it? ]

Doers, innovators, entrepreneurs, are perhaps 5 % of the total population. They like to know how things work and how to make them work. They can be competitive but prefer win/win games. They also prefer controlling to merely belonging. They validate in terms of usefulness, but often confuse profit with utility. [If given there is a design, they try to reverse engineer it]

Thinkers are a very small percentage of the population, << 1% . They like to shuffle the dots on the table and see alternate ways to organize them. But they frequently are attracted to a particular theory, ideology, or arrangement of the dots and replace the multiplicity of possibilities with a single paradigm or choice. [If given there is a design, how can it be extended?]

Searchers, explorers, artists, are few, but needed. They like to discover and create new dots. These are the ones who either enlarge the box, break out of it, or sometimes end up playing Pandora. For them success is not completing and serving a meal, but enlarging the menu. They are not really concerned with validity or truth. Their interest in the existing world has to do with what does it tell us about what might be. [If given there is a design, what alternatives are possible?]

DIVERSITY.WPD June 12, 2005

*O God, who created all peoples in your image, we thank you for the wonderful diversity of races and cultures in this world. Enrich our lives by ever widening circles of fellowship, and show us your presence in those who differ most from us, until our knowledge of your love is made perfect in our love for all your children; through Jesus Christ our Lord.* Amen BCP 840

Our problems with each other do not derive from irreconcilable differences but from irreconcilable similarities. We will not have peace when we all become alike; rather we shall have peace when there is sufficient diversity among us. This will be an *ecological peace*, such as persists among diverse species in an ecology. It operates according to the rule: "From each according to its special skills and talents, to each according to its special needs". [This basic rule governing ecologies and biological complexes was around for thousands of years before appropriated by Marx and Engels.]

There are numerous illustrations of conflicts arising from being too similar. For example, World War I was not caused by the differences in various European cultures, but by the fact they were so much alike. Particularly, differences between English and German culture were not the cause of conflict, but their identical views concerning colonialism, military and naval power were. However, to explain the causes of such conflicts to the public, some superficial item is resurrected, emphasized and magnified. [eg The Kaiser's speech to the troops headed for China in 1900 to put down the Boxer Rebellion, "Be like the Huns of old", became in 1914, the Germans are Huns. But the overlooked similarity is that the British also sent troops to China to put down the Boxer Rebellion.] It could be that another factor in European wars was that all the rulers, kings, czars, emperors, etc all thought alike, having too many of the same genes from generations of interbreeding.

The founders of These United States, were wise men in creating unity while permitting diversity among the states. But when <u>These</u> United States became <u>The</u> United States about 1830, civil war became inevitable. In the history books, the issue of slavery has obscured all the other underlying causes of the war. While slavery needed to be abolished, there were many options besides war for doing so. But the reformulation of "These United States" into "The United States", the placing of limits on political diversity, changed the original vision of diffused power to centralized power and made war inevitable. The subsequent centralization lead eventually to White House Imperialism. and executive privilege

The political spectrum ranges from imperialism, colonialism, globalism, to confederation, cultural diversity, social ecology. But the bottom line is that diversity is the key to emergence, innovation and survival while centralization and homogenization is the path to power, conflict, and destruction..

THE TAO THAT CAN BE EXPRESSED IS NOT THE ETERNAL TAO;
THE NAME THAT CAN BE DEFINED IS NOT THE UNCHANGING NAME.
—TAO TE CHING

Every symbol truncates
Every articulation truncates
Every clarification truncates
Every explanation truncates

No Symbol Can Capture the Whole
of What it is Supposed to Represent

The world of symbols is but a faint echo of the world they claim to represent.
Yet
"SYMBOLS PARTICIPATE IN THE WORLD THEY REPRESENT"
—Paul Tillich

First, we create symbols to map the world of Tao, seeking to make our symbols isomorphic to their referents.

Second, we manipulate the symbols, creating macros and structures that have no counter parts in the antecedent world.

Third, we find that our ability to manipulate symbols gives us power to create whole new worlds out of our images and symbols. But soon our world of words and symbols no longer maps the real world.

Fourth, our symbol world invades the real world and we begin to act as though the symbol world were the real world and try to impose rules on the real world that we have created with our symbols.

When we find we can play God by creating symbol worlds, we become arrogant and create quasi realities in which those who must work in the real world suffer from the decisions of those in control of the symbol world. Workers who work in the real world are impoverished by financiers who shuffle monetary symbols in the symbol world. Soldiers die in wars in the real world that are created by the rivalries and greed of rulers in the symbol world. Rules and laws violating the basic principles which order the natural world are made by politicians in the symbol world. And reverence for the natural order is replaced by worship and allegiance to assorted religious and national symbols. But the world of nature can support erroneous and corrupt fabrications for only so long. Sooner or later the symbol worlds and their adherents are terminated.

TYPES01.WPD June 23, 2005

# TYPES[1]

The rule oriented
The ruled oriented

EXPLORERS +
Whatever exists, I want to find it.
Builds diversity

COLLECTORS +
Whatever exists, I want to own it
Builds homogeneity

Provers:
In most societies
at some age 12-20
males must prove themselves

OZBEKIANS[2] +++
Whatever exists, I want to do best it
Win/lose centered

ORGANIZERS
Whatever exists, I want to put it in order
Builds complexity

CRUSADERS ++
Whatever exists, I want to convert it
Builds homogeneity [~cancer cells]

REBELS ++
Whatever exists, I oppose it
Creates fragmentation

CREATORS +
Whatever exists, I want to extend and develop it
Builds diversity [~stem cells]

IMITATORS +++
Whatever exists, I ~~want to~~ just copy it
Builds multiplicity

---

[1]Types followed by a + seek to attract attention to themselves

[2]Ozbekian's Law states that if we can do something we will do it. Ozbekians feel that they must do something to see if they can do it.

PYTHINTR.WPD July 4, 2005

# MANIFEST AND UNMANIFEST

Human experience can be divided into between what is manifest and what is unmanifest, between facts and their interpretations, between what is perceived and what is surmised, between what actually occurs and how we explain it.

The Unmanifest: The invisible relations, the links, forces, bonds, and bridges, that join the visible parts and things of the world: and the walls, fences, gaps and voids that separate the visible parts and things of the world.

The Manifest is organized in accord with unmanifested infrastructures. The patterns we see are various manifestations of those infrastructures: patterns in form, patterns in spatial distribution, patterns of movement, patterns of change

The manifest leads us to the exploration of the unmanifest, to the exploration of the forces that join or separate what is manifest.

Nodes and Links: nodes are manifest, links are unmanifest. We mentally speculate on the nature of the the links: We have made hypotheses such as gods, demons, angels, that lurk behind the organizations of the nodes, or more recently, have postulated physical forces and psychological proclivities to join or separate the observed nodes. These forces are usually characterized as attracting or repelling , contracting or expanding, constant or evolving, effecting emergence or extinction, stability or instability, growth or decay.

Some organizations are very familiar to us, especially those based on spatial contiguity and temporal continuity. But these traditionally accepted organizations may be illusory, or if not illusory, be insignificant compared to deeper more universal organizations that have escaped our way of sensing and thinking.

The Hopi peoples felt that the most important dichotomy in the human relationship to the world was what was manifest versus what was unmanifest. Since the primary sensory input for humans is visual, the dichotomy in effect reduces to what is or is not visually perceived. We take reality to be what is observed, the manifest, and we supplement the manifest with hypothetical sets of relationships that join or separate what we observe. What is manifest is given, the unmanifest is speculation.

TIMEFORCE.WPD July 6, 2005

# MORPHOLOGY OF FORCES [PART I]
## Sub-case $\hbar = 0$

The first physical notion of time was: time = distance/velocity, $t = L/c$

The next was Keplers: time$^2$ $\propto$ distance$^3$, $\tau^2 \propto L^3$, refined by Newton to: $\tau^2 = L^3/GM$

The third was Schwarzschild's, $T = GM/c^3$

The fourth was Planck's, $t_o^2 = G\hbar/c^5$

* * * * * * * * * * * * * * * * * * * * * * * * * * * *

Substituting the above values for time in the formula, Force = Mass x Length / Time$^2$, force can be expressed as:

1) $$\mathbf{F_t} = \left(\frac{\mathbf{M}}{\mathbf{L}}\right)^{1} \cdot \mathbf{C}^2$$ eg centrifugal with c –> v

2) $$\mathbf{F_\tau} = \left(\frac{\mathbf{M}}{\mathbf{L}}\right)^{2} \cdot \mathbf{G}$$ eg gravity

3) $$\mathbf{F_T} = \left(\frac{\mathbf{M}}{\mathbf{L}}\right)^{-1} \cdot \frac{\mathbf{C}^6}{\mathbf{G}^2}$$ eg here strength $\propto$ L, strong force ?

