SCRAPS
1995

SCRAPS DIRECTORY

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also Silber on Language

INTRODUCTION TO MUSICAL STRUCTURE

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

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

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

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

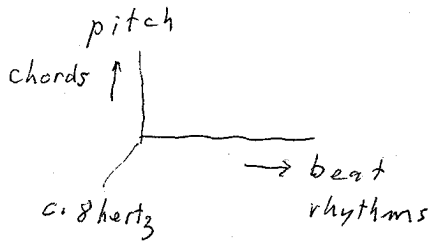
The basic elements

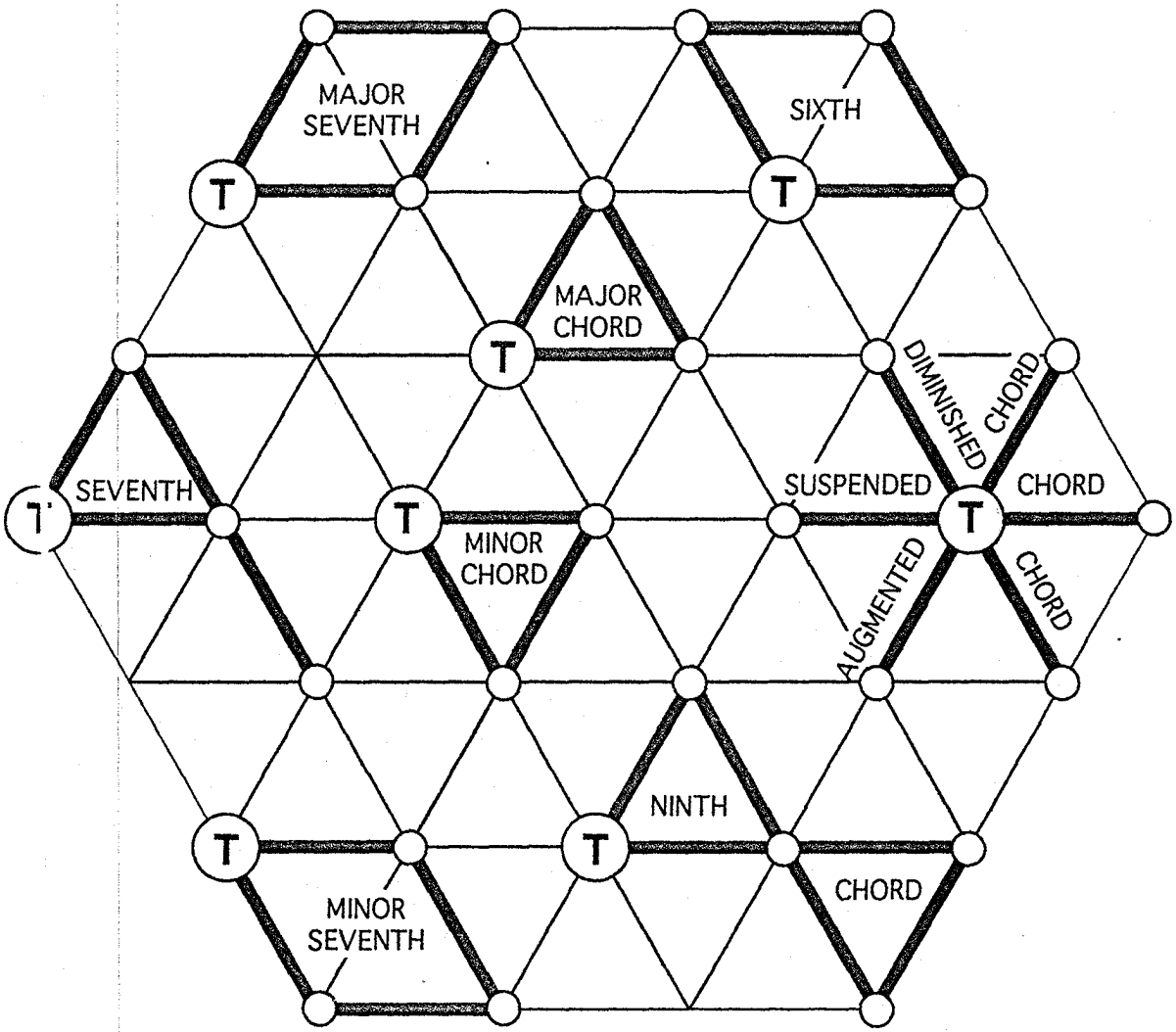
organizational frameworks are the musical scales which determine the set of permitted and disallowed sonic elements and their relations. The substances with which we are working in music are sound and time although it may be somewhat redundant to speak of both since sound is not available to us except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

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

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

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

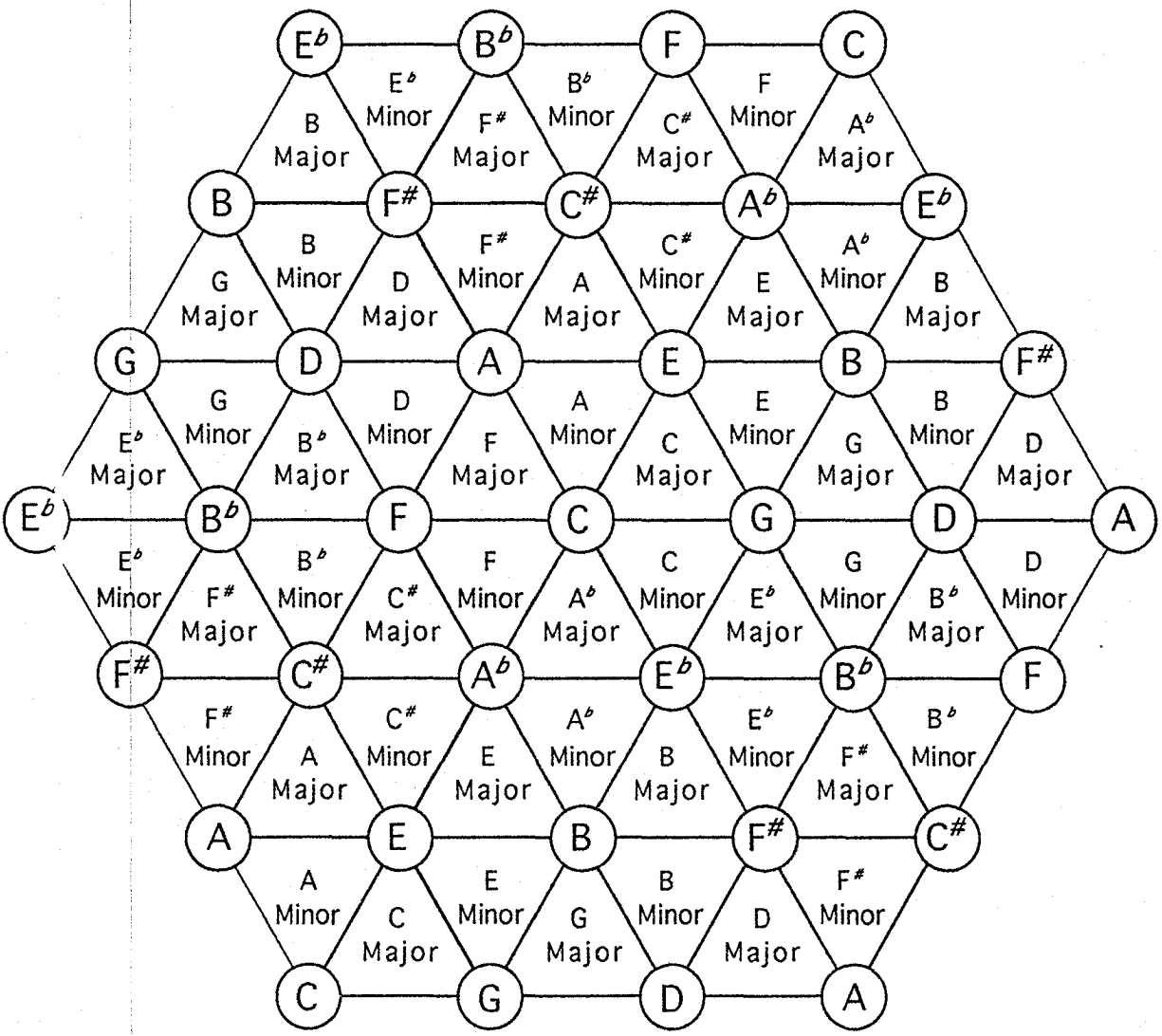

pitch
chords
beat
rhythms
c. 8 hertz



CHORD PATTERNS

FIG. 2

Ⓣ REPRESENTS THE
CHORD NAME POSITION



CHROMATIC SCALE

COORDINATE CHORD CALCULATOR

FIG. 1

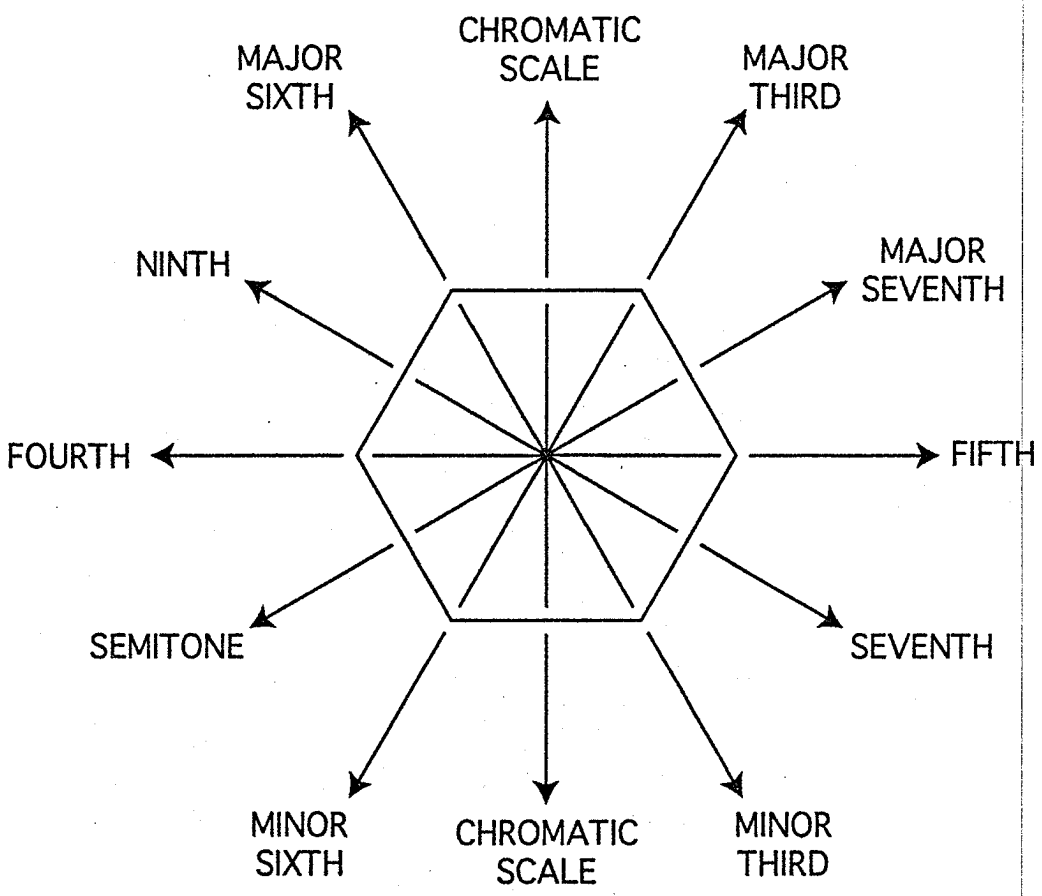


FIG. 3

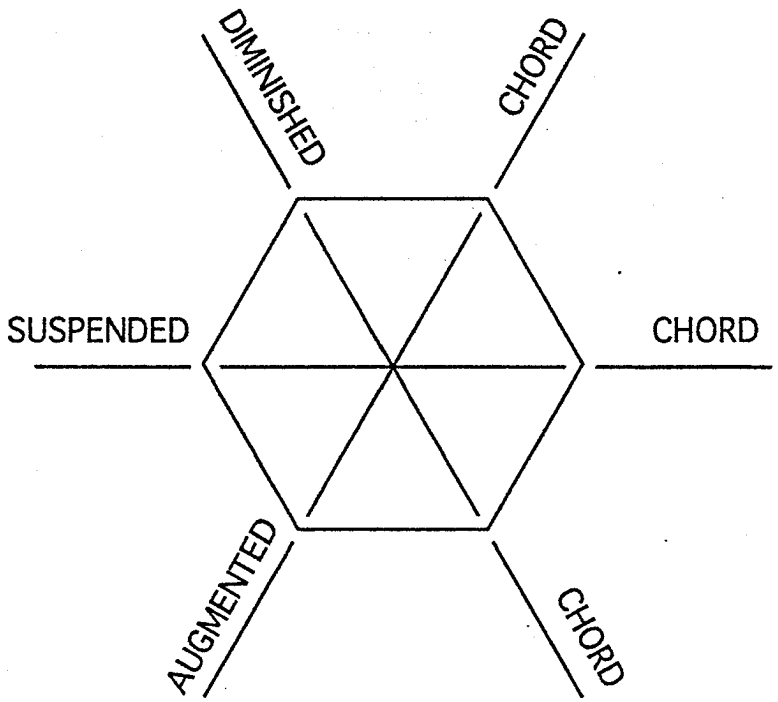
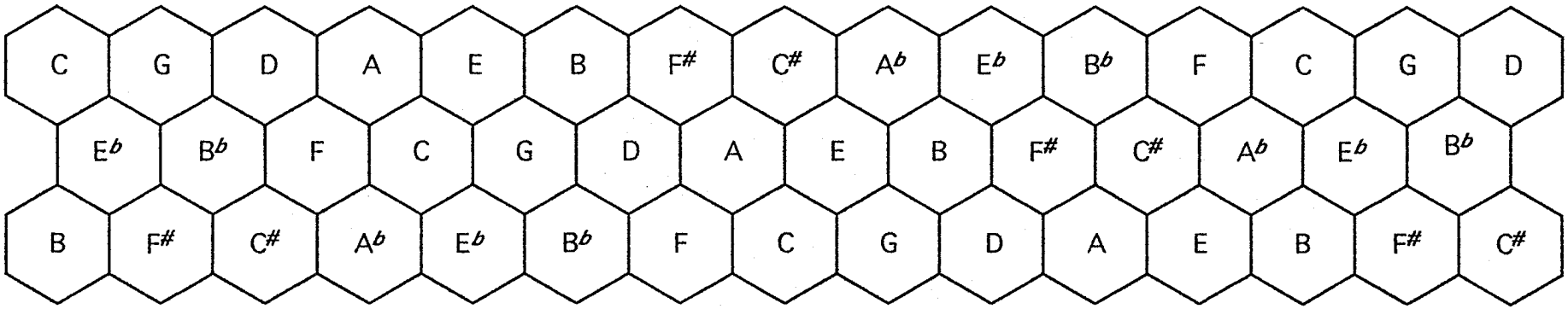


FIG. 4

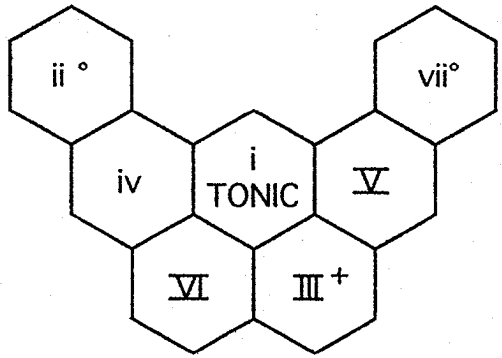
HARMONIC MINOR SCALE
CHORDS FOR TWELVE KEYS



THE CHORDS IN THE TOP ROW ARE ALWAYS DIMINISHED

THE CHORDS IN THE MIDDLE ROW ARE EITHER MINOR OR MAJOR

THE CHORDS IN THE BOTTOM ROW ARE EITHER MAJOR OR AUGMENTED



° = DIMINISHED

LOWER CASE LATIN = MINOR

UPPER CASE LATIN = MAJOR

+ = AUGMENTED

FIG. 6

STRUCTUR.WP6 January 13, 1995

INTRODUCTION TO STRUCTURE

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

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We shall thus take as our point of departure the processes and products through which we organize experience.

The 5 Great Dyads

I
- Node / Link
- Entity / Relation
- ~~Product / Process~~
- Place / Path

} NET

II
- Cell / Nucleus
- Item / Slot
- Box / Ball
- address / content

} MATRIX

III
- Cyclical / linear
- Even / odd

IV Product / Process

V Figure / Ground Dual
Vehicle / Cargo / Path
traffic

Multiplexing ⇔ Hierarchy

bits ⇔ atoms
How is information ⇔ thing
related to process ⇔ product ?
"program"

2 kind of bit
Is it "fluid" ⇔ "frozen" bit
or incarnated
↓ ↓
process form

S.F. CHRONICLE 1995/01/12

Buddhists Critical of Pope's Comments

Pontiff writes of 'atheistic' faith

By Don Lattin
Chronicle Religion Writer

As Pope John Paul II begins an 11-day trip to Asia and the Pacific Rim, Buddhists from Berkeley to Sri Lanka are criticizing the pontiff for calling their religion "atheistic," "negative" and "indifferent to the world."

In predominantly Buddhist Sri Lanka, where the pope tours next week, the theological dispute has turned violent. Yesterday, a Buddhist temple was damaged by fire in apparent retaliation for an arson attack Tuesday on a Catholic church.

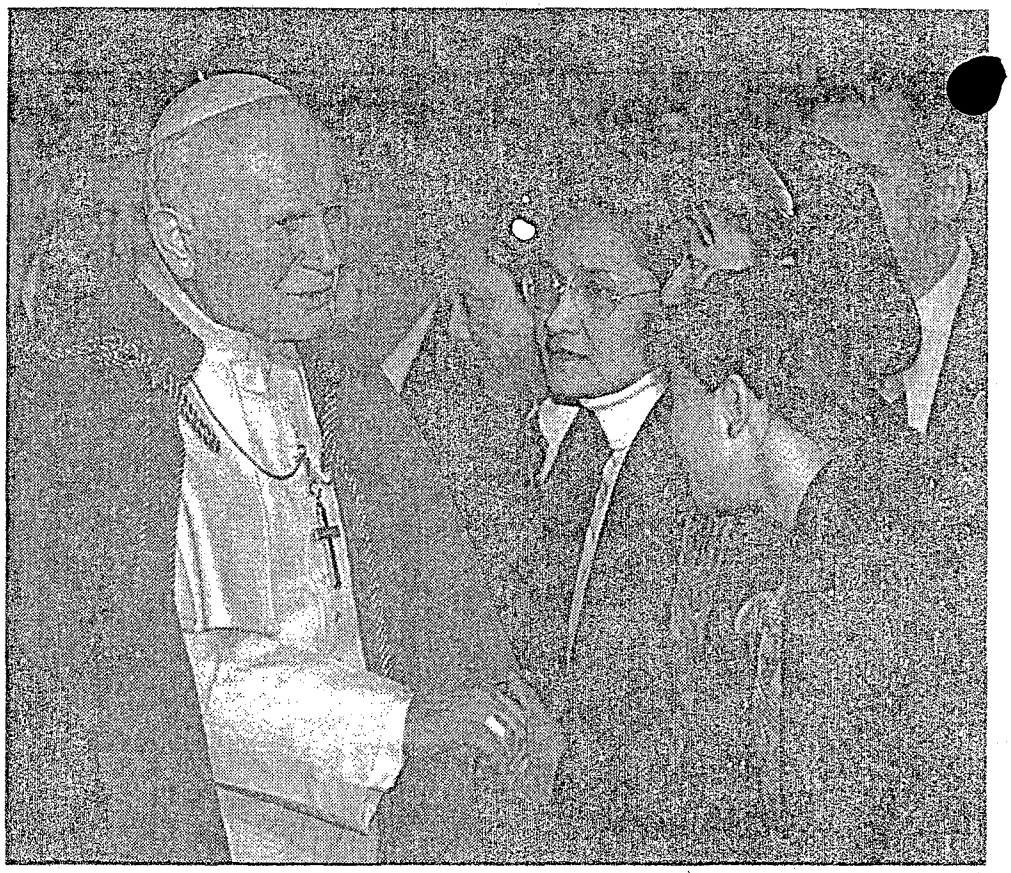
Last month, a conference of Buddhist monks asked the pope to recant a seven-page chapter called "Buddha?" in his best-selling book, "Crossing the Threshold of Hope."

"The 'enlightenment' experienced by Buddha comes down to the conviction that the world is bad," the pope writes. "To save oneself means, above all, to free oneself from evil by becoming indifferent to the world."

John Paul said that the "doctrines of salvation in Buddhism and Christianity are opposed" and that Buddhist doctrines are "fundamentally contrary to the development of both man himself and the world.

"Buddhism is in large measure an 'atheistic' sys-

POPE: *Page A14 Col. 1*



BY ASSOCIATED P

Pope John Paul II greeted well-wishers yesterday at Leonardo da Vinci Airport in Rome before departing for an 11-day tour of Asia, Australia and Sri Lanka

POPE: Buddhists Criticize Characterization of Their Faith

From Page A12

tem," he writes.

Some American Buddhists have taken offense that the pope characterized another globe-trotting spiritual leader, the Dalai Lama of Tibet, as "stirring up" interest in Buddhism outside Asia.

"Today, we are seeing a certain diffusion of Buddhism in the West," the Pope writes.