4) $$\mathbf{F_{to}} = \left(\frac{\mathbf{M}}{\mathbf{L}}\right)^{0} \cdot \frac{\mathbf{C}^4}{\mathbf{G}}$$ The Planck force

In general,

with $\hbar = 0$, force can be written in the form: $$\mathbf{F} = \left(\frac{\mathbf{M}}{\mathbf{L}}\right)^{a} \cdot \mathbf{c}^{4-2a} \cdot \mathbf{G}^{a-1}$$

KALPASUP.WPD July 8, 2005

# HUBBLE AND THE KALPAS

The units of the Hubble parameter, $H_o$, are in kilometers/second/megaparsec.
One megaparsec is equivalent to 19.489352 kilometers [$\log_{10}$ value]
Hence an $H_o = 1$ is equal to -19.489352 $sec^{-1}$
Or an $H_o = V$ gives a frequency of logV -19.489352 $sec^{-1}$, or a time of 19.489352 - logV sec

The current value proposed for the Hubble constant, $H_o$, is about 72 km/sec/mpc.
Let us use the value $H_o = 71.994$[1] . From this value we get a Hubble time of 13.584465 B.Y.
This corresponds to an age of the universe of 9.056310 B.Y. , with $\log_{10}$ value = 0.956951 B.Y
This is equivalent to 9.956951 years or 17.456064 seconds ($\log_{10}$ values)

A Kalpa or day in the life of Brahma is defined as $4.320 \times 10^9$ years
[with a $\log_{10}$ value of 9.635484 years = 17.134596 seconds]
If the age of the present Brahma began with the Hubble time, then

| | | |
|---|---|---|
| the first Kalpa began | $13.584 \times 10^9$ years ago | Big Bang |
| the second Kalpa began | $9.264 \times 10^9$ years ago | First generation stars |
| the third Kalpa began | $4.944 \times 10^9$ years ago | Second generation stars, sun |
| the fourth Kalpa began | $624 \times 10^6$ years ago | In the Sinian Era[2] |

The present Brahma is now in his fourth day.

On the other hand, if the universe began about 9.056310 billion years ago, then the lifetime of the present Brahma began with the Big Bang and:

| | | |
|---|---|---|
| the first Kalpa began | $9.056 \times 10^9$ years ago | Big Bang |
| the second Kalpa began | $4.736 \times 10^9$ years ago | Age of sun |
| the third Kalpa began | $416 \times 10^6$ years ago | in the Silurian period[3] |

The present Brahma is now in his third day.

---

[1]This value of the Hubble parameter derives from the assumption that the age of the universe is given by $(r_e/l_o)^3 t_o$ , where $r_e$ is the electron radius, $l_o$ is the Planck length and $t_o$ is the Planck time.

[2]The Sinian era was from about 800 to 570 million years ago, time of the oldest animal fossils. The Cambrian Period began 570 million years ago, with the great Cambrian radiant at about 530 million years ago.

[3]The Silurian period , 439-409 million years ago, time of the first land plants. [The first recorded extinction was about 440 million years ago.]

JULY1605.WPD July 16, 2005

THE SIXTEENTH OF JULY, 2005 A.D.
Sebastopol, California

Four particular events taking place today coalesce to describe not only what we are doing, but who we are and where we are heading.

First, An event that is both local and global, local in action, global in consequences. The semi-secret annual assembly of the rich and powerful, the corporate and government CEO's, at Bohemian Grove a few miles west of here.

Second, Close by the Bohemian Grove at Duncan Mills, the annual re-enactment of battles of the Civil War by California horse and gun buffs. This event, though local in place celebrates anniversaries that continue in time.

Third, an almost forgotten anniversary, Trinity. On the 16th of July, 1945, sixty years ago today, in the New Mexico desert, the first atomic bomb was detonated, an event global in consequence and diachronic in time.

Fourth, In bookstores, both local and throughout the English speaking world, people crowding in lines to buy the latest Harry Potter release.

What, besides the confluence of date, do these events have in common?

When these events are juxtaposed, they can tell us who we really are, they can tell us about our psyches. They can tell us what we chose to remember and what we chose to forget; where we put our focus and where we avert our gaze. They can tell us about our priorities, both synchronic and diachronic; and about what we are willing to change and what we will not let go.

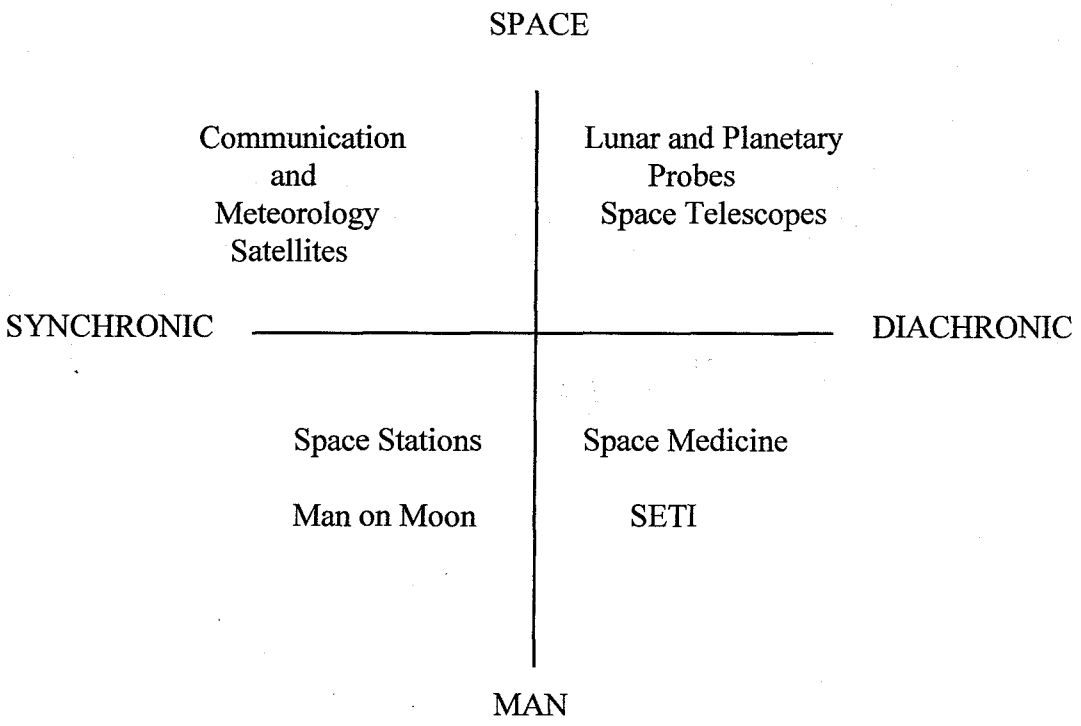
These four events put into perspective our relative regard for the synchronic and the diachronic. We have become an overwhelmingly synchronic culture. Our focus is on the "now", on this week's report, on this week-end's party, this month's poll, this season's books and movies, this quarter's bottom line, this administration's re-election prospects. These are the central themes of the discussions currently taking place at the Bohemian Grove and in most of the offices and households throughout the country. But while the synchronic is obsessed with the "now", it is definitely not static. It is replete with novelties and fads, new gimmicks and new celebrities, new winners and new losers, new crimes and new weapons. The synchronic is action and movement, but action and movement are not change, are not the metamorphoses that are required by the diachronic for cultural or species survival..

To live we must be synchronic, but we do not live by bread alone. To survive we must be diachronic. Why do those buffs want to re-enact the Civil War every year? Slavery is gone, the Civil War is long over, or is it? Are there lessons from that war that we have overlooked? Are the buffs subconsciously seeking through their re-enacting to unveil something that has been missed? Each year is filled with anniversaries. Even our synchronic culture pauses a few moments to play taps and speak of sacrifices, hoping in doing so to keep the diachronic at a distance. The past has not passed, and the past even more than the present, controls the future. Taps and speeches are not the proper remembrances for the event of 60 years ago in New Mexico nor of the event only three weeks later at Hiroshima. The future and human survival both demand different forms of cultural interaction with the diachronic

SPACEAGE.WPD July 17, 2005

# SOME NOTES ABOUT EXPLORING SPACE

The "official" beginning of the space age has been taken as the launching of Sputnik by the Russians on the 100th anniversary of the birth of K. E. Tsiolkovski, October 4, 1957. [1] This was followed in rapid succession by the launch of several earth orbiters by both the USSR and the USA. The first non-orbiter was the Soviet Mechta sent to the moon January 2, 1959. The first man in space was Yuri Gagarin, April 12, 1961. As the ability to penetrate space grew, the effort split into two modes and two objectives. The two modes were manned and unmanned exploration, The two objectives were knowledge, discover what was out there, and put our capabilities in space to practical uses. In the manned-exploration of space we hoped to learn not only about space but about ourselves. And perhaps eventually to learn how to ask some "non-earth" questions. In unmanned exploration we hoped to learn answers to many earth-based questions, but perhaps little else.




[1]The first recorded attempt to launch something from earth into orbit was made by Fritz Zwicky and a group from CalTech at White Sands, New Mexico, on December 14, 1948 using a two stage V-2 / Wac Corporal rocket equipped with a shaped charge device. Whether the small particles fired by the shaped charge went into orbit is not known. No trails were photographed.

# A SPEECH FOR MY FOUR SCORE AND SEVENTH BIRTHDAY

Four score and seven years ago I came to this planet, unaware that it was engaged in a great civil war testing whether the human species or any species so obsessed with and so dedicated to war could long endure.

Now we are met on a great battlefield of that war to determine whether we can find a final resting place for the kinds of thinking and organizing that have lead us to view the differences in our own species as being the enemy. It is altogether fitting and proper that we do this. But, in a larger sense we cannot correct, we cannot castigate, we cannot objurgate the inherent human flaws that proliferate this obsession. It is for us the living, rather, to be dedicated to the unfinished task of those who have forwarded the search for peace and diversity so that our human species may survive.

We here highly resolve that their efforts shall not have been in vain. But that this species, under God, shall have a new birth of wisdom, and that the diverse peaceful creations of humanity, by humanity, and for humanity shall not perish from the earth.

PLANCK01.WPD August 1, 2005

# THE PLANCK PARTICLE

| | | $\log_{10}$(cgs) | | | | | $\log_{10}$(Gev) |
|---|---|---|---|---|---|---|---|
| $m_o = \sqrt{\hbar c/G}$ | = | –4.662199 | mass | gm | [M] | $E_o / c^2$ | |
| $l_o = \sqrt{\hbar G/c^3}$ | = | –32.791545 | length | cm | [L] | $\hbar c / E_o$ | |
| $t_o = \sqrt{\hbar G/c^5}$ | = | –43.268366 | time | sec | [T] | $E_o / p_o$ | |
| $E_o = \sqrt{\hbar c^5/G}$ | = | +16.291442 | energy | erg | $[ML^2/T^2]$ | Eo | +19.086742 |
| $f_o = c^4/G$ | = | +49.082989 | force | dyne | $[ML/T^2]$ | $E_o / l_o$ | |
| $e_o = \hbar c$ | = | –16.500103 | charge | | $[ML^3/T^2]$ | $E_o \cdot l_o$ | force · $L^2$ |
| $p_o = c^5/G$ | = | +59.559810 | power | | $[ML^2/T^3]$ | $E_o / t_o$ | |
| $a_o = \hbar$ | = | –26.976924 | action | | $[ML^2/T]$ | $E_o \cdot t_o$ | |
| $v_o = c$ | = | +10.476821 | velocity | | [L/T] | $\sqrt{(E_o/m_o)}$ | |
| $q_o = \sqrt{\hbar c^3/G}$ | = | +5.814622 | momentum | | [ML/T] | $\sqrt{(E_o \cdot m_o)}$ | $E_o/c$ |
| $\gamma_o = c^7/\hbar G^2$ | = | +114.666079 | pressure | | $[M/LT^2]$ | $E_o / l_o^3$ | force/ $L^2$ |
| $\rho_o = c^5/\hbar G^2$ | = | +93.712439 | density | | $[M/L^3]$ | $E_o / l_o^3 c^2$ | |
| $\sigma_o = \sqrt{c^{11}/\hbar G^3}$ | = | +81.874533 | dynes/cm | | $[M/T^2]$ | $E_o / l_o^2$ | |
| $\theta_o$ = | = | +32.151358 | temperature °K | | $[ML^2/T^2]$ | $E_o / \beta$ | |

Notes:

$q_o \cdot c = E_o$

$\sigma_o = f_o / l_o$

$\theta_o$, the Planck termperature is given in degrees kelvin. ,
$\beta$ is Boltzman's constant = –15.859916 ergs/ °K ($\log_{10}$ value)

G assumed = -7.175705

AUGUST 6, 2005
THE FEAST OF THE TRANSFIGURATION
SIXTY YEARS FROM HIROSHIMA

The event of sixty years ago this day, unlike most events, defies being written into the history of the past. This is because, although located in the past, this event has not passed. It continues to exist in the present and appears on every menu of the future. Our intellects have analyzed it but our psyches cannot internalize it. Its implications write too large for mankind's future. The intersect of our imbedded natures with our new capabilities infers something we prefer not to look at: The clear potential for suicide by the species homo sapiens sapiens.

There are several competing "official" histories of this event and arguments wage between their supporters. Here are some of the facts:

- July 16, 1945, 5:30 a.m.: An atomic bomb, was successfully exploded in the desert near Alamogordo, New Mexico, Code Name: TRINITY. [1]
- U.S. intelligence had decoded that the Japanese were willing to negotiate surrender.
- August 6, 1945, 8:16 a.m.: An atomic bomb was dropped on the city of Hiroshima killing over 70,000
- August 8, 1945: The USSR entered the war against Japan.
- August 9, 1945, 11:02 a.m.: An atomic bomb was dropped on the city of Nagasaki killing over 40,000
- August 14, 1945: The Japanese Emperor announces the decision to surrender.
- September 2, 1945: Formal Japanese surrender on the Battleship Missouri.

The arguments for dropping the bombs included:

- Military necessity. The Japanese needed to be forced to surrender. There would be hundreds of thousands of deaths on both sides in an invasion of the Japanese islands.
- The Soviet Union needed to be reminded that it would not participate in an occupation of Japan.
- The assertion that the USA was to be number one in the post war world.
- The two billion dollars spent on the Manhattan Project must not appear to have been spent for nothing.
- A politically required act of revenge for Pearl Harbor.
- Ozbekian's Imperative: If we can do it, we must do it.

The arguments against dropping the bombs included:

- Why would not a demonstration of the bomb give Japan ample face saving to surrender
- Hiroshima was not a top military target. Nor its location one suitable for invasion.
- Granting the military necessity arguments, why was the second bomb necessary?
- After Trinity, most of the scientists who created the bomb opposed its use.

Conclusion:

Ending the war was neither the purpose nor the result of the atomic bombings.

---

[1] As the mushroom cloud rose, Robert Oppenheimer quoted the Bhagavad-Gita, "I am become death, the shatterer of worlds"
After receiving news of Trinity, Winston Churchill said, "Now they have given matches to the children"

60 ANIVre.WPD

TIMEMEAS.WPS August 18, 2005

# MEASURING TIME

The operational definition of time:
"Time is what is measured by a clock" –P. W. Bridgman

Humans have been measuring time for millennia, but still are not sure just what it is they are measuring. And if Professor Bridgman's definition of time is correct, then we might ask, if we measure time by an hour glass, by a water clock, or by monastery bells, are we measuring the same thing that a mechanical clock measures? It may be that while all devices measure the same essence, each different device measures some different aspect, attribute, or component of time. Whether this is so, different measuring devices do emphasize and project different "feelings" about the nature of time.

The oldest measuring device of time was the sky, the cyclical positions of the sun, giving us the day and the year; the positions and phases of the moon, giving us the month. Wherever we went, the same sun was there, regularly repeating its voyage through the sky. This emphasized the feeling that time must be the same everywhere, time was universal and absolute. And these ancient inferences from the sky of a single fundamental and universal time still dominate our present day view of time. But also implicit in the sky clock was the cyclical nature of time. Time was made of ever repeating cycles.

In time the ancients developed devices with finer temporal resolving power than those afforded by the motions of the sun and moon. Water clocks and sand clocks (hour glasses) were devised that could measure a fixed interval of time depending on the amount of water or sand transferred from an upper container to a lower container. While these measuring devices could be rendered cyclical, as by regularly refilling the water chamber or inverting the hour glass, this required the intervention of an outside agent. But without the intervention of some outside agent, the period came to an end. This had inferences that were projected into ancient religious thought: Time comes to an end. There will be an end to the present order and then some deity will come to renew the world. There will be a new Brahma, and a new life time of Brahma, A messiah will come, A savior will return and there will be a day of judgement.

In the middle ages arrived another measuring device for time: the monastery bells telling us when to rise, when to pray, to eat, to work, to return, to pray and to sleep. The bells told us that different times were appropriate for different tasks. This has evolved to our present day structuring of time with schedules, our nine to five and 7/24.

In the 14th century, mechanical clocks began to appear on towers in different cities. These clocks not only changed civil life, they changed the world view. The cyclical movement of the hands of the clock reprojected the importance of cyclicity onto life. Science, the study of the repetitive and regularly repetitive was born. The concepts of frequencies, electromagnetic waves, atomic spectra, bio-rhythms all followed. Philosophers explained the cosmos as basically being a clock. God became a clock maker.

And with century 21 arrives the digital clock. A number changeless for a brief period, then an instant of change, another number changeless for a moment, then a change, number, change, number, change,... What will this digital clock do to our view of time and to our world views? Will it make us aware that time may speed and slow, that the "now" may sometimes be short, sometimes long. And though ultimately cyclical, the parts of a cycle may not all be continuous, but mix before with after. Histeron proteron.

THEMES01.WPD September 9, 2005

# QUESTS AND SEARCHES

**First, a discrimination:**

A quest is seeking a predefined specific destination. While a quest's path may be winding, it is guided by a compass that always points to a selected goal. A quest may be either synchronic or diachronic, but all quests ultimately converge to termination either in success or in extinction.

A search, on the other hand, is exploring, not to find anything specific, but to discover what is there. There is neither path nor compass, only a pathless prairie or an infinite ocean. Searches, if they are pure, are always diachronic, always diverge, and never terminate.

**Second, some questions:**

Must search be altered with quest?

If what is discovered in a search is to be retrieved, the search must alter with a quest for an organizing infrastructure to contain what was discovered.

When is science a quest and when a search?

Science is a quest interrupted by quest created searches. Science is primarily a quest to organize known phenomena, using established mathematical and logical tools, into a desired "theory of everything". But in the process of seeking this theoretical "Holy Grail", it repeatedly stumbles onto new phenomena that derail the quest and force it back to the drawing boards. While the inadvertent stumbling onto new phenomena, with the answers creating new questions, is not itself an intentional search, it becomes in effect a search that is an inevitable side effect of its quest.

Is bio-evolution a quest or a search?

If a quest, is there a detectable goal, some super species, some supreme ecological complex? Or if a search, for diversity then more diversity, and for diverse complexity and complex diversity?

Is it possible for humans to conduct a pure search?

I doubt it.