The pope ends his chapter on Buddhism by warning Catholics about "the return of ancient gnostic ideas under the guise of the so-called New Age," which he calls a "para-religion" that is in "conflict with all that is essentially Christian."

Yesterday, just hours before departing on his Asian pilgrimage, the pope sought to defuse the growing interfaith conflict. "I voluntarily take the occasion to assure followers of the Buddhist religion of my deep respect," he said.

Nevertheless, the Rev. Ken Tanaka, a professor at the Institute for Buddhist Studies in Berkeley, said it is clear that the pope "hasn't done his homework."

"Essentially, Buddhism is about becoming detached from greed, hatred and ignorance — not from the world," Tanaka said.

Tanaka conceded that there are major differences between Buddhist and Christian concepts of the divine, but was not sure he would characterize Buddhism as "atheistic."

"We don't accept a divine personal being," he said. "It is more of a spiritual reality."

The Rev. Thomas Hand, a Catholic priest who leads Zen/Christian retreats at Mercy Retreat Center in Burlingame, also disagreed that Buddhism is "atheistic."

"Buddha shows us the way to God, and after that, silence," said Hand, who has studied with Zen masters in Japan. "You can't interpret that silence in a negative way."

Hand said he wished the pope "were able to speak about Buddhism from experience."

The Rev. Alan Senauke, a Zen priest and coordinator of the Buddhist Peace Fellowship, said the pope's comments on Buddhism were little more than "setting straw men, then knocking them down."

Senauke, who teaches at the Berkeley Zen Center, sought to explain the reaction to the pope's comments in Sri Lanka. "You have militant Buddhists there, which is kind of unusual."

Lama Ole Nydahl, a teacher affiliated with the Kamtsang Chöing, U.S.A., part of a Tibetan Buddhist sect, was not surprised.

"How could a man like he possibly agree with a religion like Buddhism, which takes people out of dualism and produces a healthy relationship with their bodies and minds?" he asked.

"He will not enjoy his after life," Nydahl added.

popebudd.wp6 January 13, 1995

A Buddhist Reply to the Pope

According to an article appearing in the San Francisco Chronicle on January 12, 1995, a chapter in the pope's recently published book, "Crossing the Threshold of Hope", contains an attack on Buddhism. The pope accuses Buddhism of

1) Being atheistic
2) Being negative
3) Being indifferent to the world

As Professor Ken Tanaka in Berkeley replies, "The pope has not done his homework".

First, the Buddhist position on God is open ended. What is recognized as primary in Buddhism is the validity and importance of spiritual experience. What is felt to be secondary are elaborate theologies and intellectual structures which attempt to interpret spiritual experience. Filling the heart is more important than what the brain may have to say about it. It is true that the Sakimuni Buddha was not interested in metaphysical and theological questions. He focused primarily on the human condition and ways to alleviate suffering.

Second, Buddhism is not negative. Its basic premise is that all humans have within them the potential for Buddhahood, that is, to become wise and compassionate beings. This is in contrast to the Catholic dogma, based on the idea of original sin promulgated by St. Augustine, that all humans are born in sin and per their very existence doomed, unless redeemed by the Christ, which is to say in practice, by the Catholic Church. This is not to accuse Christianity of being negative, for many were the saints, martyrs, and bishops who saw Augustine's views as opposed to the teachings of Jesus.

Third, Buddhism is not indifferent to the world, but the charge arises from the idea that monks and nuns who pray hourly for the benefit of humanity are wasting their time and should be out preparing soup for the needy. This charge arises from a totally materialistic view of the world and it is surprising that a pope would make it, especially in view of the tradition of prayer in Christian monasticism. However, the Dalai Lama recently said that the practical side of Buddhist compassion, working with those who are in need, has been deficient. The argument must not be that prayer and bread are adversarial, both are needed. But here we must give the pope half a point for urging more Buddhist bread.

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time the French who colonized Vietnam allied themselves with Christian missionary efforts to the crisis of 1963 when President Diêm passed a law prohibiting his people from celebrating the Buddhist national holiday, many Vietnamese have understandably associated Christianity with foreign attempts to establish political and cultural domination.

With his characteristic directness, Thich Nhat Hanh goes to the heart of the matter. After examining the parallels between the theology of the Trinity and the Buddhist concept of "interbeing," he takes issue with the man regarded by millions as the foremost exponent of the Christian tradition—Pope John Paul II. In his recent book, *Crossing the Threshold of Hope,* John Paul II states that:

> Christ is absolutely original and absolutely unique. If He were only a wise man like Socrates, if He were a "prophet" like Mohammed, if He were "enlightened" like Buddha, without any doubt He would not be what He is. He is the one mediator between God and humanity.

Quoting this passage, Thich Nhat Hanh comments:

> This statement does not seem to reflect the deep mystery of the oneness of the Trinity. It also does not reflect the fact that Christ is also the Son of Man. All Christians, while praying to God, address Him as Father. Of course Christ is unique. But who is not unique? Socrates, Mohammed, the Buddha, you, and I are all unique. The idea behind the statement, however, is the notion that Christianity provides the only way of salvation and all other religious traditions are of no use. This attitude excludes dialogue and fosters religious intolerance and discrimination. It does not help.

FROM Elaine Pagels FORWARD TO THICH NHAT HANH Living Buddha, Living Christ.

As one engaged in studying Christian tradition who also participates in Christian practice, I find myself agreeing with Thich Nhat Hanh at this and nearly every significant turn of *Living Buddha, Living Christ.* Yet my agreement does not come from immersion in Buddhist tradition—on the contrary, it comes from exploration into the earliest history of Christianity. As a graduate student, I was surprised to learn of a discovery that is still transforming our understanding of Christianity—and its mysterious founder. In 1947, when a Bedouin villager named Mohammed Ali was digging for bird-lime fertilizer under a cliff near the town of

esthpsyc.wp6 orig. c 1985 January 16, 1995

AESTHETICS AND HUMAN ASPIRATIONS

Aesthetics--what we select as being beautiful--has its roots deep in the human psyche. It springs from our fundamental nature. from our hopes, our fears, our aspirations. It is not clear in just what way our primary urges and aspirations determine our criteria concerning what is beautiful. But it is possible to start with our basic urges and needs and derive some aesthetic "meta-principles" from which the rules of beauty in turn may be derived.

First, humans are fearful. To have a sense of certainty and security we need constant reference to the familiar. This is why we demand explanations of new and hitherto unexperienced phenomena, for explanation basically amounts to relating the new to the comfort of the already familiar. Second, we get bored. We tire of the familiar. While we need the reinforcement of repetition and re-exposure to the familiar, we also need variety and surprise. From these two basic aspects of human nature we see that Art must contain both the familiar and the novel, or Art must be structured around a Toynbee-like departure and return process, an oscillation between the predictable and the surprising. While we like to be surprised, we also like to be able to retreat quickly to the security of the cave, the familiar, in order to digest and process the surprise.

The creativity we call Art consists of variations within a specified set of constraints. For example, the free color and pattern combinations allowed for kimonos and obis but within a severe constraint on form. The constraint supplies the familiar, the variations supply the novel--this is art.

The alteration of the familiar with the surprising is a meta-principle finding specific form in all of the arts. In music there is the alteration between consonance and dissonance, resolving to the familiar, which is the most consonant. There are variations on a theme, changes in registration, changes in key, in tempo,...surprises all, but all within the context of the familiar.

Another question, how does prediction and the satisfaction derived from successful predicting enter into the dialog between the familiar and the surprising? When both prediction and surprise occur, a combination of the familiar and the novel, we are most pleased. However that which is novel and surprising throughout turns unaesthetic. Too much surprise begins to lose its edge, perhaps because of the Weber-Fechner Law.

The optimum joy comes from a certain measure of successful prediction followed by something unpredictable which surprises

and shows there is still more to learn, more adventure and more challenge left to life. Each artistic episode exhibits then a sort of "ontogeny recapitulates phylogeny". Each event or situation acquiring the flavor of the aesthetic retells our own basic story, our accomplishments thus far, i.e. the familiar but also what is unknown, the mysterious challenge of new dimensions, new horizons, an unknown future. The dialog of the familiar and the unknown is most basic to human life.

Whatever suggests new events, suggests coming, suggests dawn, a light hidden on a curve in the path, or any device that creates anticipation of a surprise draws attention and pleases. That which suggests there is more beyond resonates with our desire to explore and that which suggests more in the context of the familiar is aesthetic to the full.

Looking through a bower, a grill, a room divider is pleasing because there is the suggestion of more beyond, but at one with the security and bounds of the cave, the familiar.

Whatever shows higher dimensionality, the effects of space and depth--rich as snowflakes falling, trunks of trees in a forest, or lamps hanging from the ceiling of a room, all point to a higher dimensionality in the world, and therefore to the existence of worlds beyond the known and to greater challenges and surprises.

We thus see how the primary aspects of the human psyche begin to be translated into specifics such as soffit lights, room dividers, pole lamps,... through the intermediate principles of creating the effects of "there exists more beyond". These are higher dimensions and mysteries occurring even in the midst of the most familiar.

A very important mood which must be created by an aesthetic device is **expectancy.** A tension we find to be of the most delicious sort. Expectancy and repose alternate as do surprise and the familiar.

Architecture should have its inception not in function, but in mood. Though we need a kitchen, a bed room, a bathroom, what we fundamentally need are spaces to tune to our moods. Sometimes our primary need is for a cozy enclosed space, protecting us from the vicissitudes of the natural and societal contexts, a place that is secure and familiar. At other times we need to be exposed to the natural order in a space that brings us close to trees, rocks, still and running water. Each dwelling should be able to enhance these two basic human moods. There are others: a place of quiet and peace, privacy and meditation, for letting the inner world come to awareness and reach fulfillment; a place where gemutlichkeit reigns, warmth, fellowship, food, fire, song, and hearty cheer--togetherness and love. Then there must be the flexibility of blending these moods and achieving them in various degrees, for example, to behold the storm from a secure vantage

point. Each dwelling must have an open exposed area, exposed to the horizon, to the elements. But there must also be an enclosure, a court yard, an atrium, with no roof. There must be exposure to the horizon with roof, wet verandas and enclosed verandas with portions properly enclosed all of the way down to a secure alcove with a place for fire and warmth for maximum protection and "return to the womb".

The courtyard--the view shut out, but the sky exposed, an inverse to the roof with view. It is interesting to compare peoples who employ these different forms of exposure and containment. Perhaps something like this --the atrium and court of Latin homes vs. the porch of northern homes reflects not only a difference of climate but different indigenous dispositions, (or do the dispositions derive from the form?)

Vertical exposure,,horizontal security
Horizontal exposure,,vertical security
Front yards, outer directed USA
Court yards, inner directed Latin

A multi-mood house may be divided into detached sections, each functionally complete. The variety of mood would relieve much of the drabness and monotony of life as it is now lived. People who live in multimood homes and cities would not be driven to the irritability which causes violence.

multi mood

Re the City

Automobiles must be excluded from most of the city. As the dwelling must be able to tune to private and personal moods, so the city must be able to tune to the public moods. There must be parks which contain forests, streams and lakes There must be a market place, with a fountain, there must be a plaza with a monument, a place of majesty where the people can gather and savor their history, exhilarate their present and dream their future. There must be a great cathedral or temple where the city can find its vertical umbilical cord renewing its faith, restoring its hopes, and sealing the ties of its community. There must be a great theater, where the city can reference its soul through drama, dance, and music. Then there must be places of business and bustle, where the life and energy of the community becomes specifically visible.
Thus a city is also to be designed for moods as well as for functions,[but in a city mood and function begin to blend.]

THE PRESENT bustle
the mall, square, forum, market place
for community: taverns, theaters
THE PAST inspiration
the memorials, monuments, cemeteries
THE FUTURE transformation
temples, libraries, academies
FOR ALL TIME repose
parks, open space, vistas, lakes, fountains

COMPASSION AND DETACHMENT

The two Buddhist injunctions to have compassion and to be detached at first view seem contradictory. How can we be imbued with love and compassion and be detached from all? Detached compassion is an oxymoron. Perhaps one of the best resolutions of this apparent contradiction is given by St. Paul in the 13th chapter of First Corinthians verses 4 through 13.

> Love (compassion) suffereth long
> and is kind, envieth not,
> vaunteth not itself,
> is not puffed up.
> Does not behave unseemly
> seeketh not her own
> is not easily provoked
> thinketh no evil.
> Rejoiceth not in inequity
> but rejoiceth in the truth.
> Beareth all things
> believeth all things
> hopeth all things
> endureth all things.
> Love never faileth

but compassion ≠ love

This is the summary of what love with detachment is about.

Attachment is associated with specifics, not with concern. and detachment does not infer indifference or irresponsibility.

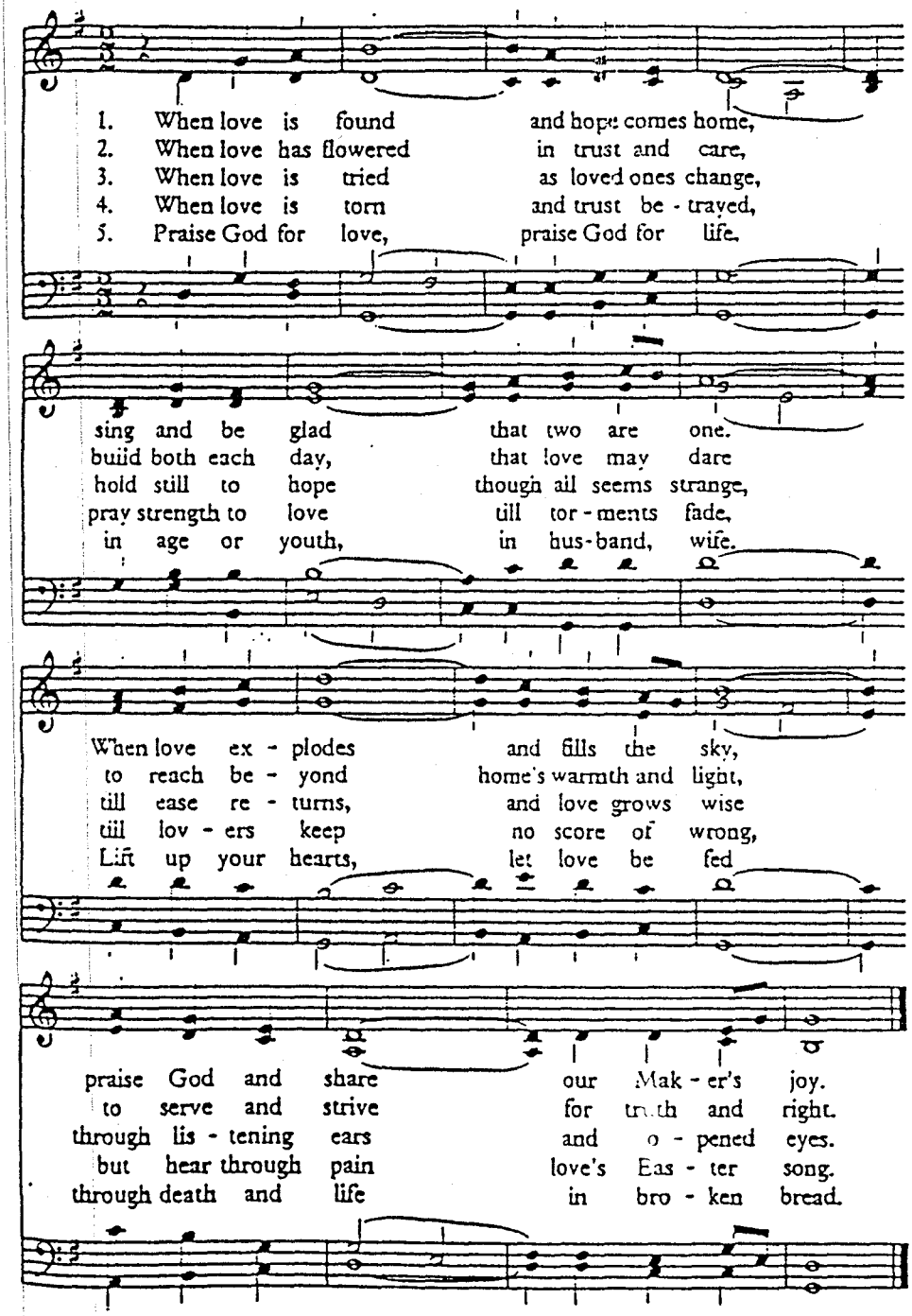
Suffering is the result of desire, especially frustrated desire. It is the result of diminishing Hope into expectation. But this is a violation of the spirit of Hope. We must first get rid of all expectations , then the power of Hope can operate to transform us. In the story of William the Silent saying we must persist even if there be no hope, he was not giving up hope, he was only giving up specific expectations. Indeed, when expectation is given up. hope allows great things to happen.

Expectationless Hope is like Detached Compassion.

And now abideth
Faith, Hope, and Love
these three
but the greatest of these is Love.

COMPDET. WP6. 1995/01/18

When Love Is Found 643



WORDS: Brian Wren, 1978
MUSIC: Trad. English melody; adapt. by Hal Hopson, 1972

GIFT OF LOVE
LM

MISCREL1.WP6 January 19, 1995

SOME MISCELLANEOUS NOTES ON RELATIONSHIPS

Today people armed with remotes are empowered to make quick switches in channels whenever something shows that either bores them or is not to their liking. This "channel surfing" has carried over into other areas of life. In a relationship we are refreshed or drained according as to whether we have a dream and whether we are making satisfactory progress toward that dream. In many cases satisfactory progress is replaced by immediate satisfaction. If I'm not getting what I want when I want it, click. I'm not happy so I am going to try something else. click. This has resulted in problems in relationships that require dynamic solutions. Some current problems:

I FACTS AND INTERPRETATIONS

The more facts at hand the tighter and less ambiguous the interpretation that can be derived from those facts. The more of the facts that are hidden the longer the leash on interpretation and the greater the probability of misunderstandings. Therefore in a relationship all partners should be equipped with all the facts and their picture of the situation will converge to consensus.

II THE FOCUS AND DIFFUSION OF INTIMACY (INTIMACY IS UNION)

There is an inverse relation between the depth or degree of intimacy and the number of channels through which intimacy is effected. The greatest depth is achieved when there is but one channel. However, there is often need for more than one channel. A different channel for different areas of living. For the spiritual, the professional, the physical (sexual), the aesthetic, the active ... Frequently sex and intimacy are locked together. In this it has been said that males like sex to be the gateway to intimacy and females like intimacy to be the gateway to sex. But there can be deep intimacies with no sex, especially of the spirit, and certainly sex without intimacy at all as is very common. But in general sexual intimacy can accompany any other type of intimacy. But the focusing of intimacy is prerequisite to depth.

III THE DISSOLVING-PROFANATION DIALECTIC

It is proper to dissolve a relationship, but not proper to profane it. That is to say that relationships should be dissolved before they are profaned. However, in practice there is a dialectical process between dissolution and profanation. Some dissolving of the relationship, eg loss of a dream of the future, may lead to a first profanation, which in turn leads to further dissolution, and justification for further profanation, iteratedly on.

To listen to intimate outpourings is not to become intimate (may be just therapy)
To outpour is to try to become intimate
Intimacy is <u>two way</u> giving and receiving.

7a

LOSSARCH.WP6 January 19, 1995

THE ARCHETYPE OF LOSS AND THE ARCHETYPE OF TRANSFORMATION

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

THE ARCHETYPE OF LOSS

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

Fr Ogle / June 8, 1986

Kubla-Ross's 5 steps

SHOCK
DENIAL
ANGER
DEPRESSION
ACCEPTANCE

Denial
Anger
Bargaining
Depression = forcing down feelings
Acceptance

Blame others
Blame self

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

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

The next is OK so it happened, but why, it is not fair, it is outrageous and intolerable. There is a pouring out of anger on anyone or thing that can be blamed, the surgeon, the driver, the system, and most of all on God. There are thoughts of vengeance when possible, thoughts of retribution. Some people never transcend this stage.

Following anger, comes a shifting of blame from others to oneself. The result is depression. Certainly the loss has

diminished us and we feel diminished, we lose self esteem, we question our competence, what have I done wrong, then we feel immature for not being able to handle the situation. we begin to question everything. And at this point the mood can turn suicidal. There is no heart in anything, everything is purposeless, meaningless, why go on. Finally it settles down into a deep sadness.

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

SOME NOTES

ON ENERGY

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

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

ON MEMORY

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

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

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

THE ARCHETYPE OF LIBERATION (TRANSFORMATION)

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

for completion

The stages in the liberation archetype are:

Liberty is getting the others off your back
Freedom is getting yourself off your back

Li Kiang

ZEROSUM1.WP6 January 28, 1995

THE WORLD OF TIME AND THE WORLD OF SPIRIT

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

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

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

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

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

NEW EPINT

ONTDICH1.WP6 January 29, 1995

cf 1995#11

ONTOLOGICAL DICHOTOMIES

There are two kinds of existence:

There is the Vairachona-Akshobya existence coming ex-nihilo from the Sunyata. This is sustained, serving all others, requiring no support. It is Sat. bootstrap Diracean?

There is derived existence, dependent on other, serving itself, requiring support.

There are two kinds of non-existence:

There is Dirac non-existence. When A and no-A are brought togher the join results in zero, in nothingness.

There is Eddington non-~~existence~~awareness. When there is AAAAAA..., uniform sameness, there is no awareness. but possibly existence

There is Pythagorean non-existence. One does not exist because it is a special case of Eddington non-existence.

Thus both 0 and 1 are symbols of non-existence

When self is joined with no-self, there is a Diracean union resulting in nothingness. When self is joined with not-self there is an Aristotelean union resulting in a plenum, infinity i.e. in 1, which is according to Pythagoras also non-existent

Dirac: A + no-A = 0 e.g. matter and anti-matter

Aristotle: A + not-A = 1 for 1 read everything.

When + and - are joined in one world the result is 0, in the second world the result is energy release.

There are two kinds of truth:

There is sat truth, stand alone truth. It is just so.
There is contingent truth, truth that must be renewed or repeated to survive, else it is eroded by the second law.
cf the Persian adage.

There are two realms:

The realm of space and time, a competitive zero-sum realm, the realm of struggle, work and learning.
The realm of spirit, of Love and beauty, giving, diffusing, non-zero-sum world. the world of grace, support and refuge.
Humans inhabit both worlds.

There are two times:

Chronos measured
Kairos not measured

There are two spaces

space measured
place not measured

On Symmetry

All symmetries are forms of Dirac separation, i.e. ex-nihilo. Joining a symmetry --->0, cancels the symmetric parameter.
Joining clones ---> sumation.
Thus joining either cancels or totals,
Separation either creates a symmetry (Dirac ex-nihilo) or truncates.

& G Spencer Brown

The world is made of symmetries and clones, unlikes and likes,
Mitosis is horizontal separation resulting in clones
Dirac separtation results in 2 bodies that are in some aspect symmetric.

Does the pain in separation result from separating likes or unlikes?

We are all a blend of like and unlike, clones and symmetries. In separation, I still have the like with me, it is the unlike (the symmetric) whose removal in separation causes pain.

• Dirac Creation $0 \rightarrow A$ and $\tilde{A}$ (no-A) . ex nihilo

This 0 is emptiness the Sunyata

A and $\tilde{A}$ are symmetric
$\tilde{A}$ is "opposite" A

$\exists \infty$ 0's
i.e. any number of parameters may be brought from the Sunyata

Compound entities: consist of 2 components
a like (cloned) component and a symmetric or opposite component

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

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

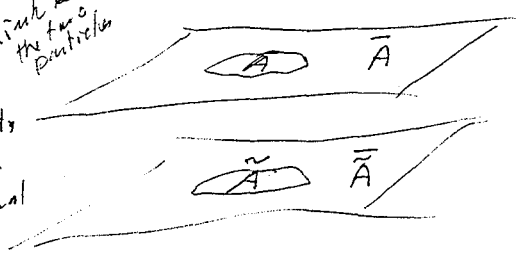
• Aristotelean $A + \bar{A}$ (not A) = 1 i.e. everything.

Trinity
Form
emptiness
No Form

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

link between the two particles

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



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

Redo G. Spencer Brown's Laws of Form

10a

NEW EPIONT

REGREC1.WP6 December 9, 1994 February 11, 1995

ON RECOLLECTION AND RECOGNITION

vs.

See also 95#14 95#21

Recollection moves from the present to the past, into "M" or memory, i.e. something from the past that has been stored is retrieved, recalled. Let us say that recollection is an operation originating with present consciousness that searches the past for specifics and details, tracing the path to the present.

Recognition, on the other hand, seems to be forced upon us. It originates in some unknown source, "Q", and invades our present consciousness. Recognition, is devoid of detail, except that some present configuration or pattern stimulates a feeling of familiarity, deja vu, though no details of previous instances of encounter are ever recalled.

attention

One explanation of Q is reincarnation. In this case Q is sort of an individual "meta-memory" surviving death while M itself is erased by death. A deja vu recognition is thus calling on the meta-memory for something stored in a previous life. However, this view is prisoner to chronological time. It holds that recognition, like recollection, depends on the previous occurrence of the event. But temporal precedence may not be necessary for recognition.

What is the difference between M, memory, and Q, the unknown source? We can link to both. M seems to be an individually stored experience, available only to the one who stored it. On the other hand, Q may be what Jung termed the collective unconscious, a vast storehouse of images supplied by all who ever lived, with access open to all who seriously search. Thus recognition does not require that its experiencer has actually encountered the situation before, but that somebody at some time did, stored it in the collective unconscious, Q, and consequently made it available to others. But this may be too narrow a view of Q, tying it to chronological time. Q may exist in Eliade's "primordial time", it is part of the "universal schema". In a holographic sense every part contains the whole, so recognition is the act of a part "tuning" to the primordial universal schema. Another way of saying this is that Q exists a priori, and is present ubiquitously, and is not personal and local, but is collective and global. Further, if Q is global it is also likely to be atemporal, outside of time, existing in eternity. If so it is meaningless to ask its origin. The question of origin arises in connection with time and time is anattribute of the material world.

Another difference between M and Q is that death seems to obliterate M, while Q appears to have an existence independent of the existence of any individuals. Consequently Q is not governed by the death of individuals.

TV 12/05/94 KQED "TIBETAN BOOK of the DEAD"

"Recognition and Liberation are simultaneous"

Images are of your own creation

Consciousness continues though the body dies.

Recognition authenticates our immortality
Remembrance confirms our mortality.

Li Kiang

Focus on remembrance precludes development of recognition

Is recognition atemporal or from the collective i.e. others experience?

Recollection is about the past, recognition is about ~~the future~~ eternity.
Li Kiang

Some Questions:

Is recognition acquired by practice of such disciplines as meditation? Is recognition the result of reincarnation? Is it built into our genes? Is it there ab initio (a priori), like some universal clock? Has it to do with cycles or rhythms? Does it arise in iteration (T.S.Eliot) Is it associated with archetypes? Jung found that children and the insane could tune into archetypes, [story of the crazy man who saw the solar wind, before it was discovered]

Is recognition built-in or acquired?

The appeal of certain stories when they are archetypal, they involve a species of recognition (without any recollection of it ever having happened)

What is the bearer of the cup? The vehicle for the preservation of recognition. Is it the soul?

Recognition does not require the abstraction-reinterpretation dialectic

THE MYSTERY of RECOGNITION

The astronauts tell us of the intellectual knowledge of the sphericity of the earth, but only really understood [with all their essence] when viewing the earth from space. Understanding involves more than the intellect.

Recognition is something understood, already known to our being, but not necessarily to the intellect.

Recollection is a matter of intellect - head only
Recognition is a matter of "heart" essence ? our being

Perhaps Q = {archetypes} and recognition is the ability i.e. hyparxis to connect a specific occurrence with its archetype.

A single word is sufficient to reveal the truth — Shen Hui
In case such a word may be lurking somewhere herein — Wei Wu Wei

BIONTOL1.WP6 NEWEPIONT February 12, 1995

cf 1995#9

TWO SPECIES OF EXISTENCE

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

Ch'ang Sheng (Taoist)
Dictionary of Mysticism p35

A Paradox

The only thing that can have independent existence (SAT) is that which exists for the other. For example, an epistemological framework or schema exists for its contents not for itself, but its existence is independent of what is in it.

Contrast space and time. The Leibnizian/Einsteinean view is that space-time is created by its contents and is thus not independent and is therefore not SAT. The world of space and time is thus not the primordial world.

Is spacetime an example of boot-strap existence. Spacetime comes into existence only when content (matter) comes into existence. Whence matter? Is matter SAT?

What is the relation between diracean creation and SAT?

Vairacona is the diracean creator out of the sunyata.
Aksobya permits the + to exist without the -?
If + requires - to exist, as in diracean creation, then diracean creation has dependence and is not SAT. It is thus Aksobya that renders what has been dirac created into SAT. Matter and anti-matter are diracean creations, matter becomes SAT when it no longer requires anti-matter to sustain its existence. (cf quantum mechanics on this point). Returning to the above, matter is SAT while space and time are dependent on matter for existence.

The total A and no-A is SAT but A is not SAT

Dependent existences finds extinction in the extinction of the SAT on which they depend. SAT becomes emptiness only through union with its no-SAT. All becomes non-existence when SAT joins its NO-SAT.

no-anti?

no-exist ≠ non-exist

cf David Bohm

2 orders physical + replicate

Boot strap existence
absolute SAT
and relative or dependent existence.

What is SAT?

Diracean = co-emergence

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

self + (not-self) = 1

PURMEAN1.WP6 NEW EPIONT February 12, 1995 See also 1995-#59

ON MEANING AND PURPOSE

EXPLANATION DERIVES FROM CONTENT
MEANING DERIVES FROM CONTEXT.
Li Kiang

What do we mean by meaning?

We ask "What is the meaning of ...."
of life, of the world, of
We ask "What is the purpose of ...."
of life, the world, ...

Meaning has to do with having a place, belonging, fitting in, being needed.
Purpose has to do with having a function, a task, dynamically fitting in.

To have meaning is to have a place in the order of things.
If you have no place, you have no meaning.
This implies that if the order of things changes, then one's meaning will change.

How is meaning related to "the order of things", to organization?
For there to be a place there must first be an infrastructure. This is why we have ontologies and theologies, which are infrastructures into which we can place ourselves.

How are infrastructures created?

cf. Bennett

If ∃ a reason ⇒ there is a need

Reason ≈ Cause ≈ Purpose

We use the word meaning: in two senses
Meaning of a word or sentence
Meaning of Life
What is the commonality?
Meaning has to do with being connected to something else
a word with other words
a sentence with an image or idea
Life with the world, the Cosmos, God ...

As we progress in our passage
we discover a paradox
In seeking to prepare a place
we are led to a place already prepared
In seeking to light a candle in the darkness
we are aided by a light already aglow
In seeking our way through the unknown
behold there is a shining star to guide us.

REGREL1.WP6 SCRAPS March 3, 1995

See also 95#10
95#21

RELATIONSHIP, RECOGNITION AND BEING

There is an old Persian adage that says there are two kinds of truth: eternal truths that are always there even if never recognized, and those truths which must be supported by constant repetition in order to be true. I believe it is also true that there are similarly two kinds of relationships, and indeed that there are two kinds of existence itself.

I have some relationships that, even though there has been no communication for ~~maybe~~ years, when coming together it is as though we had been talking just yesterday. The closeness and endurance of these relationships are never eroded by time. They indeed exist outside, above, time. A test for any relationship is provided by its ability to persist through temporal absences. Those relationships in our lives that must be sustained by incessant repetitive interactions are ephemeral. And if absence results in erosion then such a relationship does not exist in eternity. It has been said, "Set your love free to go away, and if she does not return it was never meant to be."

But we can go further and discover that a measure of our own portion of eternity can be found in our relationships that endure despite time. These relationships not only contain glimpses of the eternal, but are themselves glimpses of the eternal.

And something similar is involved in recognition. We recognize oftimes even though there is no recollection of previous [in time] encounter or experience. We hear, see or meet something or somebody that we could not have possibly have heard, seen or met before, yet we recognize it or whom. I feel what we can recognize is also a measure of our access to the eternal. That which can be recognized, like certain relationships, exists somewhere outside, above, time.

Our experience with relationship and recognition make clear that we exist both in time and above time. We are both material (existential) and spiritual (eternal). We are both mortal and immortal. Our task here is twofold: to discover who we are and to to sacrilize the world.

Recognition is a special kind of intuition.
It is not sensory based
It is a response to a specific event-trigger.
unlike other intuitions whose onset cannot be exhibited

Recognition is akin to feeling. Is is a feeling like anxiety, or fear or anger — but more subtle. Recognition — all feelings are not local. They are participations

Recognition ⇒ the existence of some kind of relation between the recognizer and what is recognized. Both are part of some invisible whole.

Practice enhances ability to recognize recognition

A DREAM: MARCH 4, 1995 SCRAPS

I was coming out of a meeting onto the street and ran into several astronomers I knew. I was surprised also to run into Guy Omer, for I had read over the past few months notices of his death in three different places. I walked beside him and said, "I'm glad to see you for I had heard that you were dead". he laughed and said, "That piece of news got out and there is no way in the world I can get it retracted." "well", I said, "I see it is not so" he grinned and turned and walked away with a colleague.

Meaning:
Either, as I have dreamed of departed ones before, they are carrying on in another realm, or I shall soon be joining Omer where he is, or both.

COPENHGN.WP6 SCRAPS

THE COPENHAGEN INTERPRETATION

"It is a rejection of the presumption that nature could be understood in terms of elementary space-time realities. According to the new view, the complete description of matter at the atomic level was given by the probability functions that referred, not to underlying microscopic space-time realities, but rather to the macroscopic objects of sense experience. The theoretical structure did not extend down and anchor itself on fundamental microscopic space-time realities. Instead it turned back and anchored itself in the concrete sense realities that form the basis of social life...This pragmatic description is to be contrasted with descriptions that attempt to peer behind the scenes and tell us what is really happening"

Henry Stapp The World of Physics Vol 2. p398

BOHR ON COMPLEMENTARITY

"Just as the freedom of the will is an experiential category of our psychic life, causality may be considered as a mode of perception by which we reduce our sense impressions to order. At the same time, however, we are concerned in both cases with idealizations whose natural limitations are open to investigation and which depend upon one another in the sense that the feeling of volition and the demand for causality are equally indispensable elements in the relation between subject and object which forms the core of the problem of knowledge."

Niels Bohr The How and the Why p332

KARMA1.WP6 March 15, 1995

THE LORDS OF KARMA

Karma is really not very complicated. To begin with we all get what we want in life. But the question is, 'How do the gods know what we want, what to give us'. Certainly if we do not know what we want, they cannot know what we want, and we get nothing. But the gods have two ways of knowing what we want. The first of these is by reading our hearts, finding what we have really written there. Not what we wish, not even what we pray for, but what we have deeply inscribed in our hearts by our way of living. The second way the gods have of knowing what we want is by giving us what we give. If we act in accord with a certain scenario, the gods conclude that that scenario is how we want things to be and arrange our future for us in compliance. But it is really we who design the future, the gods only arrange it to happen.

If in a relationship, for example, we do or fail to do certain things, the Law of Karma decrees that these are the very things that will happen or fail to happen to us in our future relationships. How else can the gods know what to give us? Both the Golden Rule, "Do unto others as you would have them do unto you", and the Categorical Imperative, "Do only those actions which you would have become rules for universal behavior", clearly have their roots in the Law of Karma. Many seem to feel they can escape or repeal the Law of Karma, but sooner or later all must come face to face with the Lords of Karma, and then no one, whatever they do, can alter the outcome.

In the Hindu tradition, we are given the opportunity to rewrite on our hearts at each rebirth. In the Christian tradition, we have the opportunity to rewrite on our hearts when there is true metanoia. Some things are reversible and some are irreversible. What happens in the world of space-time may be irreversible, but we have been promised that in the world of Light, the world of the Spirit, every being may be transformed. There the Christ can overrule the Lords of Karma.

In many cases what karma is about is example!

THE LORDS OF KARMA PART II

The victims of your actions
benefactors

Repeat your actions to others.

This is more than tit-for-tat.
it is a chain letter.

The price Mary Magdalene paid
to give Jesus the pain to
enable him to be a Bodhisattva!
Who was the real Bodhisattva?
Both!!

What about Judas?

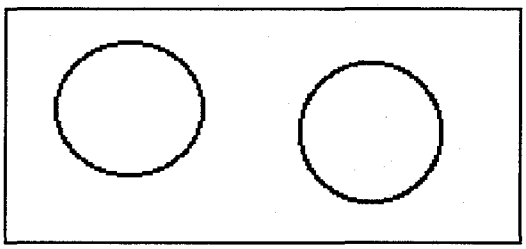
RELCOMM1.WPG
95/03/16

ON RELATIONSHIPS: HAVING IN COMMON

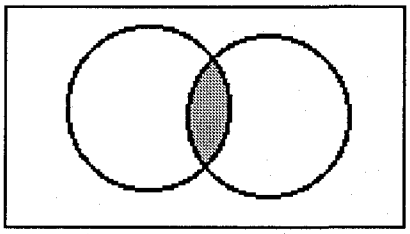
For a relationship to be possible there must be something in common between the two parties. Without an intersect communication and hence relationship is impossible. Fig1.

In every relationship it is important that:

1) A sufficient intersect (overlap) exist for dialog and ability to 'get along' (compatability). Fig2.

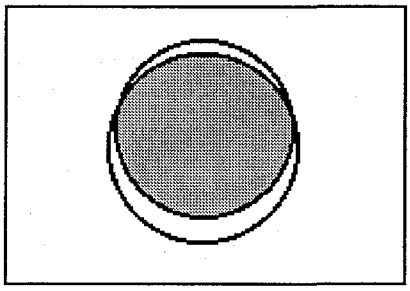


2) However the overlap must not be too great for a) in time boredom will set in, but b) more importantly dialectic (growth, transformation) is impaired and the relationship stagnates. Fig3.



3) The intersect must contain common virtues, values and visions.

4) What lies outside the intersect are a) the gifts that each can bring to the other to the enhancement of each other. These are what they already possess. [e.g. the gift of seeing the world through each others eyes. valuable only if the perspectives are different.] and b) the seeds of growth and transformation, and what dialectic will produce through mutual support.



Not enough in common: dissatisfaction, frustration

Too much in common: stagnation

See Birkhoff & MacLane p 311 ff

Intersection $A \cap B$, $A \times B$, A and B

Union $A \cup B$, $A + B$, A or B

A' = complement = NOT A

$A + A' = I$

$A \times A' = 0$

The Taoist beginning of no-beginning

Introduce $\bar{A}$ and $\bar{A}'$

3. $A \oplus \bar{A} = 0$ Divac

algful.wp6 March 16, 1995

The Algorithm of Fulfillment

The first part of life is for exploration. To find what exists, what paths are available, what people are out there.

Next comes selection, fixing on the path you feel fits, on the one you can call your own. At this stage one switches from the exploration of variety to the direct pursuit of fulfillment. You select the path you feel will lead to fulfillment, select the person with whom you feel you can write the second sentence of life.

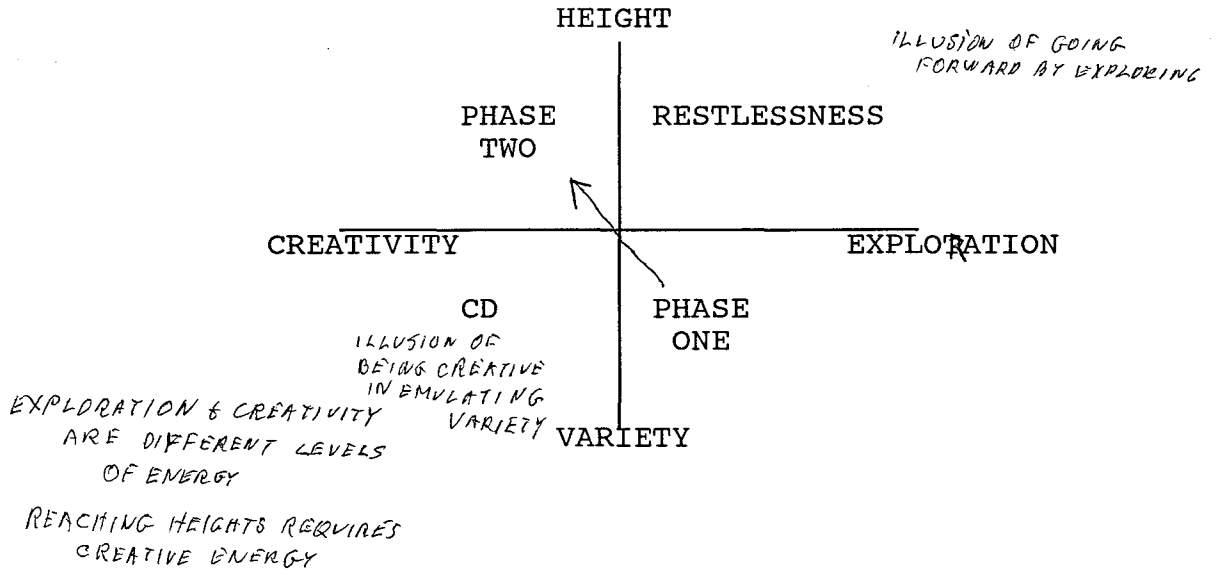
If successful in the selection, creation begins to replace exploration. Indeed the second sentence of life about creativity.

There are many places to get blocked along the path

If not successful, one has the choice of going back to square one and re-entering the variety level, or remaining on the creativity level and making solutions rather than hunting for them. Our energies can be expended either for going into depth and reaching for new heights or for spreading broadly into various repetitive agendas. [Which in essence is abandonment of fulfillment]

Sometimes people return to the exploration/variety level to "confirm their path" This is delusion. They return to the variety level because it is easier to redo something they have done before than it is to go forward to a new and higher place. The false newness in the variety is a deception for the true newness of place on the path. [However all newness is euphoric]

Finally, T.S. Eliot holds that old age is again for exploration. But only when one has reached a new world to explore. This does not mean trying to return the youthful pursuits.



(F)

SOMEAPH.WP6 March 20, 1995

The greatest pleasure I know is to do a good action by stealth and to have it found out by accident.
Charles Lamb

Tea has not the arrogance of wine, the self-consciousness of coffee, not the simpering innocence of cocoa.
Okakura Kakuzo The Book of Tea

Discordant concord is the path life needs.
Ovid

All composite things are by nature impermanent.
Sakyamuni

Those who most ignore, least escape.
David Hawkins

Information is always at boundaries, whether these are boundaries in time, space, or level of abstraction.
Gregory Bateson

The boundary of the boundary is zero.
J.A.Wheeler

There are necessarily certain facts, certain elements of the physical reality of the world, which have no corresponding elements in our formalisms. cf Gödel
David Albert (p66)

The central difficulty at the foundations of quantum mechanics is the difficulty about measurement.
David Albert (p ix)

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

The universe sets aside part of itself to reference itself.