In all of the above, there is the assumption that the seeker is distinct from the quest and the searcher is distinct from the search, but quantum mechanics has taught us that the observer is never distinct from what is observed. We must allow that the quest itself becomes the seeker, and the search itself becomes the searcher. And in the special case of bio-evolution, the selection becomes the selector. And in the general case of the cosmos, the design becomes the designer.

---

I have found that my personal quest is to discover alternatives, to find new ways of seeing familiar things. This is, of course, not a specific quest but a "semi-search". But beyond this, my personal search is to explore the great Mystery, to engage the novel, the strange and the surprising; and always continue further to encounter ever increasing Mystery.

PACKLABL.WPD September 26, 2005

# PACKAGING AND LABELING

This subject applies to the laws of aggregation, the laws of change, to logic, to science, to theology, to psychology, to sociology, to economics, and in fact to just about everything.

## PACKAGING:

In the course of bio-evolution–selection becoming selector–there is convergence to a set of species or gene packages. These packages co-exist, either symbiotically or competitively, but after living together over a period of time tend to become organized in some form of "pecking order". And this pecking order in turn becomes ossified restricting change and further evolution. As both cause and consequence of this ossification, the "top species" decides it wants to replace the cosmos' basic ontological rules with its own views and rules. But it happens that one of the cosmos' basic rules is never to allow this to happen. And it prevents this from happening by providing for the fragmentation or depackaging of all ossified orders. In the annals of paleontologists, these fragmentations take the form of extinctions and radiants. In the records of historians, depackaging has occurred from wars, revolutions, and natural disasters. But in every case, some major change in **context** takes place resulting in the displacement of the well adapted, "the winners", and allowing the depackaged pieces to reorganize in a new way. This is one of the fundamental **laws of change**.

We are not conscious of many of the things that have become packages in our thinking. For example, the Bible has become a package for many. While the scriptures are writings from many sources over several centuries, many people hold that the selections packaged by certain committees seventeen centuries ago constitute an inviolate package. There are also several packaged political beliefs–conservatism, liberalism, and economic beliefs–capitalism, socialism. These packages inhibit the filtering and selection of the useful and valid from the useless and obsolete. And virtues and values have been packaged so that loyalty must always be to policy and courage only with military action.

## LABELING:

While the labels assigned to species have little meaning in bio-evolution, labels play an important role in social and cultural evolution. Labels dominate our thinking about race, religion, and politics, and influence the way we think about most of the inanimate objects we live with. Labels bundle the rich diversity of the world into a small number of tractable packages in order to accommodate our limited information processing powers. Packaging and labeling are the primary tools of advertisers and the WMD[1] of spin doctors. In fact, labels have become the bonds that create a society and formulate its world view. But beyond just packaging, labels tend to divide the world into good/evil, winners/losers, us/them. And some labels–democracy, freedom, peace, justice, have become so vague and orwellian that their original meanings have disappeared. or general all/nothing

[1]Weapons of Mass Deception

PRODSUM1.WPD October 6, 2005

# PRODSUM PAIRS PART I

Prodsum pairs are pairs of numbers whose sum is equal to their product.

$$1) \quad x + y = x \cdot y$$

Two basic questions associated with prodsum numbers:

First, given any real number x, what is its prodsum partner y, ?

It follows immediately from equation 1) that

$$y = x/(x-1) \text{ and } x = y/(y-1)$$

Further, if p represents the product or the sum of x and y, then

$$2) \quad p = x^2/(x - 1) = y^2/(y - 1)$$

Second, given any real number p, what are the prodsum numbers x and y such that

$$x + y = x \cdot y = p \, ?$$

From equation 2), $p = x^2/(x-1)$, we have $x^2 - p \cdot x + p = 0$

The two roots of this equation are,

$$x = [p + \sqrt{(p^2-4p)}]/2 \text{ and } y = [p-\sqrt{(p^2-4p)}]/2$$

---

Properties of prodsum pairs:

$x + y = x \cdot y = p$ $\qquad$ $x = y/(y - 1), \quad y = x/(x - 1)$

$p = y^2/(y - 1) = x^2/(x - 1)$

$x = [p + \sqrt{(p^2 - 4p)}]/2$ , $\qquad$ $y = [p - \sqrt{(p^2 - 4p)}]/2$

$x^2 + y^2 = p^2 - 2p$ , $\qquad$ $x^2 - y^2 = p\sqrt{(p^2 - 4p)}$

---

Some examples of prodsum pairs:

If $x = \pi = 3.141592....$, Then $y = \pi / (\pi - 1) = 1.466942 ....$

$(3.141592) + (1.466942) = 4.608534$ and $(3.141592) \cdot (1.466942) = 4.608534$

and $\pi^2/(\pi - 1) = 4.608534$

If $p = \pi = 3.141592....$, then

$x = [\pi + \sqrt{(\pi^2 - 4\pi)}]/2 = 1.570769 + i\ 0.821095$

$y = [\pi - \sqrt{(\pi^2 - 4\pi)}]/2 = 1.570769 - i\ 0.821095$

If $x = 5 - \sqrt{15} = 1.127017....$, Then $y = 5 + \sqrt{15} = 8.872983....$

$(1.127017) + (8.872983) = 10$ and $(1.127017) \cdot (8.872983) = 10$

If $p = 10$ then,

$x = [10 + \sqrt{(10^2 - 40)}]/2 = 1.127017...$

$y = [10 - \sqrt{(10^2 - 40)}]/2 = 8.872983....$

PRODSUM2.WPD October 9, 2005

# PRODSUM PAIRS PART II

Prodsum pairs are pairs of numbers [x,y] whose sum is equal to their product:

$$x + y = x \cdot y = p$$

In terms of p, $x = [p + \sqrt{(p^2 - 4p)}]/2$ and $y = [p - \sqrt{(p^2 - 4p)}]/2$

TABLE 1. gives the values of the prodsum pairs corresponding to some integer values of p.

TABLE 1.

| p | y | x | $y^2/2$ | $x^2/2$ | $\sqrt{}$ |
|---|---|---|---|---|---|
| -6 | -6.872983 | 0.872983 | 23.618947 | 0.381050 | 60 |
| -5 | -5.854101 | 0.854102 | 17.135255 | 0.364745 | 45 |
| -4 | -4.828427 | 0.828427 | 11.656853 | 0.343146 | 32 |
| -3 | -3.791288 | 0.791288 | 7.186932 | 0.313068 | 21 |
| -2 | -2.732051 | 0.732051 | 3.732051 | 0.267949 | 12 |
| -1 | -1.618034 | 0.618034 | 1.309017 | 0.190983. | 5 |
| +4 | 2 | 2 | 2 | 2 | 0 |
| +5 | 1.381966 | 3.618034 | 0.954915 | 6.545085 | 5 |
| +6 | 1.267949 | 4.732051 | 0.803847 | 11.196153 | 12 |
| +7 | 1.208712 | 5.791288 | 0.730492 | 16.769508 | 21 |
| +8 | 1.171573 | 6.828427 | 0.686291 | 23.313708 | 32 |
| +9 | 1.145898 | 7.854101 | 0.656541 | 30.843459 | 45 |
| +10 | 1.127017 | 8.872983 | 0.635083 | 39.364917 | 60 |

- The $\sqrt{}$ column gives the values of $\sqrt{(p^2 - 4p)}$
- The values of x and y are imaginary for p = 1, 2, and 3 and = 0 for p = 0.
- For p = +5, $y = 3 - \Phi$ and $x = 2 + \Phi$; for p = -1, $x = \Phi - 1$ and $y = -\Phi$
- Note that for all p, $(x^2 + y^2)/2 = p \cdot (p-2)/2$; and $x^2 \cdot y^2/4 = p^2/4$
- There are several correspondences between the "plus p's" and the "minus p's"
  Corresponding p's are those whose sum = 4, e.g. p = +10 corresponds to p = - 6
  For corresponding p's the following hold:
  x(+) + y(-) = 2 ; e.g. x(+9) + y(-5) = 7.854101 - 5.854101 = 2
  y(+) + x(-) = 2 ; e.g. y(+6) + x(-2) = 1.267949 + 0.732051 = 2
  x(+) - x(-) = [p(+) - p(-)]/2
  e.g. x(+7) - x(-3) = 5.791288 - 0.791288 = 5
  and [(+7) - (-3)]/2 = 5

PRODSUM3.WPD

October 17, 2005

see also 2005 # 48

# PARALLELS BETWEEN A RECURSION FORMULA AND THE VALUES OF THREE FUNDAMENTAL CONSTANTS OF PHYSICS.

$A_{n+2} = 10A_{n+1} - 10A_n$ has the charasteric equation, $x^2 - 10x + 10 = 0$, whose solutions are $x = 5 - \sqrt{15}$ and $y = 5 + \sqrt{15}$;
with numerical values : $x = 1.1270167$
and $y = 8.8729833$
$y^2/2 = 39.3649167$

$x + y = 10$
$x \cdot y = 10$
$y - x = \sqrt{60} = 7.7459667$
$(x + y) / (x \cdot y) = 1$

$(x^2 + y^2)/2 = 40$
$x^2/2 \cdot y^2/2 = 25$

---

$\alpha\mu/x = 1.0000510$
$(y^2/2) / S = 1.0002296$
$y / \sqrt{(2S)} = 1.0001148$

---

The explicit formula for the values of $A_n$ is
$A_n = (y^n - x^n)/(y - x)$
This formula leads to the following series:
$A_0 = 0$
$A_1 = 1$
$A_2 = 10$
$A_3 = 90$
$A_4 = 800$

$\log_{10}$ values of three fundamental constants:
The fine structure constant $\alpha = -2.1368346$
The proton/electron mass $\mu = +3.2639088$
with $\alpha\mu = 1.1270742$
The coulomb/gravity force $S = 39.3558802$
with $\sqrt{(2S)} = 8.8719649$

$\alpha\mu + \sqrt{(2S)} = 9.9990391$
$\alpha\mu \cdot \sqrt{(2S)} = 9.9993627$
$\sqrt{(2S)} - \alpha\mu = 7.7448907$
$[\alpha\mu + \sqrt{(2S)}] / [\alpha\mu \cdot \sqrt{(2S)}] = 1.0000324$

$(\alpha\mu)^2/2 + S = 39.9910283$
$(\alpha\mu)^2/2 \cdot S = 24.9968136$

---

$\alpha\mu - x = 0.0000575$
$y^2/2 - S = 0.0090365$
$y - \sqrt{(2S)} = 0.0010184$

---

An explicit formula for the values of $C_n$ is
$C_n = \{[\sqrt{(2S)}]^n - (\alpha\mu)^n\}/[\sqrt{(2S)} - \alpha\mu]$
giving the following series:
$C_0 = 0$
$C_1 = 1$
$C_2 = 9.9990390$
$C_3 = 89.9814202$
$C_3 = 799.7437196$

The many parallels between the fundamental physical constants $\alpha\mu$ and S with the solutions of the recursive equation $A_{n+2} = 10A_{n+1} - 10A_n$ suggest that some form of "continental drift" may be occurring. It has been proposed by several [see Dirac, 1935] that the fundamental constants do vary in time. It may be that the original values of $\alpha\mu$ and S were 1.1270167 and 39.3949167, respectively and have drifted over 13 billion years to their present values of 1.1270742 and 39.3558802. [$\alpha\mu$ increasing and S decreasing]. However, the drift may be in the opposite direction with the present values converging to the $5 \pm \sqrt{15}$ values. [$\alpha\mu$ decreasing and S increasing]. Was there a formation template from which the universe has diverged, or is the universe converging toward a template?

THEOLOGY2.WPD October 21, 2005

cf 2003 #11

# THEOLOGY: CENTURY 21 PART II

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

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

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

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

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

As a Rabbi Cooper has said: God is not a noun, He is a Verb.

"God is a Verb"
- Rabbi David A. Cooper 1997 IV-I-3

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

EXPZONE.WPD October 27, 2005

# THE ZONE OF EXPERIENCE

The portion of the electromagnetic spectrum to which humans have direct sensory access is limited to a frequency interval commonly called red to violet, [780 to 380 nm] . There is also access to an audible frequency interval, varying largely with individuals, of from about 50 hertz to 20k hertz. In general, human sensory experience is confined to restricted regions of the various spectra of the cycles and oscillations that are the basic ingredients of a vibrating universe. However, over centuries we have been able to push back the boundaries of this direct sensory access zone using various physical instruments and mathematical inferences. But our concept of reality still rests on our experiences in a very limited "vibration zone".

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

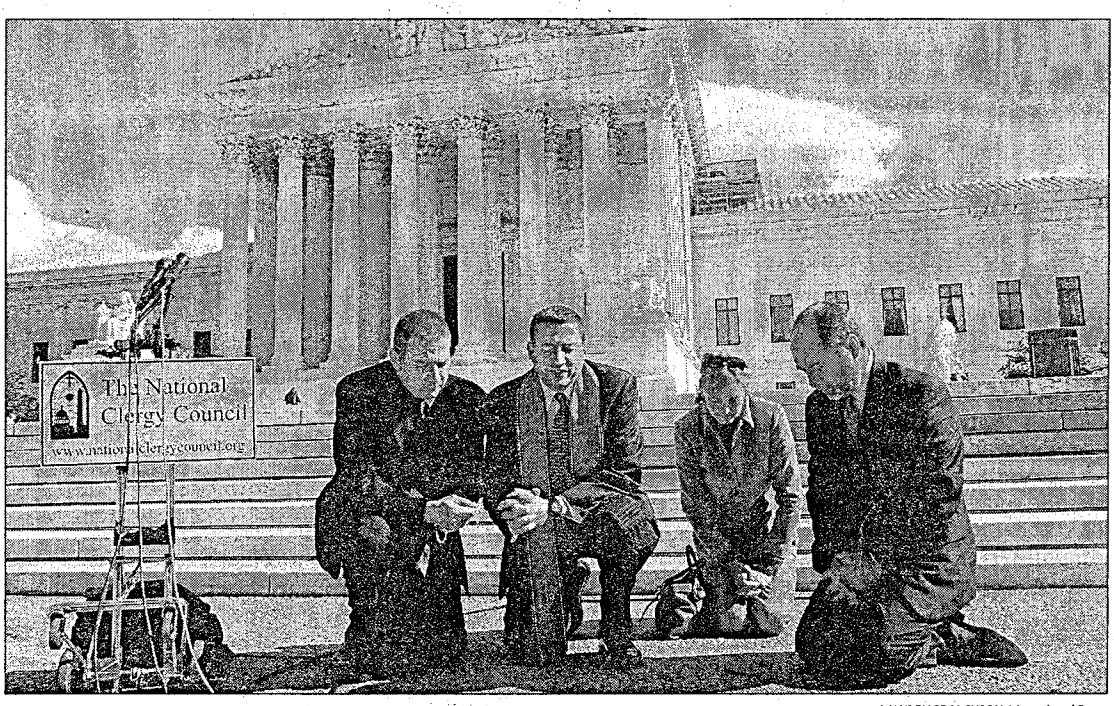
BASIC CYCLES
SINE WAVES ON-OFF PULSES

Age of universe, $10^{-18}$ hertz, | ZONE OF EXPERIENCE | Planck frequency $10^{43}$ hertz

COMPLEX CYCLES
RANDOMNESS

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

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




LAWRENCE JACKSON / Associated Press

**Praying in front of the U.S. Supreme Court, from left, Dr. Paul Schenck, with the National Pro-Life Action Center; Rev. Rob Schenck, with the National Ministry Center; Katie Mahoney and her husband, Rev. Patrick Mahoney, with the Christian Defense Coalition, voiced their pleasure Thursday after Harriet Miers withdrew her name as a nominee to the Supreme Court.**

Matthew 6:5-6.

And when thou prayest, thou shalt not be as the hypocrites are: for they love to pray in the corners of the streets, that they may be seen of men.

But when thou prayest, enter into thy closet, and when thou has shut thy door, pray to thy Father which is in secret.

PRODSUM4.WPD November 30, 2005

# PRODSUM PAIRS PART III

Measured values:

$\alpha = 0.00729735308$ $\log \alpha = -2.13683464$

$\mu = 1836.1526675$ $\log \mu = 3.26390879$

$A = \log_{10}(\alpha\mu) = 1.12707415$

---

Prodsum pairs:

$J = 5 - \sqrt{15} = 1.12701665379258311482073460021 76$

$K = 5 + \sqrt{15} = 8.87298334620741688517926539978 24$

$J+K = J \cdot K = 10$

$1/K = 0.11270166537925831148207346002176$

$10 \cdot 1/K = J = 1.12701665379258311482073460021 76$

---

The convergence of the measured value A to the prodsum value J per iteration of the formula:

$$X_2 = (X_1)^2/10 + 1$$

| | |
|---|---|
| $A =$ | 1.12707415 |
| $B = (A^2/10) + 1 =$ | 1.12702961395982225 |
| $C = (B^2/10) + 1 =$ | 1.12701957507424259678538372515 95 |
| $D = (D^2/10 + 1 =$ | 1.12701731226005263447574310274 6 |
| " | 1.12701680221338729862383684144 16 |
| " | 1.12701668724712893458104453352 37 |
| " | 1.12701666133334928352878097966 5 |
| " | 1.12701665549229693140498198190 34 |
| " | 1.12701665417570427070399707558 31 |
| " | 1.12701665387893989945555300078 42 |
| " | 1.12701665381204822171176430772 71 |
| " | 1.12701665379697061474758113960 24 |
| " | 1.12701665379357207191795048323 72 |

* * * * * * * * * * * * * * * * * * * * * * *

$J =$ 1.12701665379258311482073460021 76

Most mathematical sequences, series, continued fractions, etc. are generated by "dialectical processes" consisting of two altering operations, such as the above divide-add combination.

Continued fraction

BIMODAL.WPD November 30, 2005

# DIVERSITY IS THE PREREQUISITE for EMERGENCE

A diversity–of–opinion profile for most societies would resemble a gaussian or bell shaped distribution. In general, the greater the dispersion, the more democratic the society; the smaller the dispersion, the more totalitarian the society. But dispersion has two sides: While smaller dispersion, greater homogenization, makes a society or organization easy to control, and enhances its power and ability to take action, it regularly leads to a shorter lifetime of the organization and its agendas. On the other hand, broader diversity, debate, deliberation, slows action, but results in fewer blunders and can lead to the emergence of innovative solutions. The foregoing is true for all human organizations, be they nations, political parties, or smaller groups.