Gödel's theorem tells us that understanding reality lies beyond rational thought.
Li Kiang

No system is capable of explaining itself, therefore hierarchy.
Li Kiang

COMEAREC.WP6 NEW EPIONT March 20, 1995

COMPLEMENTARITY-MEASUREMENT-RECOGNITION

COMPLEMANTARITY: held basic by Kafatos and Nadeau
The Conscious Universe

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

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

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

Eating of one tree precludes...

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

See also 95#10, #14

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

= "The Cosmic Mind"

Hamming non-localism

In the beginning was the Word

{[Measurement creates information

example of constraint → creation
what is created is information

The creation of information is what is involved
in the collapse of the wave function
in the conversion of potential into actuality
into localism, i.e. space, time

The Sunyata is informationless
no form - void - no information]}

with death the information disappears

"The mystery yet to be clarified [in Quantum Mechanics] is the exact nature of the act of measurement. Here it is that the potential becomes actual; the electron which has been a superposition of here and there on being addressed with the experimental question "where are you" has to settle for one or the other.

Polkinghorne,

Physics, Philosophy, Theology p 336

{[Is the modulation of white noise by white noise involved?]}

archther.wp6 March 21, 1995

BRIDGING TWO WORLDS

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

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

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

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

THE ARCHITECT AS THERAPIST

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

Ieoh Ming Pei

See also
95-#33
94-#61

THE BUDDHIST-CHRISTIAN DIALECTIC

PROLOGUE

A question frequently arising in the study of origins is whether things that appear in different parts of the world have been independently discovered or have been discovered in one place and their existence communicated to others. This question of independent origin versus diffusion becomes more critical as the estimated periods of first appearance in the different locations converge toward the same date. Adherents of the independent discovery hypothesis feel that when a need becomes pressing and the levels of cultures are similar it is inevitable that such things as the use of fire, agriculture, the wheel, etc. will take place without any communication between cultures. The diffusion school holds that when the time is ripe an innovation will occur through the efforts of some genius and that the development will then spread abroad by word of mouth. [An intermediate view would be a single point of origin with the spread occurring not by communication, but by the "100th Monkey Process"]

Southern California is frequently plagued by brush fires and when there is a high wind these fires can spread rapidly and do considerable damage. Consequently the origins and modes of spreading of these fires became a subject of scientific study. It had been universally thought that wind blown hot ash was the vehicle of spread. But then from time to time a fire would spread up wind! This occurrence led to an investigation in which high speed cameras were brought in to study in as much detail as possible the manners in which a fire could spread. The cameras recorded instances in which a turbulent tube of fire would sweep up and arch over a large distance touching down and igniting brush even in a direction contrary to the wind. These turbulent tubes resembled the prominences seen on the limb of the sun and in one case bridged a freeway frustrating attempts to contain the fire.

Now what have these Southern California brush fires to do with the independent discovery/diffusion question? They suggest a third alternative to the spread of discoveries and innovations. The fire, the discovery, the innovation, contains its own imperative. That which was incarnated takes charge and commands its own transmission. The result may appear as independent origin or as diffusion depending on temporal sequences but the driving force lies neither with the discoverer nor the transmitter. It resides in the innovation itself which mandates both its birth and its diffusion. .

Buddchr1.wp6 March 30, 1995

4 Hypotheses according to Roy Amore

1) Coincidence
2) God → Universal Truth will be discovered and re-discovered
3) ∃ an Ur-Source [Upanishads?]
4) Diffusion

JudeoChristian → BuddheoChristian

The message has its own imperative, life

SOME QUESTIONS OF HISTORY

It is highly probable that the great confluence and exchange of ideas taking place in Alexandria around the beginning of the common era included the teachings of the Buddha. It has been surmised that his teachings could have been brought westward by Alexander's army returning from India c 320 B.C.E. But Buddhism was a minor sect in India until its endorsement by Ashoka c 240 B.C.E. It is more probable that the Buddhist teachings diffused westward during the period of dominance of the Seleucid empire in the second century B.C.E. which supported a Greek-Oriental cultural bridge. Whatever the details such Buddhist ideas as the illusory nature of sense data, the non-reality of the impermanent, etc. (Megarians and Eleatics) were being debated in Mediterranean cities by the time of Jesus. Again independent origin or diffusion is of secondary importance. What is of importance is that the same ideas had been significated in both East and West. The dialectic then consisted of the antiphonal development of the these ideas through an Eastern-Hellenic exchange.

The first antiphony consists of the specific Buddhist ideas that appear in the Gospels but not in the Old Testament.

The second antiphony resulted in what was probably transmitted to India by St. Thomas in the first century. The Christian doctrine of selfless love and the sacrificial savior, i.e. the idea of the Bodhisattva, entered Buddhist tradition with the Mahayana. Records indicate that this occurred in about the first or second century of the common era. [The first Mahayana sutra was in the first century A.D.]

The third antiphony is occurring at the present time. This involves a dialog between Zen and western culture, a dialog between Vajrayana and western psychology, quantum physics, and Amerindian spirituality. Christianity is responding primarily through a re-examination of its own roots. Certain facets of Eastern Orthodoxy, Celtic Christianity, and the long tradition of Christian mysticism are being re-evaluated together with the materials brought to light in the Dead Sea Scrolls and at Nag Hamadi. What the results of this third antiphony will be it is too early to say, but undoubtedly a deeper understanding of ourselves and our place in the world is emerging.

In all there appears to be an on going historical dialectical exchange or antiphonal dialogue between Buddhism and Christianity resulting in the evolution and refinement of both.

" The early centuries after Christ were very prosperous ones for Buddhism. In the Northwest it seems to have been the major religion, for hardly any specifically Hindu remains of this period are to be found there. Elsewhere in India the influence of Buddhism can be measured by the numerous remains of stupas and monasteries, which are among the finest and most beautiful relics of ancient Indian civilization. From India, Buddhism spread not only to Central Asia and China but also to many parts of Southeast Asia. It is certain that it had some effect on the religious thought of the Middle East, and Buddhist influence has been traced in Neo-Platonism, Gnosticism, and Manichaeism. **Many authorities believe that early Christianity was influenced, directly or indirectly, by Buddhist ideas.** In the Eastern churches the story of Buddha's abandonment of his home for a life of asceticism, "the Great Going-forth," has been adapted as a Christian legend, the name of its protagonist, St. Josaphat, being evidently a corruption of the word *bodhisattva.* " 188

" In many passages of the Mahayana scriptures there is found what purports to be the solemn resolve made by a bodhisattva at the beginning of his career. The following fine passage will appear particularly striking to Western readers, for in it the bodhisattva not only resolves to pity and help all mortal beings, but also to share their most intense suffering. Christians and Jews cannot fail to note resemblances to the concept of the suffering savior in Christianity and to the "Servant Passages" of Isaiah (53:3-12). **It is by no means impossible that there was some Christian influence on Mahayana Buddhism,** for Christian missionaries were active in Persia very early, and it became a center from which Nestorian Christianity was diffused throughout Asia. From the middle of the third century, Persian influence in Afghanistan and Northwestern India, which had already been felt, was intensified with the rise of the Sasanian Empire; and it was in these regions that Mahayana Buddhism developed and flourished. Thus Christian influence cannot be ruled out. But it is equally possible that the similarities between the concepts of the suffering savior in Buddhism and Christianity are due to the fact that compassionate minds everywhere tend to think alike. " 161

BODHI4.WP6

From Sources of Indian Tradition
A. T. Embree Ed
p. 161 + p 188

KNOWLEDGE AND UNDERSTANDING

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

Knowledge	Understanding
Derives from communication (a special limited kind of experience) Is inculcated and truncated by verbal and symbolic communication	Derives from direct experience and deep involvement May be symbolized usually in ritual
Head centered	Heart centered
Involves memory and recollection and the creation of a code book	Involves recognition and an indigenous "code book" Where is this code book? In the collective unconscious? In past experience? Outside of time?
Usually requires repetition to gain significance.	May involve only a single occurrence.
Organization of Knowledge Requires an epistemology First, the creation of a schema or matrix for organizing inputs, then the proper placing of the inputs.	Organization of Understanding Experiences into stories Stories into archetypes Archetypes back to Myths Since understanding involves recognition and we can recognize ourselves and our experiences best through stories, the story is the module of understanding. [story=anecdote=parable=myth]

theott2.wp6 **April 5, 1995**

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

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

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

KNOWLEDGE ≠ UNDERSTANDING ≠ REALIZATION ≠ LIBERATION
MINDFULNESS ENLIGHTENMENT TRANSFORMATION

≠ EXPLANATION

REL/THEO

GURDCOSM.WP6 April 6, 1995 rev April 14, 1995

GURDIEFF'S APPROACH TO COSMOGONY

APOPHÁSIS or VIA NEGATIVA

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

0.) Prior to the first creation there was total and universal potential. Then there was the formulation of constraints, the making of the laws. that is, In the beginning was the word.

1.) The first creation was subject to all of the laws. It was the creation of inorganic matter and was subject to impermanence and decay. (Maxwell-Boltzman statistics?)

2.) The second creation was that of systems free of the Second Law of Thermodynamics. These were systems effecting mutual sustainability, living systems that locally violated the second law. (Fermi-Dirac statistics?)

3.) The third creation was that of systems free of determinism, systems that could make choices.

{[4.) The fourth creation: Systems with the ability to create situations and objects of choice.

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

We may modify this as follows:
1) Vairacona effects an emergence from the Sunyata, which is the the repository of infinite potential, by establishing constraints. The process follows from [1-α] rather than from α, that is by negation. Here 1 stands for infinity, everything.

2) A stepwise removal of constraints by Aksobya. Actualization

3) Testing of consistency and harmoniousness by Ratna Sambhava.

4) Exploring the possibilities, uniqueness and spontaneity by Amitaba.

5) Modifications (actions) by Amoga Siddhi.

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

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

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

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

> *In the experiments about atomic events we have to do with things and facts, with phenomena which are just as real as any phenomena of daily life. But the atoms or elementary particales are not as real; they form a world of potentialities or possibilities rather than one of things or facts.*
>
> *Heisenberg*
> from Polkinghorne's "Quantum World" p81

- The three bodies:

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

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

The New Jerusalem is not a constructed world-image but a pre-existent archetype which reveals itself
– John Michell: "The Dimensions of Paradise" p207

You and I, Arjuna,
Have lived many lives.
I remember them all:
You do not remember.

I am the birthless, the deathless,
Lord of all that breathes.
I seem to be born:
It is only seeming,
Only my Maya.
I am still master
Of my Prakriti,
The power that makes me.

When goodness grows weak,
When evil increases,
I make myself a body.

In every age I come back
To deliver the holy,
To destroy the sin of the sinner,
To establish righteousness.

He who knows the nature
Of my task and my holy birth
Is not reborn
When he leaves this body:
He comes to me.

Flying from fear,
From lust and anger,
He hides in me
His refuge, his safety:
Burnt clean in the blaze of my being,
In me many find home.

Whatever wish men bring me in worship,
That wish I grant them.
Whatever path men travel
Is my path:
No matter where they walk
It leads to me.

Lord Krishna
Bhagavad Gita

TIDEO/REL
Kirkland, WA 95/04/07
Master Bhagavad Gita p31

When Righteousness declines
O Bharata! When wickedness
Is strong, I rise, from age to age
and take
Visible shape, and move as a man
with men,
Succouring the good, thrusting evil back,
And setting Virtue on her throne seat again.

– Bhagavad Gita

When righteousness declines
O Bharata!
When wickenness is strong,
I rise, from age to age
And take visible shape,
And move as a man with men,
Succoring the good,
Thrusting evil back,
And setting Virtue
Again on her throne.

--LORD KRISHNA

FROM THE BHAGAVAD GITA

KRISHNA 2
RSL/TITEO

From Capra's Paradigms Lost p 416

OBJECTIVE AND CONTEXTUAL REALITY

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

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

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

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

WHEELER.WPG 95/04/07 FROM CASTI'S PARADIGMS LOST p416

THEO/REL

THEO/REL

REENTIF1.WP6 April 10, 1995, rev April 13, 1995

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

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

Ralph Gerard--Hierarchical Structures p219-220

IN WHAT WAYS MAY WE RE-ENTIFY?

SOME CANDIDATES:

1) By signification
2) By exploring new units, (Gerard)
3) By interchange of levels
4) By *peri-dia* interchange
5) By the contruction of duals
6) By non-Aristotelean logics
7) By morphological negation apophasis
8) By Vajrayana meditation

SIGNIFICATION:

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

UNITS:

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

LEVELS:

Examples could be the exchange of balls and boxes as employed in statistical mechanics, or the exchange of address and content. e.g. Gurdieff's cosmogony / information template ⇄ its material manifestation

PERI-DIA:

This involves the exchange of Synchronicity and Causality.

Serendipity

DUALS:
From projective geometry (flat Euclidian space)

Another Example: Hierarchy & Multiplexing (97/02/20)

Two points determine a line

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

Two lines determine a point

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

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

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

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

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

Alternate Spaces e.g. Hamming

NEGATION: Apophasis, Via Negativa
Approach as in sculpting, defining through removal of what does not belong.

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

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

abstract ⇔ {macros}
"
truncations

THEOTT1.WP6 THEO/REL April 5, 1995

SOME THINKTANK NOTES

THE THEOLOGICAL THINKTANK (T^3) GROUP

- Beginning with "The Ground We Share", we are exposed to the concept that spiritual experience is primary but that its interpretation is culturally bound. For example,

  > "Strange as it may seem, the idea of "God", like the other great religious insights of the period, developed in a market economy in a spirit of agressive capitalism."
  > Karen Armstrong A History of God, p27

  This may have been at root of Marx attack on religion.

  It is important to note that taking experience as primary is positivism not realism.

  An interpretation both enables and limits future experience, favoring supportive experience and downgrading or denying other experience.

  Culture also sets emphases. We have the Buddhist emphasis on the escape from suffereing through the Four Noble Truths. Christianity, on the other hand, supports suffering and even emphasises *intentional suffering*. Jesus gives the example of this himself when after the formal termination of his ministry on the Mount of the Transfiguration, he went on to Jerusalem to the sacrifice. Without this, the crucifixion, there would have been no survival, that is resurrection, of the ministry--the gospels.

- Beyond culture, the deepest spiritual experience is always blissful, restful, peaceful.

- All morality originates in belonging.

  All apiritual paths lead to the summit of the same mountain. But some may play out half way up. (cf the Rabbi's story re the piece of jade) However different paths on the way traverse different territory and therefore we find different emphases.

EMPHASES IN VARIOUS RELIGIONS:

Taoism	energy
Confucism	ethics fortune
Hinduism	karma
Jainism	life
Buddhism	suffering
Theravadin	individual enlightenment
Mahayana	universal enlightenment
Zarathustra	conflict good and evil
Judaism	justice
Christianity	love, forgiveness
Catholic	individual salvation
Orthodox	Theosis: sacrilization of the world
Islam	surrender, Oneness

- From the study of Jacob Needleman's "Lost Christianity", we were put on the trail of some vital portions of early Christianity that have disappeared, especially in the West. These include the replacement of theosis by individual salvation, the degredation of man by original sin (see Psalm 51), invoking the Name being sufficient to salvation, the equating of soul and spirit....

ON CHRISTIANITY AND BUDDHISM

- The Christian mystical tradition is found to have much in common with Buddhism.

- Buddhism has no dogmas and no creeds (It does have pledges, such as the pledge of Kwan Yin.)

- Buddhism is concerned with ontology rather than theology.

- The creation by Vairachona from the Sunyata is parallel to the collapse of the wave function in quantum mechanics. Both infer two levels of existence with coming into the world of space-time effected in one case by the making of constraints, and in the other by making an observation or measurement.

- Unity beyond the Brotherhood of man. Jesus in the Gospel of Thomas: If there are those who suffer, then I suffer. Muhammed: When one member of Islam is in pain, the whole body of Islam is in pain.

Education in the West is by schools, books, teaching. In the East learning is through experiencing. One leads to knowledge the other to understanding. Inculcation w preparing an experience.

Recognition requires reincarnation only if all is imbedded

in linear time.

Where is the source of potential? In the sunyata?

The higher sacrifices for the lower.

The divinity is in the message not in the messenger.

The Virgin Mary in saying "Be it done unto me according to thy will" became a saint of Islam, for her surrender.

Breath is the metaphor for departure and return.
Breathe in explore
Breathe out create

Mara was overcome when Sakyamuni agreed to preach.

When Jesus said on the cross, "Father forgive them they know not what they do", he knew at that instant that he had won.

Do not meditate for enlightenment, but so that enlightenment can happen.

INFO1.WP6 April 15, 1995

WHAT IS INFORMATION?

At the present engineers, scientists, philosophers, and the business world are trying to formulate just what information is. All that can be agreed upon at this point is that information is one of the fundamental concept-quantities that has emerged from our experiencing of the world, along with such other fundamental concept-quantities as energy, matter, space, and time. While matter, space and time have been intellectual currency for millenia, the idea of energy was formulated only in the nineteenth century, and information only in the present century.

Currently there are four approaches to the idea of information:

1) One of the first notions concerning information came from Shannon: The amount of information in a message is proportional to its degree of unexpectedness. Casti adds information has to do with the level of surprise. Don says whatever is out of the ordinary. So it seems that according to this approach information has to do with surprise, the unexpected, or what is out of the ordinary.

2) A second approach has to do with choice. The unit of information is the bit or binary choice: The choice between the elements in any mutually exclusive dyadic division, such as between true and false, plus or minus, zero and one.

3) A third approach was derived by the physicist Szilard. He noted that information is like negative entropy. And since entropy is always increasing, information is consequently always decreasing.

4) A fourth approach has to do with the needs of a user. That portion of data that is of use or meaning to a particular person at a particular time is information for that person, for all the rest it is just data. noise receiver must have code book

Signal / Noise

5) Chaitin - Kolmogorov Message length = length of generator, when equal, totally random

The foregoing attributes of information emphasize its dynamic nature. They hold that information is never static, it is moving, being sent and received, being created or destroyed. Yet there is a static kind of information, the information contained in a form or pattern and the information required to generate that form or pattern, DNA/RNA, for example. While the genetic code contains information for living forms, might we not appropriately ask is not the

SCRAPS

interstices?

Information is always at boundaries,
whether these are boundaries in time,
space, or level of abstraction.

Gregory Bateson

Jews thrived in Spain at the interstice of Islam + Christianity

Life, Civilization, invention, information
flourish at and in the interstices
Where neither tectonic plate can dominate
and juxtaposition is possible

high gradient energy flows

cf
95 - #30 ON INFORMATION
#22 Bridging Two Worlds

---

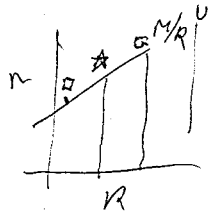
are there $\frac{V}{S}$ $\frac{M}{R}$ boundaries
or interstices?

yes - the Schwarzschild Limit
and there the celestial inhabitants - stars, galaxies, ...
come into existence.

for cosmology

$\frac{M}{R} \leq B$ as $R\uparrow$ $\frac{M}{R}\downarrow$

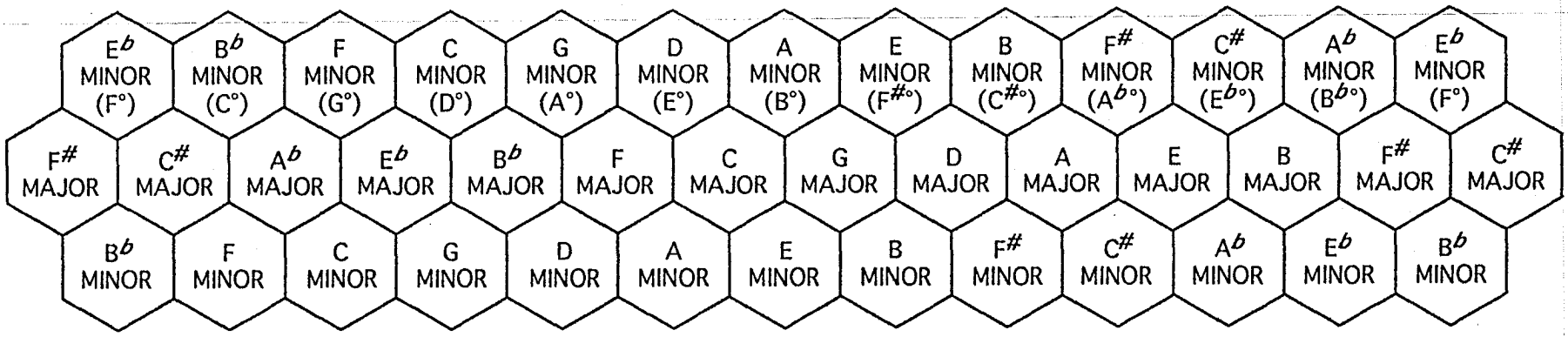
but when $\frac{M}{R} = B$, stars galaxies come into being

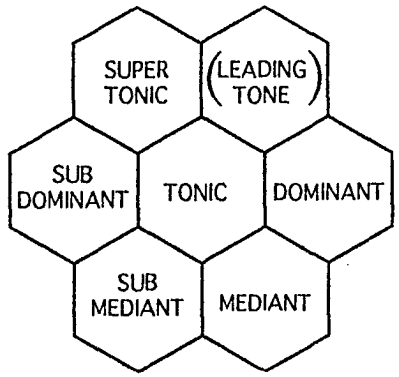


Expanding Universe

First the particles then □, the dark matter
then ☆, then galaxies

MAJOR SCALE
CHORDS FOR TWELVE KEYS





° = DIMINISHED
LOWER CASE LATIN = MINOR
UPPER CASE LATIN = MAJOR
( ) = LEADING·TONE

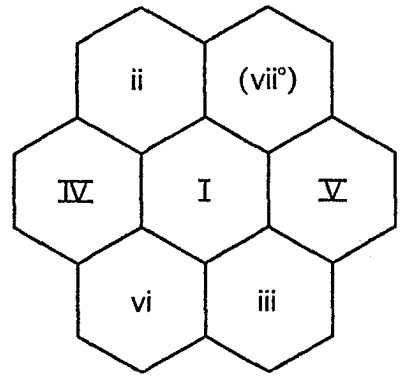


FIG. 5

information for inanimate forms-- for crystals, for molecules and atoms-- also stored somewhere? And what about the information stored in books? Is it not just data until it satisfies the dynamic need of some user.?

Whenever we make an observation or a measurement we are creating information, [individual measurements may not result in increased information, but a set of such measurements can], and as a consequence we are also locally decreasing entropy. Since entropy is a measure of disorder, the increase in information leads therefore to increasing order. One of the best definitions of life is that living systems have the ability to locally and temporally decrease entropy. Since information and entropy balance one another, living systems are characterized by creating information and order in the cosmos. But there seem to be other forces, besides life forces, that also create order. – such as iterated random?

Observaton and measurement are acts of actualization. And whenever there is actualization, potentiality is decreased. We may model this as viewing potentiality as existing on one level and actuality on another, an observation or measurement transfers information (and possibly some other essence) from the potentiality level to the actual or existential level. (cf David Bohm's two orders) In quantum mechanics actualization results from the collapse of the wave function [J.G.Bennett's *hyparxis*] transforming something that was global into something local. coupling between levels

All potentiality appears to reside in the higher level. In the process of actualization, siphoning to the existential level, do we deplete potentiality or is potentiality renewable? or does work here on the existential level, renew potential? take the example of closing for publication.

Some have noted that information is more like light than like matter, having attributes that some associate with the spiritual.

Information: A measure of the delocalization of the state of the system in the space of all possible events.

Information is the currency of nature. p 193 (Santa Fe Inst Book)

Food as information (and energy) Again in code book is necessary

Meta-Life: The Forces, processes that create order Apollo

See Ivar Peterson "The Jungles of Randomness" p197

on information ~~of~~ message length recipe length for creating message

Chaitin + Kolmogorov

Is random 0 information or ∞ information?

CRITHINK.WP6 April 18, 1995

SOME NOTES ON CRITICAL THINKING

Critical thinking is thinking that follows a set of canonical rules, including the canonical set of no-rules. Rational thinking is a particular subset of critical thinking that employs the rules of some brand of logic, such as Aristotelean logic, or the rules of evidence used in courts of law.

The Hierarchy

CRITICAL THINKING
RATIONAL THINKING
LOGICAL OR SYLOGISTIC THINKING

SOME OF THE TOOLS OF CRITICAL THINKING:
JUXTAPOSITION
VIZUALIZATION
FALSIFICATION
PATTERN INFERENCE (VS. LINEAR OR LOGICAL THINKING)
QUADRIC DIAGRAMS
RATIOS AND PROPORTIONS
STANDARD REGIONS
INTERGHANGE GROUND AND FIGURE,,,DUALS
WHO BENEFITS? (CF SHERLOCK HOLMES)
IMBEDDING IN LARGER CONTEXT
Apóphasis
Data Display

THE TRIVIUM
GRAMMAR
LOGIC
RHETORIC

THE QUADRIVIUM
ARITHMETIC
MUSIC
GEOMETRY
ASTRONOMY

ANALYSIS VS SYNTHESIS
DEDUCTION VS INDUCTION
KNOWLEDGE VS UNDERSTANDING

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

FIGURE 2.2

THE BEING-FUNCTION MATRIX

Levels of Consciousness	Sensory/ Motor	Affective	Intellectual	Inter-personal
I = I; Creative	• Creative expression in material objects	• Ecstasy • Illumination	• Transcendental insight • Hypothesis creation	• Inspired leadership • Power to create situations
I-Thou; Conscious	• Insight into workings of Nature	• Impartial judgment • Power of decision	• Originality in thought • Clarity	• Understanding of people • Friendship
I-It; Sensitive	• Adaptive skills • Craftsmanship	• Emotional stability	• Logical reasoning • Consistency	• Group sense • Cooperation
I-Not I; Automatic	• Nonadaptive manual skills	• Motivation without understanding	• Memory and verbal association	• Herd instinct • Collective predictability

GSTNOTE1.WP6 April 20, 1995

SOME NOTES ON GENERAL SYSTEMS THEORY

Reasons for the stagnation of GST:

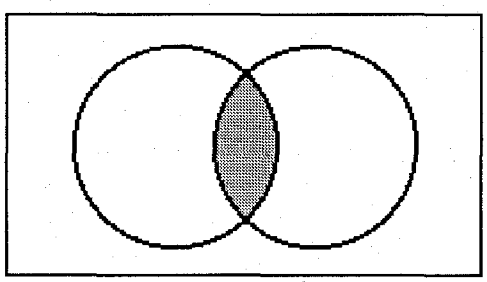
Limitations imposed by a one level worldview

Misunderstanding the product of GST approach
Working for consensus rather than to let 10,000 blossoms bloom. Goal is not convergence but to be "plant like"

Misunderstanding the process
Create environment for an experience to happen, such as the confluence in Mexico City that resulted in Cybernetics. Present were Margaret Meade, Gregory Bateson, Norbert Wiener,.. Creation of a group mind!

Campbell
West: Transient facts
East: Create Experience

The intersect is the domain of GST.



Preparing to Receive
vs
Attaining a Goal

Interdisciplinary
vs not-parceling
Multidisciplinary → juxtaposition
parceling

SOME REMARKS ON LEVELS:

Consider the example of balls and boxes as used in statistical mechanics. Balls and boxes cannot be placed on the same level. In general, whenever there are two species of elements that must remain distinguished, two levels are required.

Another example: The ~~two~~ 4 sets of orientation coordinates:
3) Shipboard starboard, port, bow, stern
2) Horizonal north, south, east, west
must be distinguished to be useful for piloting and navigation.
1) Personal right, left, front, back
4) chart north, south, west, east

∃ levels when ∃ {elements} that are non-interchangeable.

i.e. non-dual

SCRAPS

See Also 94-#61

ACTACTN.WP6 April 23, 1995 95-#23

97-#5

MESSAGE AND MESSANGER

The poet asks, "How do we tell the dance from the dancer?" and the yogi asks, "Is the meditator not the meditation?" These questions are of the genus, "How do we tell the action from the actor?" In Darius' day in ancient Persia the messager was held to be part of the message and it was the custom to put to death a messenger who brought bad news. Evidently from earliest times to the present people have found the action/actor discrimination to be difficult. Is not Mcluhan's "The medium is the message" refering to the same identificaton?

Examples of mixing the message with the messenger that have had far reaching consequences occurred in the field of religion. When a teacher brings a great message, the teacher is again viewed as part of the message and is bestowed with the qualities of the message. If the message appears to come from God, the messenger is deified, as happened to both Jesus and Siddhartha, and earlier to Hermes/Thoth. Nonetheless, **the divinity resides in the message, not in the messenger.** God, the Word, resides in the Gospels, not in the man Jesus. However, it was though the human Jesus that the Gospels were incarnated and through his sacrafice that they were given life and the ability to survive through time.

One of the most difficult examples of this question occurs in separating the Creator from Creation. Before there was Creation, was there a Creator? Or did the Creator come into existence only at the moment of Creation? In the former case, the Creator and Creation can be separated, in the later they cannot for the Creator is created along with Creation. The Action, the actors, and the consequences are inseparable. Which way are we to think about this? Traditionally Creator and Creation were separate, but St. Augustine raised the possibility of the simultaneity of their coming into existence. And today creation ex-nihilo becomes of interest in the simultaneous creation of plus and minus, of matter and anti-matter. co-emergence

We, through our rituals, separate the Creator from Creation. When another party celebrates the action/actor that is not originally his, then the two are separated. Thus mankind created God. See 93-#17

when linear - can be separated e.g. message
when non-linear - cannot be separated as dance. unity

non-linear cannot be separated

The artisan is one with everything he ever made.

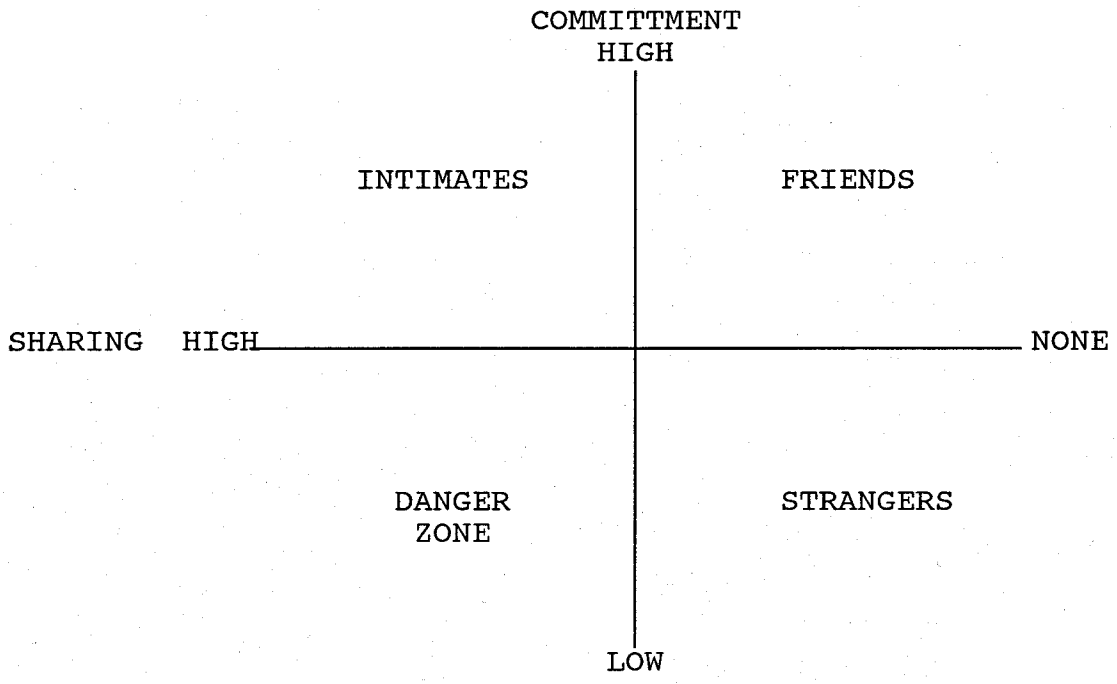
I am the totality of my creation

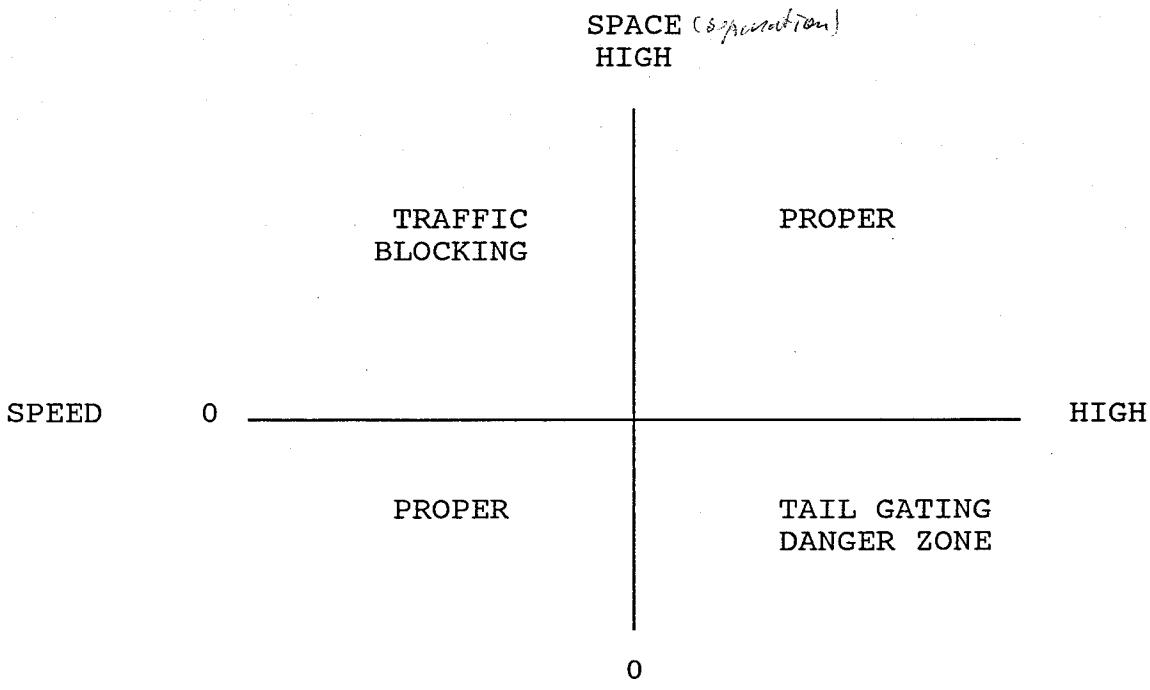
Talk show hosts resent Clinton's criticism. They say he is killing the messenger.

SCRAPS

QUAD1.WP6 April 24, 1995

TWO QUADRIC DIAGRAMS INVOLVING CONTINUOUS PARAMETERS





SCRAPS

Who First Called Kepler's Laws "Laws"?

(From the American Astronomical Society Newsletter)

Not Isaac Newton, who in 1686 wrote Halley: "Kepler knew ye Orb to be not circular but oval & guest it to be elliptical." Surely the ellipticity of the planetary orbits could not be established on the basis of observation alone. Newton himself deduced it in Prop. 13 of Book III of the "Principia" from his inverse-square law of gravitation.

As for Kepler's area rule, Newton did not give Kepler credit for having established it, but took its approximate truth to be inferable "from the Phenomena. " That circumsolar planets move in slightly eccentric near-circles --slightly more rapidly at perihelion than at aphelion -- was an approximate verification of the rule. It indicated to Newton (but not to Kepler) that forces act on the planets in the direction of the Sun.

Newton acknowledged Kepler's discovery of the third (harmonic) law, that the square of the orbital period is proportional to the cube of the semimajor axis. But some of his disciples felt more general credit should go to Kepler. "The sagacious Kepler," said David Gregory, "had got the Scent of" the Celestial Physics, that Newton then "brought to such a Pitch, as surprises all the world." William Whiston called Kepler "the Parent of Newtonian Philosophy." But neither called Kepler's rules "laws."

The first to do so was Voltaire. In his "Elements of the Philosophy of Newton" (1738) he wrote of the area rule: "This Law inviolably observed by all the Planets... was discovered about 150 Years ago by Kepler, who has merited the name of Legislator in Astronomy, notwithstanding his Philosophical Errors... The extreme Sagacity of Kepler discovered (die) the Effect, of which the Genius of Newton has found out the Cause."

Similarly, Voltaire called the third Keplerian rule a "law," and added that "Kepler, who found this Proportion, was very far from finding the Reason of it..." As for the ellipticity of the orbits, Voltaire, without calling it a "law," posed it as one of three empirical premises implying the inverse-square law of gravitation (the other two were the third Keplerian rule, and the comparison of the Moon's acceleration to that of a falling stone on Earth). In taking

Replaw.wp6
SCRAPS

95/04/26

the ellipticity of the orbits as an empirical premise implying inverse-square law, Voltaire was relying on a passage from Henry Pemberton's "A view of Sir Isaac Newton's Philosophy" (1728). Pemberton having been Newton's editor for the third edition of the "Principia" should have known better.

Why "Laws?" The idea of natural law was medieval; it signified the divine decrees whereby different things received their natures. In the seventeenth century, with the advent of the mechanical philosophy, it came to mean "those rules of motion, and that order amongst things corporeal," that God had established (Boyle). Such were Newton's "Axiomata sive Leges Motus. " Laws in this usage were fundamental principles.

Voltaire's application of this term to Kepler's rules caught on. D'Alembert in the "Encyclopedie" (175 1) spoke of two such laws, area rule and the harmonic rule, and added that these two laws "guided Newton in his system."

The first explicitly to number three such laws appears to have been Robert Small in his "An Account of the Astronomical Discoveries of Kepler" (1804). Small saw Kepler's discovery of his laws as exemplifying Baconian method; Kepler's laws, being empirically established, "were the foundations of the whole theory of Newton " Through the nineteenth century, Englishmen like John Hershel, David Brewster and J. S. Mill plumped for the Baconian interpretation of Kepler's laws as results of "induction from pure observation."

All this would have surprised Kepler, who knew that physical hypothesis was central to his enterprise. (His claim in Chapter 58 of the "Astronomia nova" to have shown the unintenability of orbital shapes other than the elliptical was a delusion, as D.T. Whiteside pointed out in 1974.) He had replaced a two-thousand-year-old tradition of epicycles and eccentrics, And achieved planetary tables embodying elliptical orbit and area rule, more accurate than any achieved before. But this revolution rested on a dynamics that Newton and we have to reject. Given Newton's Leges Motus, the facts required a radical reinterpretation; Newton supplied it,

CARTVAL1.WP6 May 3, 1995

A CARTOGRAPHY OF THE TRANS-RATIONAL

Concepts such as patience, generosity, and gratitude, based on feelings, emotions, and the subjective elements of human experience are so largely personal and individualistic that the conventional epistemologies of scientific and logical thinking, based on universality and repeatability are not applicable to their discussion. However, in spite of the difficulty and inappropriateness of subjecting feelings to rational operations, it is still possible to discern patterns and create schemata of order in this area of experience.

It is useful at the start to discriminate the term *values* from the term *virtues.* Values arise in situations where there exists choice, not in the deterministic imperatives common to that portion of the natural order amenable to scientific inquiry. Values are culturally and chronologically based. They change with the cultural context and with the times. Virtues, on the other hand, tend to be trans-cultural and independent of the changes wrought by time. They may not be absolutes nor totally equatable to 'truth', but they exist on a distinct level from values and can serve as criteria for the evaluation of values.

Here are some examples of both:

VALUES	VIRTUES Bodhicittas
Happiness	Allegiance
Health	Commitment
Honesty	Courage
Hospitality	Determination
Human life	Duty
Knowledge	Generosity
Kindness	Gratitude
Non-violence	Integrity
Pleasure	Loyalty (Josiah Royce)
Profit	Persistence
Non-Suffering	Patience
Thrift	

Beside the cultural and trans-cultural difference, virtues are things that are universally admired and respected, whatever their attachment is toward. There can be much disagreement on what should appear in the left hand list, but most would coopt all of the entrees in the right hand list to be emulated and practiced in their lives. So universal admiration and respect for a trait tends to render it a virtue.

SACRIF01.WP6 May 3, 1995

ON SACRIFICE

Theorems on sacrifice:

1. A] One is permitted to sacrifice only that which is theirs, their possessions, their money, their health, their life,...The difficult question here is often , What belongs to one?

B] A more strict interpretation of this first theorem is that one can sacrifice only themselves, not even that which just 'belongs' to them. The difficult distinction here is that between oneself and one's belongings, the message and the messenger, the dance and the dancer.

2. A] The usual sacrifice is the lower for the higher. In the Gospel of Thomas it says: It is well for the man to eat the lion but not for the lion to eat the man.

B] The higher is sacrificed for the lower only in rare and profound circumstances. God sacrificed His son for the sins of the world. Certainly a sacrifice of the higher for the lower. And certainly a sacrifice of something that belonged to God. But in the strict interpretation, theorem 1 B], God had no right to sacrifice His Son, therefore the sacrifice led to the notion of the Trinity, God was indeed sacrificing only Himself, because the Son was part of God.

Which collumn, VALUE or VIRTUE, does sacrifice belong in? If either.

Sacrifice of —
for —
to —
by —

Sacrifice as "a deal with the divinity"

Thankful for
to
by
m of

If there is righteousness in the heart,
there will be beauty in the character.
If there is beauty in the character,
there will be harmony in the home.
If there is harmony in the home,
there will be order in the nation.
If there be order in the nation,
there will be peace in the world.

Kung Fu Tze

BUDDHA11.WP6 DISK:SCRAPS May 14, 1995

NOTES ON BUDDHISM

HUMAN INTERCONNECTEDNESS

In the gnostic gospel of St. Thomas, Jesus says, "Whenever there are those who hunger, I hunger, whenever there are those who thirst, I thirst, whenever there are those who suffer, I suffer." Muhammed says very much the same thing in the Koran, "When a member of Islam suffers, all Islam suffers". In the Tao Te Ching, "Regard a neighbor's gain as your gain and regard a neighbor's loss as your loss. These remarks speak to a deeper interconnectedness of all humankind than is contained in the notion of "brotherhood of man". When one reflects on this level of interconnectedness, does it not follow that Jesus and Muhammed would also say, "Whenever there are those who commit a crime, I also have committed that crime". While neither teacher explicitly points to active interconnectedness, both choosing to stop with our passive interconnectedness, it is difficult to accept one without also accepting the other.