One notable example of a society with large gaussian dispersion is the Jewish Community. For some reason within Jewish society there is a liberating force that encourages differences of opinion. While Jews can readily come together when there is an external threat, when left to their own devices, they relish an openness to alternative views. [cf the Talmudic, "on the other hand".] This breadth of dispersion has resulted in a more creative society and certainly in societal longevity. Not many social orders have survived for 3000 years . But the Jews have had to perform a balancing act between maintaining a dispersion wide enough for enhancing creativity yet narrow enough to restrain fragmentation. [That is, have a large sigma while avoiding bi-modality.]

But sooner or later most societies and organizations slip from gaussian distributions to bi-modal distributions. Centralism and rigid control paralyze the system, then some divisive issue is grabbed on to justify separatism and fragmentation results. Reformations split religious institutions, secessions and civil wars split political institutions. The gaussian breaks into the bimodal and when it breaks to an even more irregular dispersion, transformation is afoot. The snake is shedding its skin.

Today American society is becoming bi-modal. Not only in the separation of rich from poor, but in an axiological split between the traditional values held by most Americans and the ruthless greed of those who make the corporate and political decisions. Foreign policy is now in the hands of corporations, and what might be profitable for certain corporate interests is not worth the price it is exacting in destroying America's vision and image together with its inspiration for peoples throughout the world. Waving the flag has been an effective device to maintain low gaussian dispersion and secure central control, but once bi-modality sets in, the usual tools of spin no longer work. The paranoia used to hold people in an atmosphere of fear is now retreating to its original source. Those who broadcast the threats of WMD and mushroom clouds are now the ones living in fear, even in fear of aircraft flying over their homes in Maryland and ranches in Wyoming.

The same paranoia that produced the bi-modality is now entering its self-destructive phase. America must never again allow itself to be guided by mental illness.

those possessed with a

Bimodality is incipient depackaging

PISIGMA5.WPD December 12, 2005

# THE AGE OF THE UNIVERSE
## Alternate Approaches

Three alternate models are compared with the relativistic model. Comparisons are made between each model's values for the Hubble parameter, Hubble time, and age of the universe.

| PARAMETER | | | |
|---|---|---|---|
| Current measures –> | $H_o = 74 \pm 7$ Freedman | HubbleTime13.7±0.2 | Age 9.133 B. Y |
| Alternate Models –> | I. $(\alpha\mu S)^{3/2}t_o$ | II. 2v - 160 | III. Two Kalpas |
| $\log_{10}$(Age) in seconds | 17.456065 | 17.459666 | 17.435626 |
| $\log_{10}$(Age) in years | 9.956945 | 9.960554 | 9.936514 |
| $\log_{10}$(Age) in B.Y. | 0.956945 | 0.960554 | 0.936514 |
| Age in Billion years | 9.056179 | 9.131749 | 8.640 |
| Half Age in B.Y. | 4.528089 | 4.565875 | 4.320 |
| Hubble Time in B.Y. | 13.584268 | 13.697624 | 12.960 |
| $H_o$ in km/sec/mpc | 71.995 | 71.399 | 75.463 |

Model I is from a template based on the observed values of $\alpha$, the fine structure constant, $\mu$, the proton/electron mass ratio, S, the coulomb/gravity force ration, and $t_o$, the planck time.

Model II derives from the properties of the recursion equation $A_{n+2} = 10(A_{n+1} - A_n)$. v being a root of the characteristic equation, with numerical value $5 + \sqrt{15}$.

Model III compares the ancient Hindu values for extremely large times with current scientific values. [see 2005 #29]

There appears to be an important cosmic cycle with a period of about 4.5 billion years. This is the estimated age of our sun, which is a second generation star. The row in the table, Half Age in B.Y. gives each model's value for this cycle.

PISIGMA5.WPD December 12, 2005

# THE AGE OF THE UNIVERSE
## Alternate Approaches

Three alternate models are compared with the relativistic model. Comparisons are made between each model's values for the Hubble parameter, Hubble time, and age of the universe.

| PARAMETER | | | |
|---|---|---|---|
| Current measures –> | $H_o$= 74 ± 7 Freedman | HubbleTime13.7±0.2 | Age 9.133 B. Y |
| Alternate Models –> | I. $(\alpha\mu S)^{3/2}t_o$ | II. 2v - 160 | III. Two Kalpas |
| $H_o$ in km/sec/mpc | 71.995 | 71.399 | 75.463 |
| Hubble Time in B.Y. | 13.584268 | 13.697624 | 12.960 |
| Half Age in B.Y. | 4.528089 | 4.565875 | 4.320 |
| Age in Billion years | 9.056179 | 9.131749 | 8.640 |
| $\log_{10}$(Age) in B.Y. | 0.956945 | 0.960554 | 0.936514 |
| $\log_{10}$(Age) in years | 9.956945 | 9.960554 | 9.936514 |
| $\log_{10}$(Age) in seconds | 17.456065 | 17.459666 | 17.435626 |

Model I is from a template based on the observed values of $\alpha$, the fine structure constant, $\mu$, the proton/electron mass ratio, S, the coulomb/gravity force ration, and $t_o$, the planck time.

Model II derives from the properties of the recursion equation $A_{n+2} = 10(A_{n+1} - A_n)$. v being a root of the characteristic equation, with numerical value $5 + \sqrt{15}$.

Model III compares the ancient Hindu values for extremely large times with current scientific values. [see 2005 #29]

There appears to be an important cosmic cycle with a period of about 4.5 billion years. This is the estimated age of our sun, which is a second generation star. The row in the table, Half Age in B.Y. gives each model's value for this cycle.

PISIGMA.WPD December 14, 2005

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

The characteristic polynomial for the recursion equation is: $x^2 - 10x + 10 = 0$, whose roots are: $v = 5 + \sqrt{15} = 8.972983...$ and $u = 5 - \sqrt{15} = 1.1270167$ .....
Some properties of v and u:

| | | | |
|---|---|---|---|
| $v + u = 10$ | $v \cdot u = 10$ | $v - u = \sqrt{60}$ | $v - u = 60^{1/2}$ |
| $v^2 + u^2 = 80$ | $v^2 \cdot u^2 = 10$ | $v^2 - u^2 = 10\sqrt{60}$ | $(v - u)^2 = 60$ |
| $v^3 + u^3 = 700$ | $v^3 \cdot u^3 = 1000$ | $v^3 - u^3 = 90\sqrt{60}$ | $(v - u)^3 = 60^{3/2}$ |
| $v^2/2 + u^2/2 = 40$ | $v^2/2 - u^2/2 = 10\sqrt{15}$ | $v^4 - u^4 = 800\sqrt{60}$ | $(v - u)^4 = 60^2$ |

Recursion Sequences:

{1} If $A_0 = 0$ and $A_1 = 1$, the $A_n$ recursion sequence becomes:
0, 1, 10, 90, 800, 7100, 63000, 559000, 4960000, ....with $A_n = (v^n - u^n)/\sqrt{60}$
n = 0, 1, 2, 3, 4. 5. 6, 7, 8,...
The sum of the first n terms = $(10 \cdot A_{n-1} + 1)$; $\lim n\to\infty\ A_{n+1}/A_n = v$, $\lim n\to\infty\ A_n/A_{n+1} = u$

{2} If $A_0 = 1$ and $A_1 = 2$, the $A_n$ recursion sequence becomes:
1, 2, 10, 80, 700, 6200, 55000, 488000, 4330000,.... with $A_n = v^n + u^n$
n = 0, 1, 2, 3, 4, 5, 6, 7,....
The sum of terms 1 through n $= 10(A_{n-1} - 1)$; $\lim n\to\infty\ A_{n+1}/A_n = v$, $\lim n\to\infty\ A_n/A_{n+1} = u$
$A_n \cdot A_{n+1} - 10^{n+1} = A_{2n+1}$

{3} The difference sequence $\Delta_n = \{1\}_{n+1} - \{2\}_n$
$\Delta_n$ = 0, 10, 100, 900, 8000, 71000, 630000, 5590000, 49600000, ...
n = 0, 1, 2, 3, 4. 5, 6, 7, 8, ...
$\Delta_n = 10 \cdot \{1\}_n$ The sum of the terms to $\Delta_n = 10 \cdot \Delta_{n-1} + 10$

{4} If $A_0 = 1$ and $A_1 = v$, the recursion sequence becomes:
1, v, $v^2$, $v^3$, $v^4$, $v^5$, .... or $A_n = v^n$
The sum of the first n terms = $(v^{n+1} - 1)/(v - 1) = 10(v^{n-1} - v^{-2})$

| | |
|---|---|
| $v^0 = 1$ | $\Sigma = 1$ |
| $v = 8.87298334620741$ | $\Sigma = 9.87298334620741$ |
| $v^2 = 78.7298334620741$ | $\Sigma = 88.6028168082816$ |
| $v^3 = 698.568501158667$ | $\Sigma = 787.171317966949$ |
| $v^4 = 6198.38667696593$ | $\Sigma = 6985.5579949388$ |
| $v^5 = 54998.1817580726$ | $\Sigma = 61983.7397530055$ |
| $v^6 = 487997.950811067$ | $\Sigma = 549981.690564073$ |

{5} If $A_0 = 1$ and $A_1 = u$, the recursion sequence becomes:
1, u, $u^2$, $u^3$, $u^4$, $u^5$, .... or $A_n = u^n$
The sum of the first n terms = $(u^{n+1} - 1)/(u - 1) = 10(u^{n-1} - u^{-2})$