Now in our times the Buddhist monk Thich Nhat Hanh affirms the extension of human interconnectedness to the active as well as the passive. In his book, *Love in Action*, Thay says:

> People everywhere saw the Los Angeles policemen beating Rodney King. When I first saw that on French TV, I felt that I was the one being beaten, and I suffered a lot. I think you must have felt the same. All of us were beaten at the same time. We were all victims of violence, anger, misunderstanding, and the lack of respect for our human dignity.
>
> But as I looked more deeply, I saw that the policemen beating Rodney King were no different from myself. They were doing it because our society is filled with hatred and violence. Everything is like a bomb ready to explode, and we are all a part of that bomb, we are all co-responsible. We are all the policemen and the victim.

It is only when we admit to both species of interconnectedness, that we shall find the strength for healing. It has been said that peace begins with forgiveness. It follows that our forgiveness must not only be given to others, but also extended to ourselves. Peace in relationships depends on the inner peace of those in the relationship. Our inner victim must forgive our inner abuser. And our inner abuser must not only forgive his victim, but also forgive himself..

Emerson said that the hours write upon the ages and the ages write upon the hours. What he said about time is also true of many other dimensions. Indeed, we all write on one another. No deed is done anywhere on earth that is not written on my own psychic structure, nor is any deed I do confined to my locality, it is also written upon every sentient being.

ON COMPLEXITY

Simple systems are characterized by:

- Predictability
- Few interactions and feedback loops
- Centralized decision making (or control)
- Decomposability (reductionism)
- Linearity (substitutions)
- High imbalance in system-context interaction
- There exists the possibility of being objective, ie. discounting the influence of the observer.

Complex systems are characterized by:

- Unpredictability
- High level of interaction with the context (The number of components in the system is far less important than the degree on interaction of the components).
- Distributed decision making and control
- Non-decomposability
- Non-linearity
- Balance in system-context interactions
- Large role of the subjective

SURPRISE-GENERATING MECHANISMS

MECHANISM	SURPRISE EFFECT
Logical tangles	Paradoxical conclusions
Catastrophes	Discontinuity from smoothness
Chaos	Deterministic randomness
Uncomputability	Output transcends rules
Irreducibility	Behavior cannot be decomposed
Emergence	Self-organized patterns

from Complexification by John L. Casti

COMPLEX1.WPG 95/05/23

ON FACETISM

The rules of the game: learn everything, read everything, inquire into everything...When two texts, or two assertions, or perhaps two ideas, are in contradiction, be ready to reconcile them rather than cancel one by the other ; regard them as two different facets, or two successive stages, of the same reality, a reality convincingly human just because it is complex.

(From Marguerite Yourcenar's novel "Memoirs of Hadrian")
First woman to ever be elected to membership in the Academie Francaise (1980)

PACETI.WPG 95/05/03

BUDDHA12.WP6 June 5, 1995

More Notes on Buddhism
EPISTEMOLOGY AND PRACTICE

For a Westerner, the first result from the study of Buddhism is that there are alternatives to the way we customarily look at the world. In the West we have focused on objectivity in the structuring of our worldviews. This does not take into account that so-called objectivity is but a particular subjective stance. The availability of alternatives arises from the experience of different subjective stances. In Buddhism a different subjective stance is acquired through the "Practice".

The Practice, or rather any practice, is in effect an epistemology in the sense that the result of the practice leads to a particular ontology and worldview. This has been noted in the West by saying that living a practice, such as a religious practice, is a step beyond a mere philosophical epistemology. The difference between a philosophical epistemology and a practice is the first results in knowledge, the second in understanding.

Since in creating a different subjective state of mind, as with a practice, we arrive at a new ontology, it is fair to say that an epistemology is a subjective state of mind. And since there is an isomorphism between epistemologies and ontologies, what is called reality is a product of a subjective state of mind. The traditional label for this situation in Buddhism is to call it illusion . I feel it is more to the point to recognize the non-essentiallity of any world view, that reality is arbitrary rather than illusory.

Summarizing:

> An Epistemology is a method of enquiry resulting in knowledge, in an ontology, in a world view.
> A Practice is a meta-epistemology, a method of living resulting in both knowledge and understanding.
> Adherents of different epistemologies naturally disagree on their ontologies. All are neither right nor wrong, for there is no one right ontology. Each epistemology taps into a different facet of the Mysterium of the Universe. Let us recognize the many faceted nature of the World and not use the term illusion.

Buddhists customarily recognize two facets of the World, that they distinguish as appearance and is-ness. Other ways to think about such a dyad are: material and spiritual, Eddington's two tables, form and emptiness, actuality and potentiality. (What is the difference between a facet and a level?)

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

THE PRINCIPLE OF PLENITUDE

In 1936 Arthur O. Lovejoy, Professor of philosophy at Johns Hopkins University, was invited to deliver the William James lectures at Harvard University. These lectures were subsequently published in a book entitled "*The Great Chain of Being*". The central concerns developed in the lectures and the book were derived from Plato's thoughts concerning the World of Ideas and the World of Becoming. Plato considered two questions: Why is there any World of Becoming in addition to the eternal World of Ideas? and What principle determines the number of kinds of beings that make up the sensible and material world? Lovejoy points out that no one asks this sort of question today. In the last century T. H. Green noted that "...every form of the question why the world as a whole should be what it is .....is unanswerable. " But much has happened since 1936 and the structure of the Observable World is seen to derive in part at least from the critical values of certain fundamental physical constants.

Plato believed in the world as a **continuum**, there were no gaps. But beginning early in the 20th century it was discovered that what exists is limited to certain discrete eigenvalues. This was first recognized in the energy levels of atomic structure and later was extended and generalized to a **discretum** that manifests a universe of a fractal nature. Plato's continuum was completely filled, no gaps, no missing links. Every idea that existed in the world of eternal essences had a temporal counterpart, otherwise there could be no intelligibility between the two worlds. The 'fullness' of the realization of conceptual possibility in the world of actuality inferred an isomorphic relation between the two worlds. This idea of effecting a fullness in the world was called "The Principle of Plenitude" by Lovejoy. This principle not only required that " the range of conceivable diversity is exhaustively exemplified, but also that no genuine potentiality can remain unfilled. The extent and abundance of creation must be as great as the possibility of existence and commensurate with the productive capacity of an inexhaustible Source ", and "Further, the intellectual world was declared to be deficient without the sensible." These are all significant notions that have affected the course of western philosophy. Also implicit in Plato's thought is the importance of diversity for the proper functioning of the world.

PRNPLEN1.WPG
95/06/15
See #75 1991
#86 1991

What diversity is to the plenum, self replication and numerical abundance is to each element of the plenum. We thus arrive at two formulations of the Principle of Plenitude, one for eco-plenum and one for each component part.

> 1) The Principle of Plenitude states that all things possible in nature are actualized and that in the process of actualization new potentialities are created. Alternate formulations are "nature fills every niche", "can do implies will do". The actual ever increases to replace the potential. However not all that is actualized must persist. Much that is actualized may disappear through instability or incompatibility or through serving to effect further actualizations. The Principle of Plenitude seems to be responsible for form and variety to be continually increasing.

cf. Ozbekirans Law

> 2) The Principle of Plenitude also seems to govern the increase in size, number and capability of individuals and species. Each structure tends to impose its own organization on the cosmos. It is the drive to growth as well as governor of evolution. (Growth and evolution are two processes by which the potential becomes actual.) In growth for any species the principle takes on two aspects, the increase in number and the manipulation of the context (environment) to enhance itself and delimit and inhibit competitors. Thus the principle operating on the species level may run counter to its operation on the plenary level.

In summary, Plato's continuum has today become a discretum, the gaps are part of the structure not just missing links. Further, instead of a limitless inexhaustible world we live in a finite limited world. Instead of every possibility being realized only a portion are actualized. It appears that there is not infinite variety, but variety is limited and restricted. Plato's belief that the two worlds are defective without each other has been replaced with a mono-only-one-world exists. The present view is that the important dichotomy is species/ecology rather than potential/actual.

Both Plato + Moderns are right.

ONCE TO EVERY MAN AND NATION

Once to every man and nation
Comes the moment to decide
In the strife of truth with false-hood
For the good or evil side
Some great cause God's new Messiah
Off'ring each the bloom or blight
And the choice goes by forever
'Twixt that darkness and that light

Then to side with truth is noble
When we share her wretched crust
Ere her cause bring fame and profit
And 'tis prosprous to be just
Then it is the brave man chooses
While the coward stands aside
Till the multitude make virtue
Of the faith they had denied

By the light of burning martyrs
Jesus' bleeding feet I track
Toiling up new Calvaries ever
With the cross that turns not back
New occasions teach new duties
Time makes ancient good uncouth
They must upward still and onward
Who would keep abreast of truth

Though the cause of evil prosper
Yet 'tis truth alone is strong
Though her portion be the scaffold
And upon the throne be wrong
Yet that scaffold sways the future
And behind the dim unknown
Standeth God within the shadow
Keeping watch above his own.

James Russell Lowell, 1845

JRLOWELL

1193

Today, makes yesterday mean
Emily Dickinson

ONTOLOGY FROM TECHNOLOGY

The current revolution in the communications/computing industry through its essential technological parameters is making manifest some basic ontological properties of the world. Analog/digital, FDMA (Frequency Division Multiple Access), TDMA (Time Division), SDMA (Space Division), CDMA (Code Division), etc. all involve the dimensions by which we experience reality. This new technical parameterization affords an opportunity to explore, at least metaphorically, the ontological nature of the physical world.

For example, we observe the world to be fractally structured, with modules of energy-matter being separated by gaps, voids, and silences. From technological analogies, we may reason that gaps are the result of wave interference. Two conclusions may be drawn: 1) That the ultimate structure of the universe is wave-like. Underlying atoms, nucleons, quarks,.. are primary energy waves of multitudinous frequencies and wave lengths. and 2) In an infinite space all waves may coexist with noise like cancellations and reinforcements, but in a finite domain only integral waves may exist, all others cancel each other out. The presence of gaps between integral values therefore infers that the universe is finite. While this might be erroneous, if nature uses the same structures universally that we observe in our technologies, and employs economy in the number of forms, then the likelihood of such reasoning being correct is large.

Many of the technological parameters are paired, possessing various types of symmetries. Time and frequency are reciprocals, $T * f = 1$, but we experience time as continuous and frequencies as discrete. Time is in a continuum, it is like the real numbers, it is measured. Frequency is in a discretum, it is like the integers, it is counted. Ourselves, we experience temporally the waves of frequency less than one hertz, and experience as frequency the waves of frequency greater than one hertz. But the world is experiencable at many different frequencies. We perceive different realities when our theta and alpha waves change frequency. The differences greatly exceed changes of the order of viewing the landscape through different colored lenses. But the world can also be viewed in multiplexed time. Events are imbedded in a discretum--Camelot, the once and future king. But multiplexed events lack the reality for us that the continuous conveys.

We select our physical reality with our senses. The notions of time and frequency come to us primarily aurally. (Although there is also an inertial sensing of time and frequency in every body cell) Our notions of space come to us primarily visually, and since we are dominately visual and aural creatures, space and time have become the important infrastructures in our

organization of experience. (Other animals may have infra-structures in smell and taste as elaborate as our space and time, or even in some sense area we hardly possess. I am always impressed by the way flocks of birds and schools of fish can maneuver in coordination).

What about space? Again we encounter gaps and voids. There seems to be the need to measure both extension and separation. Are these measurable with the same meter stick? The reciprocal of distance is sometimes expressed as curvature. D * K = 1. This is not so intuitive for us as the idea of wavelength.

Fundamentally we encounter matter and gaps, sound and silence, stuff and no-stuff. Within the stuff is continuity, between the stuffs is discreteness. Thus there is both an analog and a digital aspect to the world, leading to its fractal like structure. Certain kinds of gaps lead to levels and hierarchies, others to cells and cellular aggregates. Then there is the important wave-particle dyad. Waves are everywhere and everywhen, particles are here and now. The problem for the ontologist is to organize all of the dyads and symmetries.

Dyads

continuous and discrete, (analog and digital)
wave and particle, (global and local)
time and frequency
extension and separation
~~Space~~ distance and curvature
channeled and open (4π) (wired and wireless)
signal and noise
mobile and static
node and link

GODS, GODDESSES AND MORTALS

The pattern in Greek mythology is that heroes emerge from the union of gods with mortal women and monsters emerge from the union of goddesses with mortal men. Is this in some way connected to Plotinus' notions of ascenders and descenders? Is there some gender based archetypal configuration having to do with ascending and descending? A woman who mates with a "higher" man will produce happy offspring, while mating with a"lower" will result in a dysfunctional family.

Woman does seem to be the natural and successful ascender. She always takes care to succor those below, which is the primary injunction for a successful ascent. Men more frequently forget where they have been and after moving up cut off those whom they have passed. On the other hand the feminine descends precariously. If she descends she tends to become too involved in the lower level and consequently looses her connection with her higher source. Men are better descenders somehow able to keep their roots in the higher. But in these times there are so few "higher" men that women must either stay single or settle for the inevitable dysfunctional results.

The myth of Pygmalion and Galatea illustrates the descent of the masculine. The man raises up the lower and falls in love with his creation. Galatea then becomes an ascender and either marries Pygmalion or goes to a higher place without him. What happens in the case of a female Pygmalion and male 'Galateus'? The descending woman in time develops contempt for her creation and both she and her Galateus lose touch with the higher. In Mary Shelly's novel Frankenstein, (although the Pygmalion in the story was a male, the reality is a woman's expression of the archetype), her creation is a monster who destroys both himself and his creator.

Another pattern from Greek mythology is the double fathering of the hero. The mother is fertilized by both a god and a mortal. Hercules was fathered by both Zeus and Amphitryon with Amphitryon's wife Alcmene. Theseus was fathered by both Poseidon and Aegeus with Aethra. One notes a parallel with the Gospel stories of the birth of Jesus with both the Holy Spirit and Joseph being involved with Mary in the Incarnation. Apparently something besides male sperm is required to produce a higher offspring.

GODMURTL.WPG 95/06/29

LIBFREE1.WP6 July 4, 1995

LIBERTY AND FREEDOM

Liberty is getting others off your back: the Feds, the IRS, your parents, mother-in-law, creditors, ...

Freedom is getting yourself off your back: your habits, desires, prejudices, aversions, blind spots, ...

Liberty is taking responsibility for the establishment and protection of the rights of others (all sentient beings);

Freedom is taking on personal responsibility as a citizen and a human being.

Liberty is to have a vision

Freedom is to have a conscience, a clear one.

Liberty is to have higher identifications.

Freedom is to serve the highest identification.

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

MORE ON EPISTEMOLOGY AND ONTOLOGY

It is surmised that the appearance and properties that the world manifests depend on the choice of epistemology used for exploring the world, a different ontology being manifested by each epistemology. Two examples from physics are to be noted.

In the theory of relativity the separation between two events in spacetime, usually called the interval, depends on the inertial frame of reference that is chosen, different frames leading to different intervals. Here the selection of an inertial frame corresponds to the choice of an epistemology.

A second example, this from quantum physics, notes that the manifestation of light as a particle or as a wave depends on the selection of the experiment to be performed, one type of experiment causing light to manifest as particle, another type as wave. Here the selection of the experiment corresponds to the choice of an epistemology.

One important inference from all of this is that the world is much richer than can be exhibited by any single epistemology, (which smacks of Gödel's results in mathematics). If we adopt Kant's dyad of phenomena (that which is manifested or can be experienced) and noumena (that which is hidden and beyond being experiencable) then we may say that

Phenomena/Noumena = f(epistemology)

that is, what is manifested and not manifested is a function of the epistemology. For this reason some ~~term~~ label the manifestation of any particular epistemology an **illusion.**

A second inference from this is that the World itself, the multifaceted World each of whose facets we call a world, is unknowable. Only the World's response to particular epistemologies is knowable. To construct the World from the set of these responses is impossible until we know the totality of facets. This is analogous to the situation in relativity where the geometry of spacetime is unknowable, there only being inferences from clocks and rods.

Thus all worldviews (or ontologies) are but interpretations or inferences from our epistemologies (or organizing frameworks).

The human body is an organizing system for experience - Ed
∴ it is an epistemology.

The practice [any practice] is an epistemology
(or meta-epistemology)

Rituals are epistemologies

People is an epistemology

BODSATVA.WP6 August 16, 1995

THE BODHISATTVA

The essential difference between Mahayana and Theravada Buddhism is in the doctrine of the bodhisattva. Mahayana teachers claim that the ideal of the Theravadin--complete loss of personality as perfected beings in Nirvana--was fundamentally selfish and trivial. The truly perfected being should devote all his powers to saving suffering mortals, who in Mahayana, becomes a divine savior, and whose example the believer is urged to follow. It must be remembered that all good Buddhists, from the Mahayana point of view, are bodhisattvas in the making, and the many descriptions of bodhisattvas in Mahayana texts provide ideals for the guidance of monk and layman alike. The following is from *Astasahasrika Prajnaparamita,* 22.403-3

> The bodhisattva is endowed with wisdom of a kind whereby he looks on all beings as though victims going to the slaughter. And immense compassion grips him. His divine eye sees innumerable beings, and he is filled with great distress at what he sees, for many bear the burden of past deeds which will be punished in purgatory, others will have unfortunate rebirths which will divide them from the Buddha and his teachings, others must soon be slain, others are caught in the net of false doctrine, others cannot find the path [of salvation], while others have gained a favorable rebirth only to lose it again.
> So he pours out his love and compassion upon all those beings, and attends to them, thinking, "I shall become the savior of all beings, and set them free from their sufferings."

In many passages of the Mahayana scriptures there is found what purports to be the solemn resolve made by a bodhisattva at the beginning of his career. The following fine passage will appear particularly striking to Western readers, for in it the bodhisattva not only resolves to pity and help all mortal beings, but also to share their most intense suffering. Christians and Jews cannot fail to note resemblances to the concept of the suffering savior in Christianity and to the "Servant Passages" of Isaiah (53:3-12). It is by no means impossible that there was some Christian influence on Mahayana Buddhism, for Christian missionaries were active in Persia very early, and it became a center from which Nestorian Christianity was diffused throughout Asia. From the middle of the third century, Persian influence in Afghanistan and Northwestern India, which

had already been felt, was intensified with the rise of the Sasanian Empire; and it was in these regions that Mahayana Buddhism developed and flourished. Thus Christian influence cannot be ruled out. But it is equally possible that the similarities between the concepts of the suffering savior in Buddhism and Christianity are due to the fact that compassionate minds everywhere tend to think alike.

The work from which the following passage is taken, Shantideva's Compendium of Doctrine, dates from the seventh century. It is extremely valuable because it consists of lengthy quotations from earlier Buddhist literature with brief comments by the compiler, and many of the passages quoted are from works that no longer survive in their original form. The following passages are quoted from two such works, the *Instructions of Aksayamati (Aksayamati Nirdesa)* and the Sutra of *Vajradhvaja* .[From *Siksasamuccaya* pp. 278-83)

> The bodhisattva is lonely, with no companion, and he puts on the armor of supreme wisdom. He acts himself, and leaves nothing to others, working with a will steeled with courage and strength. He is strong in his own strength and he resolves thus: "Whatever all beings should obtain, I will help them to obtain."
>
> The virtue of generosity is not my helper-I am the helper of generosity. Nor do the virtues of morality, patience, courage, meditation, and wisdom help me, it is I who help them. The perfections of the bodhisattva do not support me, it is I who support them. I alone, standing in this round and adamantine world, must subdue Mara, with all his hosts and chariots and develop supreme enlightenment with the wisdom of instantaneous insight!"
>
> Just as the rising sun, the child of the gods, is not stopped by all the dust rising from the four continents of the earth or by wreaths of smoke or by rugged mountains, so the Bodhisattva, the Great Being, is not deterred from bringing to fruition the root of good, whether by the malice of others, or by their sin or heresy, or by their agitation of mind. He will not lay down his arms of enlightenment because of the corrupt generations of men, nor does he waver in his resolution to save the world because of their wretched quarrels. He does not lose heart on account of their faults.
>
> "All creatures are in pain," he resolves, "all suffer from bad and hindering karma so that they cannot see the Buddhas or hear the Law of Righteousness or know the Order. All that mass of pain and evil karma I take in my own body I take upon myself the burden of sorrow; I resolve to do so; I endure it all. I do not turn back or run away, I do not tremble, I am not afraid nor do I despair.

Assuredly I must bear the burdens of all beings for I have resolved to save them all, I must set them all free, I must save the whole world from the forest of birth, old age, disease, and rebirth, from misfortune and sin, from the round of birth and death, from the toils of heresy. For all beings are caught in the net of craving, encompassed by ignorance, held by the desire for existence; they are doomed to destruction, shut in a cage of pain; they are ignorant, untrustworthy, full of doubts, always at loggerheads one with another, always prone to see evil; they cannot find a refuge in the ocean of existence; they are all on the edge of the gulf of destruction.

"I work to establish the kingdom of perfect wisdom for all beings. I care not at all for my own deliverance. I must save all beings from the torrent of rebirth with the raft of my omniscient mind. I must pull them back from the great precipice. I must free them from all misfortune, ferry them over the stream of rebirth.

"For I have taken upon myself, by my own will, the whole of the pain of all things living. Thus I dare try every abode of pain, in every part of the universe, for I must not defraud the world of the root of good, I resolve to dwell in each state of misfortune through countless ages for the salvation of all beings for it is better that I alone suffer than that all beings sink to the worlds of misfortune. There I shall give myself into bondage, to redeem all the world from the forest of purgatory, from rebirth as beasts, from the realm of death. I shall bear all grief and pain in my own body, for the good of all things living. I venture to stand surety for all beings, speaking the truth, truthworthy, not breaking my word. I shall not forsake them I must so bring to fruition the root of goodness that all beings find the utmost joy, unheard of joy, the joy of omniscience. I must be their charioteer, I must be their leader, I must be their torchbearer., I must be their guide to safety I must not wait for the help of another, nor must I lose my resolution and leave my tasks to another. I must not turn back in my efforts to save all beings not cease to use my merit for the destruction of all pain. And I must not be satisfied with small successes."

Joy in All Things

Joy is one of the cardinal virtues of Buddhism, and the Bodhisattva, who is the example all Mahayana Buddhists are expected to follow as far as their powers allow, has so trained his mind that even in the most painful and unhappy situations it is still full of calm inner joy. The following passage is from the *Compendium of Doc*trine; it is the work of the author, Shantideva. From *Siksasamuccaya* p. 181 ff

Indeed nothing is difficult after practice. Simple folk, such as porters, fishermen, and plowmen, for instance, are not overcome by depression, for their minds are marked by the scars of the many pains with which they earn their humble livings, and which they have learned to bear. How much the more should one be cheerful in a task of which the purpose is to reach the incomparable state where all the joys of all beings, all the joys of the bodhisattvas are to be found. Consciousness of sorrow and joy comes by habit; so, if whenever sorrow arises we make a habit of associating with it a feeling of joy, consciousness of joy will indeed arise. The fruit of this is a contemplative spirit full of joy in all things. So the bodhisattva is happy even when subjected to the tortures of hell. When he is being beaten with canes or whips, when he is thrown into prison, he still feels happy. For this was the resolve of the Great Being, the Bodhisattva: "May those who feed me win the joy of tranquility and peace, with those who protect me, honor me, respect me, and revere me. And those who revile me, afflict me, beat me, cut me in pieces with their swords, or take my life--may they all obtain the joy of complete enlightenment, may they be awakened to perfect and sublime enlightenment." With such thoughts and actions and resolves he cultivates and develops the consciousness of joy in his relations with all beings, and so he acquires a contemplative spirit filled with joy in all things and becomes imperturbable-not to be shaken by all the deeds of Mara.

The foregoing paragraphs were taken from Sources of Indian Tradition, A.T. Embree (Ed) pp 160-163, 168-169

The early centuries after Christ were very prosperous ones for Buddhism. In the Northwest it seems to have been the major religion, for hardly any specifically Hindu remains of this period are to be found there. Elsewhere in India the influence of Buddhism can be measured by the numerous remains of stupas and monasteries, which are among the finest and most beautiful relics of ancient Indian civilization. From India, Buddhism spread not only to Central Asia and China but also to many parts of Southeast Asia. It is certain that it had some effect on the religious thought of the Middle East, and Buddhist influence has been traced in Neo-Platonism, Gnosticism, and Manichaeism. Many authorities believe that early Christianity was influenced, directly or indirectly, by Buddhist ideas. In the Eastern churches the story of Buddha's abandonment of his home for a life of asceticism, "the Great Going-forth," has been adapted as a Christian legend, the ' name of its protagonist, St. Josaphat, being evidently a corruption of the word *bodhisattva.*

bodhi3.wpd

- We live in a culture that would call a Bodhisattva a wimp.
- Not even a Bodhisattva can fill all expectations of a projection.
  e.g. Jesus disappointed Judas

A NEW PANTHEON

Joseph Campbell has worried that our times have outstripped much of ancient wisdom and that we need new myths to explain the world, order society, and give us meaning. And more than new myths we also require new gods. We require a consciousness and wisdom beyond that supplied by the metaphoric denizens of a past Olympus.

In the beginning Chaos was split in two by a nameless god giving rise to Heaven ruled by Uranus and Earth ruled by Gaea. The order of Titans followed, established by the patricide of Uranus by his son Kronus. Next came the order of Olympians established by the patricide of Kronus by his son Zeus. The archetype of patricide of the old order by the new became essential since the old order preserved its dominance by ever eating its offspring.

Believing Campbell, the times have become ripe for another pantheonic patricide. Who are the new gods and what functions do they represent? But first it must be noted that sometimes the old gods join the new. The Titans, Prometheus and Epimetheus, foresight and hindsight, abandoned their brother Kronus and joined with Zeus, And later Prometheus defied Zeus by bringing fire to mankind. So Prometheus seems to be a god always willing to join the new order.

In all probability both Apollo and Dionysus will also still be important in the new order. We need both the structure and order of Apollo and the openness and spontaneity of Dionysus. But we need more than ever the wisdom to know when Apollo and when Dionysus.

A Titan who survived the last patricide, not by joining Zeus, but by remaining hidden, has now come forth: Metametheus. His/her (Metametheus is genderless) wisdom of discrimination has long been needed to show how to replace the adversarial disjunctive configuration of Apollo vs. Dionysus with the cooperative conjunctive configuration of now Apollo, now Dionysus... Metametheus invokes the memory of his brother Kronus: The solution is to be found in a temporal pattern. Metametheus is the god of synthesizing, showing how to replace "or" with "and", and how to employ time when necessary.

Another Titan who hid with Metametheus was Orthometheus. This god (also genderless) was the god of knowing how to cut through the crap and come to the essence. Too long in seclusion.

Are there others also emerging, not only Titans and Olympians, but perhaps hitherto unrecognized members of the fifth generation?

Newpanth.wp6 95/08/22

Metamethews can stand back from an issue and take in its contexts — then synthesize

1990
See ITERREP, P51 #14
Jun 10, 1990

August 31, 1995 see 1997#21 1995#05

SOME SCRAPS ON RECURSION

- Recursion has to do with wholes and parts.
- The universe set aside part of itself to reference itself including the part set aside. This leads to an infinite regression of successive mappings.
- OM MANI PADME HUM What does HUM mean?
  It means OM MANI PADME HUM
- Gödel's Theorems show that there is always more than can be constructed from any base. An inverse of recursion.?
- Sense data alone do not provide what is needed for their own interpretation. --Hume This is related to Gödel's results. (Morrison p.18)
- In a hologram the whole is mapped onto every part. But in recursion it is required that the whole be mapped onto only one part.
- Recursion differs from Repetition and Iteration in that a part can iteratedly stand for the whole.
- Recursion along with Recognition and the Ontological Spectrum are keys to transcendent understanding.
- The boundary of the boundary is zero. This is a rapidly terminating recursion with a null attractor.
- The result of white noise modulating white noise is a gaussian. and recursion sharpens the gaussian to a Dirac function attractor. OR Central Limit Theorem
- There are as many points between 0 and 1 as there are between 1 and ∞, for each number can be isomorphically mapped onto its reciprocal. But here there is a duality unless a different mapping is used for < 1.

- CONTINUED FRACTIONS

So whether it is HUM or HUME (the two species of recursion) there is a part-whole homeomorphism (many to one)

Recursion Non-Dyadic

Recursion, the process by which a function or procedure calls itself in order to streamline the performance of special kinds of repetitive tasks. —Defn from TurboBasic p15

~~REF1.WP6~~
RECURS1.WP6

I at least a species of recursion
HVM and HUME

HVM: A PART STANDING FOR THE WHOLE
and
HUME: AN APPARENT WHOLE IS INCOMPLETE
~~Godel~~
A PART - esp IN referencing part
IS MISSING

HUME is a special case of Gödel

TOP DOWN - BOTTOM UP

Homeopathy

EMERGENCE (From 97#21
is the result of an apophatic/synthetic dialectic
A portion must be destroyed so that a portion
may participate in the emergence

A TRUE-FALSE TEST September 1, 1995

1. Is the following sentence true or false?

Their are two errors in this sentense.

2. Is the following sentence true or false?

Their are three errors in this sentense.

3. Is the following sentence true or false?

Their are four errors in this sentense.

The first sentence is clearly true. The third sentence is clearly false.

It is the second sentence that is ambiguous. It may be interpreted in two ways. There are two spelling errors in sentence 2. The sentence says that there are three errors therefore the sentence is false. However, saying that there are three errors when there are only two is itself an error, therefore there are three errors and the sentence is true.

If errors are restricted to content, such as spelling, and wrong word then sentence 2 is false. If meaning is also included, and two levels are considered, the level of content and the level of meaning, then sentence 2 becomes true.

We have here an example of a statement that is both true and false, depending on how it is viewed. Such propositions arise when levels or classes are involved. From this it follows that Aristotle's logic which is based on the Law of the Excluded Middle, viz, every proposition is either true or false, is limited to one level discussions. Aristotle's logic is a "horizontal logic" and when the vertical is present a different logic is required.

In a logic which can include the vertical, i.e. multiple levels, an operator is required that corresponds to the horizontal operator, NOT. Maybe this is the operator NO, or possibly the Zen MU, if taken as an operator.

TRUEFALS.WP6

THE ONTOLOGICAL SPECTRUM

A useful metaphor for the ontological spectrum is the chemist's pH scala for acidity and alkalinity. In this scala water is taken as being acidically neutral and is given the value 7. Values below 7, e.g. 5.2 (boric acid), 3.8 (carbonic acid), 1.2 (sulfuric acid) represent acidity, the smaller the number the higher the acidity. Values above 7, e.g. 8.4 (sodium bicarbonate), 9.2 (borax), 13.0 (sodium hydroxide) represent bases, the larger the number the higher the alkalinity.

We can metaphorically think of realities as being distributed along a scala centered on the 'neutral' order of nature (corresponding to water) with positions on the scala less than say 7 representing higher order realities which contain the natural order, e.g. eternity, heaven and assorted spiritual and mental levels, while positions on the scala greater than 7 represent artificial sub-realities, contained with in the natural order, e.g. the social order, movies, games, and assorted virtual realities. The purpose of this metaphor is not to assign any numbers, but to create an alternate schemata for thinking about realities. We accordingly end up with a sort of Russian doll matroshka model, with a set of nested realities replacing the usual model of a single "real, out there, objective, upper case R reality".

The concept of a multi-level set of realities appears to be related to a set of altered states of consciousness. Indeed quite possibly states of consciousness may be mappable isomorphically onto realities. This leads to the idea that a state of consciousness is a bridge between an epistemology and an ontology. Every epistemology creates a state of consciousness which in turn evokes a reality. For this to be so the traditional idea of ~~what~~ an epistemology is must be generalized.

We usually think of an epistemology as a way of knowing, a process for acquiring knowledge, a mode of inquiry. Traditionally our various epistemologies all operate within the common state of waking consciousness. Generalizations must take into account that within each state of consciousness there may be one or more epistemologies. This redefinition makes various practices, such as meditation, into epistemologies. The dream state becomes an epistemology. Drug influenced states become epistemologies. Rituals are epistemologies. The living human organism is itself an epistemology--a way of organizing experience.

Meta

AGERATE.WP6 September 8, 1995 also 1994 #54

HOW TO BE OLDER THAN YOUR MOTHER

You cannot be older than your mother, common sense apodictically asserts. But we are finding stars that are older than mother universe herself. Recent more refined measurements of the rate of expansion of the universe lead to an age of from nine to twelve billion years, while old stars in certain globular clusters require something like 16 billion years to explain their life span. The difference between the genealogical case and the cosmogonic case is that ages of mother and offspring are measured by the same clock while the ages of stars and the universe are measured by different clocks. The star-universe paradox may be easily dissolved if we can show the clocks run at different rates.

Games with time, clocks, and clock rates have been popular since Einstein brought out his special theory of relativity in 1905. There is, for example, the famous twin paradox of one twin staying on earth, the other twin taking a high speed space voyage of a few years duration and returning to earth to find his twin had died of old age decades ago. Relative clock rates in special relativity depend on relative velocities. So herein might lie a contribution to the star-universe paradox. But there are other clock games. For example, there are these fascinating objects called **black holes**. According to Einstein's general theory of relativity clocks behave differently in the presence of matter than in empty space. And in the presence of highly condensed matter such as occurs in a black hole the clock rate almost drops to zero. Herein might lie another contribution to the star-universe age paradox.

Proper Time?

Relativity theory tells us it is wrong to assume that the clock governing the rates of physical phenomena runs everywhere at the same rate. Furthermore the rate may be changing, as for example with a change of local or global density. Considering the variations in matter density throughout space and the change of density occurring in the general expansion itself, it is indeed probable that our present numbers assigned to ages of objects ranging from stars to the observable universe may require some adjustments. The problem of age shifts from determinations based on the hypothesis of a universal "metaclock" governing the entire universe and its contents to reconciling the rates of a set of diverse clocks operating at local rates throughout the universe. The concept of proper time—the time of the meta-clock is like Newton's absolute space & time.

Cosmology is based on what is called "proper" time

like Newton's absolute space

Density time: $\tau \propto \rho^{-1/2}$ i.e. $\tau \uparrow$ as $\rho \downarrow$

General Relativity $t \uparrow$ as $\rho \uparrow$

These operate oppositely

∃? a Dirac like relation between t and τ?

τ can be thought of as like time, age, or metronome rate

01.LPC for **THE LAST PISCEAN** September 12, 1995

ON NON-CONFORMITY

THE NON-CONFORMIST MANIFESTO

Those Americans who made a sacrament of pursuing non-conformity were Marxists in the thirties but had become Buddhists by the eighties. The Life of non-conformity was to be lived like a flat spinning stone skimming over the surface of a pond, touching the world only long enough to be propelled upward again in the flight to freedom.

Hippies were strict conformists

But there is a question whether the non-conforminst is pursuing freedom or liberty. Liberty is getting others off your back, while freedom is getting yourself off your back. Perhaps the pursuit is for both. There are those like Yevtushenko[1] who were free even where there was no liberty, and there are millions of Americans who are not free in the land of liberty. De Toqueville noted this a century and half ago. (1831) Americans, he observed, would suffer no tyranny from government but readily succumbed to the self created tyranny of conformity. This is why here the distinction between liberty and freedom has long been obscured.

But conformity itself is currently being challenged from another source. The issue, usually phrased in terms of the rights of immigrants, is whether to continue to subscribe to the traditional dominant heritage or encourage a diversity built of minority heritages. If the pluralistic view prevails then the tyranny of conformity will come to an end, or at least we shall have the paradox of 'choice of conformity'. All of which makes the task of the non-conformist more difficult, for eclecticism among conformities does not constitute non-conformity. In the future Marxism, Buddhism or any other non-domestic ism will no longer be a refuge for the non-conformist. To non-conform in the twenty first century one must create original alternatives, blaze entirely new trails, which will require high levels of both imagination and courage.

a choice among conformities

It is becoming increasingly difficult to be "way-out".

Yevtushenko - Foot Note

ERMA BOMBECK PD 09/14/93

All women seek bridge to romance

The boutique whose window sign boasted, "50 PERCENT OFF EVERYTHING!" was strangely silent as I walked in the front door. At a small desk, the saleswoman was crying softly, dabbing her eyes with a wadded clump of tissue.

"Business that bad?" I asked. She jumped in surprise. "No," she said, pushing aside a small volume. "It's the book," she sniffed, blowing her nose. "The Bridges of Madison County" by Robert James Waller had claimed another soul.

I cannot tell you what this romantic volume of love between a 45-year-old married mother of three and a wandering 52-year-old photographer for National Geographic has done for the women of America.

All over the country, housewives are fantasizing about their husbands taking the kids to a fair and leaving them alone for four days. They're hiding bottles of wine behind the bleach in the utility room

All over the country, housewives are fantasizing about their husbands taking the kids to a fair and leaving them alone for four days.

just in case. The other day, an exterminator knocked on my door asking for directions and I wondered, "Is he the one?"

The reality is, women are hungry for romance. Some of those who saw "Sleepless in Seattle" thought the producers invented it. They didn't. There was a time when people in a relationship took a moment to exchange names, drink coffee together, talk to each other about life and genuinely like each other before slipping between the sheets.

I gave the book to my husband to read in the hopes it would point out how sexy a gentle, sensitive man can be. "Well, what do you think?" I asked as he finished the book.

"I got a lot out of it."

"Like?"

"He used a 105-mm lens set at f/8 to get the bridge to turn a warm red. I didn't know a one-second exposure would hold at f/8 on the light meter."

"You're joking!" I said. "Do you mean to say that's all you got out of that beautiful love story?"

"What love story?"

"You weren't moved that a woman would meet a stranger for four days and those moments would remain with her until the day she died?"

"Hey, look, the guy had a few beers, a vegetable stir-fry and went to bed with her. You want me to believe she kept that a secret from her husband all those years?"

"You have no romance," I said. "By the way, I just subscribed to National Geographic. No reason. And there's nothing I want to talk about — yet."

ANTHROPOLOGY 101

Two men and a woman are shipwrecked on a desert island

- **If they are Spanish**

The men fight a duel and one is killed.

- **If they are Italian**

The woman selects one of the men and gives poison to the other.

- **If they are Japanese**

The woman feels she is the source of a problem and commits hari kari.

- **If they are French**

No problem.

- **If they are English**

Nothing ever happens, the parties have not been properly introduced.

- **If they are American**

The men put together a TV and dish from the wrecked ship and watch football. The woman looks at the horizon.

Two women and a man are shipwrecked on a desert island

- **If they are Spanish**

One of the women becomes a nun.

- **If they are Italian**

Both of the women become nuns.

- **If they are Japanese**

The man becomes shogun, the women wait on him.

- **If they are French**

The man dies of exhaustion.

- **If they are English**

Nothing ever happens, the parties have not been properly introduced.

- **If they are American**

The women form a feminist movement and force the man to stay in the water.

LANGUAGES 101

A king of France, reportedly Louis XV, is supposed to have once said:

Latine loqui ad clericos
(I speak Latin to the clergy)

Je parle français avec mes ministres
(I speak French with my ministers)

Parlo Italiano a mia amanta
(I speak Italian with my mistress)

Hablo de español ma quisine*
(I speak Spanish with my cousins)

I speak English to the shop keepers
(I speak English to the shop keepers)

Ich spreche auf Deutsch zu meinem Pferd
(I speak German to my horse.)

Я говарю по русски с опричнином*
(I speak Russian with the secret police)

*These two are apocryphal.

An Englishman once exuberated on the beauty of butterflies and said that butterfly is one of the most beautiful words in English.
The Frenchman added, And papillon is certainly a most beautiful word in our language.
The Spaniard replied, and mariposa is so beautiful in Spanish.
The German asked, and what is wrong with schmetterling?

Latin papilio Russian бабочка

Bill,

As part of CP's newly announced continuing education program, the following are now being offered to all employees. The company regrets that your untimely departure prohibits your participating (you get screwed even after you're left!). I bet you won't find such an offer at your new shop. Take care. Tom

PROFESSIONAL GROWTH COURSES

1100	Creative Suffering	EC-6	1000 Other Uses For Vacuum Cleaners
1101	Overcoming Peace of Mind	EC-7	How to Convert a Wheelchair into a Dune Buggy
1102	You and Your Birthmark	H202	Creative Tooth Decay
1103	Guilt Without Sex	H204	Eroticism and Acne
1104	The Primal Shrug	H205	The Joys of Hypochondria
1105	Ego Gratification Through Violence	H208	Suicide and Your Health
1106	Holding Your Child's Behavior Through Guilt and Fear	H220	Biofeedback, and How to Stop It
1107	Dealing with Post-Realization Depression	H302	Skate Yourself to Regularity
1108	Whine Your Way to Alienation	H406	Understanding Nudity
1109	How to Overcome Self-Doubt Through Pretense and Ostentation	H408	Tap dance Your Way to Social Ridicule
1300-1	"I Made $300 in Real Estate"	H404	Optional Body Functions
1300-2	Money Can Make You Rich	C101	Self-Actualization Through Macrame
1300-3	Packaging & Selling Your Child	C600	How To Draw Genitalia
1300-4	Career Opportunities in El Salvador	C102	Needlecraft for Junkies
1300-5	How to Profit From Your Own Body	C105	Cuticle Crafts
1300-6	The Underachievers Guide to Very Small Business Opportunities	C110	Gifts for the Senile
1300-7	Tax Shelters for the Indigent	C606	Bonsai Your Pet
1300-8	Looter's Guide to America's Cities	E405	Cultivating Viruses in your Refrigerator
1300-9	How You Can Convert Your Room into a Garage	E407	Sinus Drainage at Home
1300-10	Burglar-proof Your Home — With Concrete	E408	Basic Kitchen Taxidermy
		E410	The Repair and Maintenance of Your Virginity

PROFESSIONAL GROWTH ENROLLMENT FORM

NAME JOB TITLE EDUCATION 101

ADDRESS PHONE NUMBER EXTENSION

general1.wp6 September 20, 1995

ON GENERALIZATION

When I was a graduate student at CalTech back in the 40's there was an important second order differential equation that no one had been able to solve over the past few years. A Chinese graduate student named Lin became interested in the equation. About two weeks later he astounded the faculty and everyone else by presenting the solution. I do not recall the details but the important aspect of the story is how he solved the equation. Lin took on a more difficult problem. He imbedded the second order equation in a generalized equation of the third order. He found a class of solutions for the third order equation then was able to select which member of the class would work satisfactorily for the original second order equation. Evidently what was not visible in the direct approaches to a solution of the second order equation became visible when the problem was viewed in a more general manner.

E.T. Bell, professor of mathematics and then head of the department, remarked that only someone brought up in a non-western background could have come up with that approach. Complicating the problem and thus perceiving more possibilities. Climbing past the specific obstacle then looking back down from above. Ordinarily we have only the viewpoints from below. Viewing from above, a totally different vantage point, discloses paths invisible from below.

Mathematicians have always tried to make their results as general as possible. Now, thanks to Lin, we have an additional practical application for generalizations.