PISIGMA6.WPD December 14, 2005

NUMERICAL VALUES

For u and v the roots of $A_{n+2} = 10(A_{n+1} - A_n)$

$u = 1.12701665379258311482073460021 76 = 10/v = u^2/10 + 1 = \sqrt{[10(u-1)]}$

$1/v = 0.11270166537925831148207346002177 = u/10$

$u^2 = 1.27016653792583114820734600217 6 = 10(u - 1)$

$u/v = 0.12701665379258311482073460021 76 = u - 1$

$1/v^2 = 0.01270166537925831148207346002176 = u^2/100 = (u - 1)/10$

$v = 8.87298334620741688517926539978 24 = 10/u = v^2/10 + 1 = \sqrt{[10(v-1)]}$

$1/u = 0.88729833462074168851792653997824 = v/10$

$v^2 = 78.72983346207416885179265399781 7 = 10(v - 1)$

$v/u = 7.87298334620741688517926539978 24 = v - 1$

$1/u^2 = 0.78729833462074168851792653997824 = v^2/100 = (v - 1)/10$

$u^3 = 1.43149884133248033386611401958 4$

$u^2/v = 0.14314988413324803338661140195 84 = u^3/10$

$u/v^2 = 0.01431498841332480333866114019584 = u^3/100$

$1/v^3 = 0.00143149884133248033386611401958 41 = u^3/1000$

$v^3 = 698.56850115866751966613388598042$

$v^2/u = 69.85685011586675196661338859804 2 = v^3/10$

$v/u^2 = 6.98568501158667519666133885980 42 = v^3/100$

$1/u^3 = 0.69856850115866751966613388598043 = v^3/1000$

$v^2/2 = 39.36491673103708442589632699891 2 = 5(v - 1)$

$u^2/2 = 0.63508326896291557410367300108 8 = 5(u - 1)$

$(v^2/2 - u)/2$ = 19.11895003862225065553779619934 7 = 3v - 7.5 = 22.5 - 3u

$v^2/2 - u$ = 38.23790007724450131107559239869 4 = 6v - 15 = 45 - 6u

$3(v^2/2 - u)/2$ = 57.35685011586675196661338859804 2 = 9v - 22.5 = 67.5 - 9u

$(v^2/2 + u)/2$ = 20.24596669241483377035853079956 5 = 2v + 2.5 = 22.5 - 2u

$v^2/2 + u$ = 40.49193338482966754071706159913 = 4v + 5 = 45 - 4u

$3(v^2/2 + u)/2$ = 60.73790007724450131107559239868 = 6v + 7.5 = 67.5 - 6u

---

# v, u and Φ

$\Phi^2$ = 2.61803398874989484820458683436 56

3(v-8) = 2.61895003862225065553779619934 72 = 6 - 3u $\Delta = 0.000916$

$\Phi$ = 1.61803398874989484820458683436 56

3v - 25 = 1.61895003862225065553779619934 72 = 5 - 3u $\Delta = 0.000916$

$\sqrt{\Phi}$ = 1.27201964951406896425242246173 75

$u^2$ = 1.27016653792583114820734600217 6 $\Delta = 0.001853$

$\Phi^{1/4}$ = 1.12783848556168226026483548317 69

u = 1.12701665379258311482073460021 76 $\Delta = 0.000821$

$\Phi^{1/8}$ = 1.06199740374526446403627239464 2

$u^{1/2}$ = 1.06161040584226712581595349425 17 $\Delta = 0.000387$

$\Phi^{1/16}$ = 1.03053258257333351722573729971 96

$u^{1/4}$ = 1.03034479949299842419688190612 7 $\Delta = 0.000188$

PISIGMA7.WPD December 14, 2005

# VARIATIONS ON THE $A_{n+2} = 10(A_{n+1} - A_n)$ RECURSION ROOTS

---

| | | |
|---|---|---|
| $t_o$ | $= -43.278233153096163607490284403032$ | $= 14v - 167.5 = -14u - 27.5$ |
| $t_e$ | $= -23.032266460681329837131753603482$ | $= 16v - 165 = -16u - 5$ |
| $T_\star$ | $= -2.786299768266496066773222803916 8$ | $= 18v - 162.5 = -18u + 17.5$ |
| $T_U = 2u(v-u)$ | $= 17.459666924148337703585307995648$ | $= 20v - 160 = -20u + 40$ |
| $c$ | $= 10.473981912561662506923969135844$ | $= 19.1v - 159 = -19.1u + 32$ |
| $l_o$ | $= -32.791549575155242789084241807181$ | $= 33v - 325.6 = -33u + 4.4$ |
| $r_e$ | $= -12.545582882740409018725711007616$ | $= 35v - 323.1 = -35u + 26.9$ |
| $R_\star$ | $= 7.700383809674424751632819791948 8$ | $= 37v - 320.6 = -27u + 49.4$ |
| $R_U$ | $= 27.946350502089258521991350591514$ | $= 39v - 318.1 = -39u + 71.9$ |
| $m_p$ | $= -23.782266460681329837131753603482$ | $= 16v - 165.75 = -5.75 - 16u$ |
| $m_o$ | $= -4.663316422059079181593957404134 4$ | $= 19v - 173.25 = 16.75 - 19u$ |
| $M_D$ | $= 14.455633616563171473943838795213$ | $= 22v - 180.75 = 39.25 - 22u$ |
| $M_\star$ | $= 33.574583655185422129481634994 56$ | $= 25v - 188.25 = 61.75 - 25u$ |
| $M_U$ | $= 52.693533693807672785019431193907$ | $= 28v - 195.75 = 84.25 - 28u$ |
| $m_o/m_p$ | $= 19.118950038622250655537796199347$ | $= 3v - 7.5 = 22.5 - 3u$ |
| $(m_o/m_p)^2$ | $= 38.237900077244501311075592398694$ | $= 6v - 15 = 45 - 6u$ |
| $(m_o/m_p)^3$ | $= 57.356850115866751966613388598042$ | $= 9v - 22.5 = 67.5 - 9u$ |

PISIGMA8.WPD December 17, 2005

# THE $A_{n+2} = 10\,A_{n+1} - 10\,A_n$ RECURSION FORMULA vs. PHYSICAL PARAMETERS

A hypothesis is properly judged by the ratio of the number of observations it fits to the number of assumptions on which it is based. In the present case, there are many good approximations to the numerical values of certain physical parameters formally derived from a single recursion formula, $A_{n+2}/10 = A_{n+1} - A_n$ .

In the following, u = 1.127016654... and v = 8.872983346 are the roots of the recursion equation:

| Measured values $\{\log_{10}\}$ | Corresponding recursion formula values | |
|---|---|---|
| $\alpha\mu$ = 1.1270742 | u = 1.1270167 | $\Delta$ = 0.0000575 |
| S = 39.355880 | $v^2/2$ = 39.364917 | $\Delta$ = 0.009037 |
| $(S/\alpha\mu)/2$ = 19.114403 = $m_o/m_p$ | 3v - 7.5 = 19.118950 | $\Delta$ = 0.004547 |
| $\alpha\mu S/2$ = 20.241477 = $r_e/l_o$ | 2v + 2.5 = 20.245967 | $\Delta$ = 0.004490 |
| $\alpha\mu S$ = 40.482954 | 4v + 5 = 40.491933 | $\Delta$ = 0.008979 |
| $3(\alpha\mu S)/2$ = 60.724431 | 6v + 7.5 = 60.737900 | $\Delta$ = 0.013469 |
| $t_o = \sqrt{G\hbar/c^5}$ = - 43.268366 | 14v - 167.5 = - 43.278233 | $\Delta$ = 0.009867 |
| $t_e = \alpha\mu S/2 - t_o = r_e/c$ = - 23.026889 | 16v - 165 = - 23.032266 | $\Delta$ = 0.005377 |
| $T_U = 3(\alpha\mu S)/2 - t_o$ = 17.456065 | 20v - 160 = 17.459667 | $\Delta$ = 0.003602 |
| c = 10.476821 | 19.1v - 15.9 = 10.473982 | $\Delta$ = 0.002839 |
| $l_o = \sqrt{G\hbar/c^3}$ = – 32.791545 | 33v - 325.6 = -32.791549 | $\Delta$ = 0.000004 |
| $r_e$ = – 12.550068 | 35v - 323.1 = -12.545583 | $\Delta$ = 0.004485 |
| $m_p$ = – 23.776602 | 16v - 165.75 = - 23.782266 | $\Delta$ = 0.005664 |
| $m_o = \sqrt{c\hbar/G}$ = – 4.662199 | 19v - 173.25 = - 4.663316 | $\Delta$ = 0.001117 |

Jill –

Warmest holiday greetings! Malibu, California 12/16/05

The annual weekend seminar in Northern California ended two weeks ago followed by a lovely three-day visit with Joyce and Bob in Walnut Creek. Arriving home I began to face towards Christmas and its season like someone who has skipped rehearsal and mostly forgotten her lines. I read and re-read the scribbled agenda I made myself and wonder why so little has been crossed off.....including the Christmas letter. I did order some gifts out of catalogs and wonder if they will arrive in time. The thought of facing a Southern California mall is too intimidating and, besides, our main access road down the mountain is closed for repair for two -plus months from 8:30 until 5:00 seven days a week. It is helpful that I'm an introvert and like staying at home. The detour to market and bank is 14 miles instead of the usual 4, a very winding affair at that, requiring a half hour each way.

In spite of it all, what has arrived for Christmas is the *nostalgia*. Lawrence Durrell has written some extraordinary words on nostalgia and the Greek exile -- the haunting, essential attachment to where one belongs, the sense of true dwellingplace not recoverable in the way demanded of it. Yes, probably like many folks of my generation, Christmas has a rich nostalgia that somewhere evokes the treasured connections. The younger generation suspect that one is pulled back into the past, yet the connection points to something enduring, ongoing, it seems. The myth we explored at Santa Sabina Retreat on the edge of the woods in San Rafael was the story (immortalized by Euripides) of the lost child of Apollo, Ion , and the great struggle to restore him to life, its being an unbearable loss to lose the connection to Heaven (Olympus). Nuns and ex-nuns run this exceptional retreat place with its serene and contemplative context, where we've had our own winter seminar for eighteen years.

After Myron's death, I doubted that I should ever again lead a mythology seminar to Greece. It is a fact that I did indeed take a group of 22 of us for two-and-a-half weeks this last May, and the entire experience was satisfying beyond words. Much credit for the smooth running of the tour, Odyssey XI, is owed to Linda Cornell, friend and coordinator. Meant to be slow-paced, our tour gave us a week on Crete and a week on Naxos, settling into one place, touring about on our bus, visiting mythological and sacred sites. The few days on the mainland took us to Delphi, Eleusis, Epidauros, the Acropolis.

It will be good to be with all the family here at the house, all eleven of us, divided between December 25 and 26. The good news is that again Shelley will bake the turkey and trimmings while Shonti will come bearing her excellent pies. As for the grandchildren, Hampton is welcomed back from Tahiti where he has been involved in an environmental research project under UC Berkeley. Rebecca, a field worker in psychological counseling, is working at a therapy center for adolescents as a coordinator. Helene works for the historic Malibu Feed Bin, selling and cashiering. Turned sixteen, Hallie pursues her many interests and is a junior at Malibu High while Hunter, age 13, is in Odyssey School in our canyon. Youngest of the grandchildren, Kendra, who sends notes in the mail well-illustrated with her drawings, is busy mastering second grade.

Shonti continues -- possibly an heroic role in our culture -- as an at-home mom and enjoys being a part of a women's study group in their community of Glendale, a little more than an hour from us. Charles is an able research attorney in a law firm in Westlake. Shelley continues nursing and part-time administrative work at Kaiser Medical Center in Los Angeles, preferring the late shift from four until midnight. She and the girls look after their five horses, two dogs, and many cats -- all residents here on the shared property. Recent musical recording on Marston's part is with John O'Hurley, pianist and actor. A new C.D. now available is: Peace of Their Minds. Marston and O'Hurley have appeared twice in Philadelphia during the year on TV Channel QBC in interview and playing their instruments in duo.

Local seminars and lectures in mythology and Jung's psychology continue to be my work as I struggle towards a fresh synthesis that can accommodate the commitment to (and love of) philosophy. In February I return to Lafayette, Lousiana, for a weekend while, come March, we have our seminar-retreat at St. Andrew's Benedictine Abbey on the desert again.

I do hope that these greetings find you well. I always look forward to our communication, regretting that often it is only at the Christmas season.

With warmest regards,

Betty Smith

December 31, 2005

Dear Betty,

So good to get your card and year end letter. Your writings always inspire me and I wish that I had access to more of them, and could attend some of your seminars and lectures. However, you do come north from time to time. Please let me know your next trip in advance and hopefully we can arrange a visit.

We have much to discuss. You remark that you struggle toward a fresh synthesis that can accommodate the commitment to philosophy. I am struggling too. Although I would say that my struggle is toward a fresh synthesis of thinking itself. Except for a few cognitive anarchists, modern philosophers have lost the comprehensiveness that characterized the thinking of ancient philosophers, whether Greek or Eastern. Most modern philosophers have become bogged down in semantic and logical jungles. But the tide is turning. The Vienna Circle is gone, Wittgenstein reversed his conclusions, and amazingly, Paul Feyerabend, a philosopher of science says, "A systematic analysis is a fraud. So why not avoid the fraud by going directly to stories." But most paradoxical of all, Kurt Gödel, the 20th century's number one logician stated, "Only fables present the world as it should be and as if it had meaning." He ended up feeling that stories, not axiomatic systems, were the best devices for grasping truth and that meaning is primarily about humans not reality. Yes, there seems to be some new thinking out there, and interestingly, it seems to be picking up where the ancients left off.

Years ago, Donna and I gave an extension course at UCLA entitled, Math, Myth, and Metaphor. The course was given only once, it was popular, but deans could not handle interdisciplinary projects in those days. Donna did the Myth and Jung part, I did the Math and Poincaré part. The original idea was that both math and myth were metaphors. While this is acceptable for mythamaticians, it is very questionable for mathematicians. Both stories and equations can contain many meanings or applications, but they differ in their penumbras. A mathematical proposition seeks to have no penumbra, while myth relishes a broad and deep penumbra. How can math be a metaphor when there is no penumbra? Now, decades later, I am working on some aspects of math that I feel can be used as metaphors for cultural and archetypal situations. But in practice, this doesn't make sense. A metaphor is a device to enhance understanding by relating something obscure to the familiar. But for most people, mathematics itself is obscure, not part of the familiar. So relating something obscure by something usually even more obscure hardly qualifies as a metaphor. Nonetheless, it provides insights if you possess the code book..

You spoke of your Santa Sabina retreats with nuns and ex-nuns. There is another nun-run retreat center further north near Whitethorn, California. This is a monastery founded by Belgian nuns who were refugees from the Nazis in world war II. They built their chapel with one end having a glass floor-to-ceiling window that opened onto a clearing which was surrounded by firs and redwoods. The nuns always meditated facing this clearing which had a grassy floor and a single deciduous tree in its center. From time to time there would be retreats at Whitethorn and we secular types could join the nuns in their meditations. This happened when I was last there.

We were all gathered in the chapel doing the afternoon office. Suddenly in the middle of the clearing standing next to the central tree stood a huge stag, with shining antlers. The nuns gasped. We were all awed by the sudden presence of this beautiful animal. It felt as though he were some messenger who had appeared to bring us a special spiritual message. While we were all absorbed in this event and its symbolic significance, the stag disappeared as suddenly as it had come. All of us felt that there was some sort of a theophany in this event.

But the manifestation of a stag with a spiritual message has historic precedents. St. Eustace in Roman times, and St. Hubert in the eighth century both reported encounters with a stag that occurred at critical moments in their lives. Their legends both mention a glowing cross shaped form on the stag's head between his antlers. If the Whitethorn stag had a cross we missed seeing it, but we did feel a euphoric spiritual presence.

In thinking about a spiritual message in the manifestation of the stag, I recalled a passage in the children's book, "Bambi", by Felix Salten. There is the final scene where the old Stag is trying to get a message through to the younger stag, Bambi. They have come across a human who has been shot, probably a poacher. The old stag says:
"Do you see, Bambi, He is lying there dead, like one of us. He isn't all-powerful as they say. He isn't above us. He's just the same as we are. He has the same needs, the same fears, and suffers in the same way as we. He can be killed like us. Do you understand, Bambi?" "Then speak."
Bambi was inspired, and said trembling:
"There is Another who is over us all, over us and over him."
"Now I can go", said the old stag.

Much love to all and blessings for the coming year.

January 22, 2006

Dear Al,

Yes, I remember when you and Donna gave that course, Math, Myth, and Metaphor at UCLA, land-breaking it seemed, even though I missed attending. (Surely I could not have coped with the mathematics. As Myron occasionally pointed out, my education was deficient in certain respects -- a simple statement of fact.) Your letter of December 31 on the threshold of this new year was a delight to me. Your speaking of myth as "relishing a broad and deep penumbra" is a penetrating insight that helps me understand the nature of my work in mythology, now in its fortieth year. Perhaps one must never cease searching for "the code book."

What you say of philosophers of the last century finds me in complete agreement, especially in being obsessed with linguistics and semantics. Godel does put his finger on the value of fables as a more appropriate source. I do tend to watch closely, however, when Jungian interpreters happen to *use* myth in order to do a somewhat down-pat deductive thinking, heavy with categories and the need to neat things up in one's file! (Fortunately, this is not all Jungians). Again and again, a great myth requires a fresh listening, a plowing of the human furrow, a waiting on the Heaven-Earth covenant of the seasons, it is my experience. To quote the "evidence": only this last year the fact struck me that those who guard the Gates of Olympus are the Hours -- the Seasons, (although not corresponding to those on the solar-lunar calendar). That the gods and goddesses do not pass between Heaven and Earth unless the *season* has opened the way seems to me an uncanny mythological fact..... and psychological one. Kairos

Al, your experience at Whitethorn with the nuns of the epiphany of the great stag is extraordinary! I have read and re-read your words and fine commentary, including Bambi and shall treasure this. Heracles apparently had a really hard time with his Third Task, capturing the stag that was the companion of Artemis. He spent a year at it, not wanting to either kill or wound it. After showing the stag to his taskmaster, Eurystheus, he is said to have returned it to the goddess..... It is strange that the stag is connected to archetypal virginity, isn't it?

I send best wishes for your health and the bounty of your wisdom in this new year..... The enclosed paper is based on a lecture I gave at the Stacks.

Fond regards,

Betty