Lin later won a Nobel prize

PERQUEST.WP6 September 20, 1995

THE PERENNIAL QUESTIONS See also 1995-#12

Basically the perennial questions have to do with meaning and purpose:

Who are we?
Why are we here?

We feel we can move toward answers to these questions by asking

Where did we come from?
What is our destiny?

The perennial questions and their derivative questions arise from a partial and limited view of the structures in which we find ourselves imbedded. including our physical bodies.

However, only a few are concerned with these questions. Only when one reaches a higher level of consciousness, or a level of identification with some encompassing module such as humanity or all living systems, do these questions arise. They are not important to the minds of those struggling for a living, competing on personal, tribal (read corporate), national, racial, religious, species, or any other level. The problem of meaning arises over finding a place and function in the order in which your identity is imbedded. If your identity is with ego, then your meaning is probably to be found in your function and position in your family and tribe. If your identity is with family, then meaning is found in the place and function of your family (and self) in the community and workplace. If your identity is with your corporation, meaning is with the status and vitality of your corporation in the context of the corporate world. If your identity is with your nation, then the status of your homeland in the global order is an essential ingredient to your meaning.

Thus, the perennial questions arise with those whose identity is with the human race, or with the phenomenon of life itself. What is the structure in which humanity (or life) is imbedded and what is the function of humanity (or life) in that structure?

Since meaning involves the nature of structure, we are immediately into the domain of ontology. What structures and systems exist, how are these related, and what kinds of existence may there be.

What we may call the perennial answers have come to us from philosophy, religion, and most recently from science. Most of the perennial answers have to do with derivative questions. For example the structure which astronomers call the cosmic universe is a structure in which one aspect of human experience appears to be imbedded. So the origin and destiny of this universe is germane to the primary perennial questions of who are we and why are we here.

As an example of an approach to a perennial answer, we may consider an opening statement by H.P. Stapp in the preface of his book, **Mind, Matter, and Quantum Mechanics.**

> "Nature appears to be composed of two completely different kinds of things: rocklike things and idealike things,--enduring rock and fleeting thought."

really consciousness and matter

Stapp finds the world basically dyadic. There are two kinds of thing (and perhaps two kinds of existence). If we conclude that the world is dyadic, must we not also conclude that the experiencers of that world must be dyadic. So it follows from Stapp's premise that a human is both rock like and idea like. This dyad is usually viewed as the mind-body problem.

For many a dyad is uncomfortable and it must be reduced to a monad. Ideas are the result of firing of neurons--for a materialistic monad, or rocks are but perceptions--for a ideational monad. This brings us to a special caveat for Westerners. They must transcend their compulsive monadism. Let the world be dyadic or beyond. Western religion, science and ~~even~~ especially politics is driven to have everything one.* Let us be free to say this may not be so. If there are 2 or n kinds of experience, let us allow 2 or n kinds of existence.

Here it might be useful to refer to the "method of Lin" (see 1995-#58 On Generalizations) An n-fold world is far more complicated than a 2-fold world. If we can conceive of an n-fold existence, then using the method of Lin we may get insights into such 2-fold problems as ~~the~~ a the mind-body relation. This of course also applies to supposing ~~the~~ a 2-fold world in which we may gain insights that are blocked by the demand that we must stay restricted to a one level monadist view of the world and ourselves, (which much of modern science still supports).

*It is not so much the compulsion to oneness that is wrong— it is expecting to achieve oneness while denying or ignoring a part of experience. The path to oneness must include all!

Ultimately the perennial questions derive from our knowledge that we are mortal.

3spexist.wp6 September 21, 1995

THREE KINDS OF EXISTENCE

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

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

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

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

* with Pythagoras, we might assume number has independent existence

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

or by self-reference reflexion not cloning

cf Dreams re room inversion

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

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

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

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

3) This is suchness, SAT, ding an sich, thing in itself. The primary oneness that does not exist as either things or archetypes, the monadic existence beyond Pythagoras, the meta existence that we sometimes call GOD. HEAD Sunyata [Number here: 27]

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

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

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

FOUR ONTOLOGICAL DYADS

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

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

   cf template and thing archetype and manifestation

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

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

   I have experienced a 3D state in visions

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

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

   also templatonics

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

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

eponloop.wp6 September 22, 1995

THE EPISTEMOLOGY-ONTOLOGY LOOP

Previous scraps have emphasized that an ontology is determined by an epistemology. Others have emphasized that an epistemology is given to us by our ontology. Both of these approaches are valid. What we are determines what epistemologies are available to us and the epistemology we use determines our view of what we are and what the world is.
or maybe more than view, actually what we are

The set of epistemologies that are available to humans is bounded by (or contained in) an ontology. We are delimited by what we are, by our hardware, by our stage of biological evolution. We are limited to the tools and knowledge we possess, by the stage of our cultural evolution. We are delimited by what we believe we are, by our software, by the level of our spiritual evolution. But within these ontological boundaries there exists a set of available epistemologies. We can develop and employ one (or more) of these epistemologies from the available set and this (these) will give us an ontological facet(s) of the World. But this facet (or these facets) are but a sub-set of the World. Even a subset of our primary bounding ontology. Hence the ontological -->epistemological-->ontological loop is a contractive one. What we assume the World to be--our ontological picture--is doubly limited by a primary ontology and a selected epistemology. A belief set is the product of an epistemology and our set of beliefs delimits the set of experiences we have, which in turn shapes our ontological picture.

So where do we go from here? It behoves us to explore every available epistemology in order to acquire as many ontological facets of the World as possible. We can only hope that from the set of facets we may be able to glimpse beyond the primary bounding ontology.

An epistemology has two aspects. It is a vessel into which to put our experiences and it is a process, including filters, of collecting what we put into the vessel. Our task is to search for the largest possible vessel and to become aware of the filters we are using.

FISHLEV1.WP6 September 23, 1995

See 2 UNKNOWN, AGW Feb 1, 1993

FISH LEVELS

The old Chinese proverb says: Give a man a fish you feed him one meal, teach him to fish you give him many meals.

The proverb speaks of two levels, but there are more.

1. Give a fish — as parents do

2. Teach how to fish — as schools do

3. Tell of the existence of fish — as wise teachers do
   That is, you are told that fish exist and are good for food, you are left to figure out what to do about it. Design nets, hooks, ...
   You become an entrepreneur.

4. Explore what food is and what things are food — as scientists do
   Face the larger problem, what exists beyond fish

5 Study how to explore — as philosophers do
   What approaches to solving problems such as #4 may there be

6 Seek alternatives to exploration — as sages do
   Go beyond the set of explorative strategies. There is for example, creation as a substitute for exploration. Go beyond finding out what is to making what can be.

7 Adjust the limits of what can and cannot be — as deities do

(cf the steps of Shingon)

cf. BATESON'S LEVELS OF LEARNING ∴ LEVELS OF EVOLUTION

THNKFEEL.WP6 September 25, 1995

THINKING ABOUT FEELINGS

"It isn't anger that is the problem. The problem is we make our anger bite something. We think that our anger tells us something about the world, it tells me about my own vulnerability. It doesn't tell me anything about you. As I refine that even more, feeling doesn't tell me so much about externals, it doesn't tell me much about myself, it tells me about itself. Feeling begins to teach me about feeling". --Lama Kunga

---

FEELING	LINK TO HOOK
ADMIRATION	TOWARD
ANGER	WITH
ANXIETY	---
AWE	OF
COMPASSION	TOWARD
ENVY	OF
FEAR	OF
GRATEFULNESS	TOWARD
JEALOUSY	OF
JOY	---
PAIN	WITH

Feelings and what we are calling 'hooks' are on different levels. The Feeling is less localized than the hook. The hook can usually be associated with a sensory input. We recognize many specific hooks but only a few kinds of feeling. Sometimes feelings are associated with the heart and hooks with the head.

Our natural question is: Which comes first, the feeling or the hook? Where the HOOK-LINK indicates an outward movement, flowing from within us outward, as expressed in English with **toward** or **for,** it seems the feeling is primary. It is a feeling searching for a specific, someone to be grateful to. If the feeling level is 'above' the hook level, then the outward feelings are **descending** from the higher to the sensory level.

Emotion ≠ Feeling

contagious — deep

surface — judgement - Jung ≠ perception

e.g.

embarrassment

hysteria

giggle, cry

Emotion ~ texture = release mechanism

Feeling ~ color

Where the HOOK-LINK indicates an inward direction, flowing from outside to within us, as expressed in English with **with** or **about**, it seems the hook is primary. A specific sensory incident gives rise to the feeling. Someone cutting in front of us makes us angry, someone less deserving winning the lottery makes us jealous. We may consider such examples as **ascending** from the sensation level to the feeling level.

Then there are feelings that seem to be hookless. We can be filled with anxiety without any specific incident occurring. We can be suffused with joy without any specific identifiable cause. Can we conclude that the source of feelings in many cases is not directly traceable to sensory inputs. The world of feeling is not entirely attached to the world of sight and sound.

Sometimes beauty fills us with awe or joy. But beauty is not pure sensation. It is a special filter for sensation. Beauty is an example of a bridge between the sensory level and the feeling level.

Is detachment for cutting the connections, the bridges, between feeling and specifics? To have compassion without attachment seems to mean that we should develop the feeling of compassion and have it always ready for whatever specifics we might encounter. Perhaps this notion should be generalized. We should make all of our feelings detached. Abolish the hooks. Experience the feelings for what they are. Learning to relish the salutary ones, learning to transcend the negative ones. Perhaps we will then perceive that feelings are primary and come from invisible worlds we invent hooks in order to make them part of the visible world.

sensory a trigger

Cognitive Therapy — thinking 1°, Feeling 2°

All sensations must be interpreted → cognition

Triad — Sensation → Perception — interpretation
Thinking → concept
Feeling

sensation + interpretation = perception
perception + value = cognition

map weighted feelings onto psychological types

3 brain @ 3 rules

Therapies are to get to our feelings.
⇒ Feelings are then a priori

1990 # 14
1995 # 51
1997 # 21

URVIB1.WP6 September 25, 1995

THE UR VIBRATIONS

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

> "The cosmic diagram suggests some form of resonance as the process of morphogenesis, as sand collects at the nodes on a vibrating drum head, matter concentrates at nodes corresponding to the set of frequencies $S^{3/2-\nu}f_{\circ}$. This raises many physical questions. Most importantly what is it that is pulsating or vibrating at these frequencies--some substratum, matter itself, or what? Analogies to familiar equations suggest that from the cosmic diagram, we have a set of eigen values representing mass levels, energy levels, or frequencies that are solutions to some 'cosmic wave equation'." by ADW
>
> from Hierarchical Structures in the Cosmos, 1969
> Hierarchical Structures, Whyte, Wilson and Wilson

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

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

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

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

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

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

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

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

Broken symmetry survives
Perfect symmetry re-collapses } ?

The tea kettle:

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

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

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

$$\int dE \circ$$

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

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

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

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

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

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

[Add material on standing waves]

#C69

DYADPROC.WP6 September 26, 1995

DYADIC PROCESSES = DIALECTICS

Much has been written about the two perspectives of time--time as linear and time as cyclical. Some cultures such as Modern Western and ancient Hebrew view time as linear. This is the view that time is only duration. It is the view that manifests itself in history, in evolution, in progress, and in learning. Other cultures such Celtic and Mayan view time as cyclical. This is the view that time has quality. It manifests itself in kairos, the existence of propitious and unpropitious times for certain activities. Time is an engine that drives or governs nature and human activity. Some philosophers maintain all time is cyclical; if it appears linear it because the current cycle has such a long period that we perceive only a small portion of the cycle. Cosmologists cannot decide which kind of time is ultimatiely overriding. It seems to depend on whether the universe is open or closed.

In this essay we want to focus on dyadic processes: cyclical processes that are representable by two states. Perhaps the most general dyadic process is departure and return. Toynbee considers this process to be the fundamental cyclical process underlying human history. Chamberlain and Moulton have extended departure and return to cover geological periods and bio-evolution. In one sense all dyadic processes are special cases of departure and return.

Some dyadic processes:

MATERIALIZATION AND ETHERIALIZATION

This process presupposes the existence of two worlds, the material and the spiritual, or in modern physics the quantum and macro worlds. In classical Christian tradition there is the materialization of the Incarnation and the etherialization of the Transfiguration. There is in the Eucharist the etherialization of transubstantiation, the bread and wine becoming the Body and Blood. In quantum physics the collapse of the wave function is a form of materialization, an incarnation. Observation bringing the particle which was everywhere and nowhere, everywhen and nowhen, into here and now.

STRUCTURING AND DISOLVING

This process is represented by the opposing gods Apollo and Dionysius. Apollo is ever ordering and structuring, Dionysius ever is disolving and liberating. "Dionysius is always escaping the forms that Apollo is creating for him". or "The human spirit is ever escaping the molds that the human intellect is

casting it in". This process, similar to materialization and etherialization, requires however only one level or domain not two. (The alchemists' concretization and sublimation can belong to either dyadic process depending on the number of levels involved).

SEPARATION AND UNION

Chamberlain and Moulton considered that in evolution departure and return took the special form of isolation and cosmopolitanism. There was a period in which the elements were insulated from one another followed by their coming again into communion. A physical example of this is the action of an airfoil moving through the air. The air is split by the foil resulting in a 'dialogue' between the air flow above the foil and the air flow below. The result of the dialogue is *lift*. The two flows return to one after producing lift. This process is basic to the creation of *consciousness*. An entity must split in order that there can be dialogue. The dialogue is the internal interchange that facilitates the development of self-awareness and consciousness. The split results in creator and creation, two separated parts in dialogue. But after the dialogue the two separated parts desire to come together and be one again, in order that there be fulfillment and completion. Other examples of separation and union include: development and testing, genotype and phenotype, monopoly and divestiture.

Other dyadic processes include:

- Plotinus' Ascending and Descending
- Caution and Courage
- Pessimism and Optimism
- Bear market and Bull market
- Expansion and Consolidation
- Innovation and Assimilation
- Switching between
  - open and closed
  - specific and general (local and global)
  - wide field and high resolution (zooming)
- Giving and Receiving (sending and taking)

It is interesting that bread and wine can be used to symbolize many of these dyadic processes. The bread of materialization, the wine of etherialization; the bread of Apollo, the wine of Dionysius, or the bread of Brahma, the wine of Shiva. The bread of isolation, the wine of communion; The bread of form, the wine of emptiness.

DYADPRJ1.WP6 September 27, 1995

A TYPOLOGY OF DYADS
A PROJECT IN RE VERSE EPISTEMOLOGY

Different authors label two-fold objects with such names as binaries, dualities, opposites, etc. These terms are used in general to mean the same thing. In the present project one of the tasks is to explore the various types of two-fold objects and in doing this such terms as listed above will be given specific meanings and assigned to various sub-classes of two-fold objects. Herewith is a 'shopping list' of some two-fold terms used in English:

ADVERSARIALS
BIFURCATIONS
BINARIES
COMPLEMENTARITIES
DICHOTOMIES
DISCRIMINATIONS
DUALITIES
DYADS
OPPOSITES
PAIRS
POLARS
SYMMETRIES

In additions some special terms will be created, such as
BOHREANS
DIRACEANS
to signify special two-fold systems.

To begin with we shall select the term DYAD as the generic label for all two-fold systems. The other terms will refer to sub-classes of DYADS.

In this project we shall proceed using re**verse epistemology.** In direct epistemology we begin with a prior organizing schema or framework and assign elements to their proper places in the structure. In re verse epistemology we begin with a list or pile of elements, (dyads in the present case), and create the schema from comparisons of the elements. Differences and similarities among the elements are noted and organizing parameters derived. The values assumed by the parameters lead to the definitions of the classes to which the elements can be assigned. The defined classes can then be given appropriate labels. The schema and the assignments are thus developed concurrently.

Next in order then is a 'shopping list' of specific dyads, our primary in the creation of the typology.

schema ⟷ assignment

REVEPIST.WP6 September 27, 1995

ABOUT REVERSE EPISTEMOLOGY

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

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

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

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

REDUND01.WP6 September 29, 1995

ON REDUNDANCY

Associated Press, 95/09/27, informs us that pagers across the country go dead.

> "Millions of personal pagers across the country were rendered useless Tuesday when a computer operator inadvertently sent out a command that turned off thousands of satellite receivers."

The receivers had to be manually reprogrammed one by one, while thousands of doctors and others on emergency call were cut off from their sources.

This seems quite anomalous in an industry which introduced the concept of **backups** to the culture. When to have backups or not to have backups depends not on system functioning stability but on the fiscal bottom line But in this thinking fiscal bottom line is restricted to first cost not to total cost. Is this point of view a consequence of our high valuation of efficiency?

Efficiency and redundancy have become adversarial in our way of thinking. Setting up backup systems is only done where there is an overwhelming penalty on both the users and the suppliers as with military operations. But in a business culture in which the suppliers and users are separate and the penalties need fall only on the users, the suppliers bottom line prevails. This has long been recognized as a flaw in the capitalist system and efforts have been made to mitigate it by demolishing monopolies with anti-trust laws and through other forms of regulation, but with most hope being placed on capitalistic free competition.

When there is no competition or when free competition fails, then the answer is to employ the answer that nature uses: redundancy. Nature not only abhors vacuums, it abhors monopolies. Consider, for example, the thousands of frog eggs laid, the few that hatch, and the fewer that survive to further reproduce. But redundancy gets the job done and without it extinction would follow.

We might do well to consider the consequences of a terrorist nukeing of Washington D.C. With the federal control and decision centers obliterated who does what? Where is the backup? During the cold war the high command center was made mobile to make it a difficult target. But mobility is not redundancy. Our expenditures of energy and money have always been toward securing a single system rather than opting for security through redundancy. Is this because of ego at the top?

Maybe so, the ego at the top problem seems to take precedence over both efficiency and redundancy. Our example of ego cum redundancy comes from Ivan the Terrible. Ivan was so distrustful of his government and ministers that he set up an entirely independent and redundant functioning government reporting solely to him called the Oprichnina. It became the prototype for all later systems of secret police.

Our bottom line is that there must be redundancy at the top, no single computer operator, no single command center, no single Ivan.

The Mormon Church – a redundant government

The 2 party system is not an example of redundancy

PD 95/09/27

696

Pagers go dead across the country

By DOUG FERGUSON
Associated Press

TULSA, Okla. — Millions of personal pagers across the country were rendered useless Tuesday when a computer operator inadvertently sent out a command that turned off thousands of satellite receivers.

Space Com, a Tulsa-based satellite transmission service, had to manually reprogram the receivers one by one. About 95 percent of service was restored by the end of the workday.

Space Com has contracts with five of the 10 largest paging companies. Its biggest contract is with Pagenet, which has more than 6 million pagers across the country. Pagenet could not estimate how many of its customers were without service.

"Have we had problems? We've had major problems resulting from this outage," said Pagenet spokesman Gary Hartman in Bridgeport, Conn.

Paging Network of New York, which has 5 million customers nationwide, reported a 20 percent increase in complaints from customers on Tuesday.

The biggest concern was in the medical field, where doctors are on 24-hour emergency standby. Pagenet and and Seattle-based McCaw Communications said they immediately contacted hospitals, law enforcement agencies and other major customers to tell them their pagers were temporarily out of service.

Space Com's satellite system also relays information to stock quote networks like PC Quote in Chicago, which gives 800 customers up-to-the-minute stock quotations.

DYADPROC.WP6 September 26, 1995

see also 1991 #62
1991 #63
1994 #12

DYADIC PROCESSES

DIALECTICS

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Some dyadic processes:

MATERIALIZATION AND ETHERIALIZATION (cf. Mumford)

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BATBEN01.WP6 October 2, 1995

THE BATESON-BENNETT MATRIX

THE BENNETT DIMENSION ---------> STAGES OR LEVELS							
THE BATESON DIMENSION	TOPIC	ONE	TWO	THREE	FOUR	FIVE	SIX
	EDUCATION						
	EVOLUTION						
	CULTURE						
	CHILDREN						
	BUSINESS						
	SCIENCE						

The Bennett dimension has to do with Systematics, exploring the attributes of the topic as rendered by each cardinal numbered stage. The Bateson dimension has to do with noting parallels in the stages of the varôius topics.

The subject here is cognitive or rational epistemologies. Take Education as an example.

Level One: How does society pass on its accumulated knowledge to successive generations?
Level Two: How do we civilize the young without killing their creativity and originality?
Level Three: What are the roles and proper balance among teacher, learner, and curriculum?
Level Four: .....

Science as an example:

Level One: What is the process by which the attributes of the natural order can be learned?
Level Two: How do we study an entity without killing it. i.e. how do we ask a question without precluding our asking some other questions?
Level Three How do we organize Injunction, Observation, Communication?
Level Four: .....

OJSIMPSN.WP6 October 6, 1995

O. J.

I have long felt that the fundamental problem facing the United States is the 'melting pot' problem. This is the deeper problem underlying our racial tensions and such questions as immigration, affirmative action, multi-language use, etc. We must ask, Is a melting pot possible? If so, what kind of melting pot do we want.? Most opinions converge around two polar positions: Let all who come here adapt to our historical heritage from Albion, our British rooted world view; or let a pluralistic culture evolve reflecting contributions from the heritages of all our minorities. Extremists range from racial and cultural purists to abolitionists of all persuasions.

Historically we have China as an example of a melting pot of the first variety, immigrants and even conquerors adapting to the existing culture. Two generations after the Mongol conquerors came they were asking mandarins if poetry they had written was worthy of consideration. Mexico affords an example of the second sort, where the result was a blend of the native and conquistadors' cultures, weighted heavily to the conquerors. If any conclusion can be drawn, it is that when unequal the 'stronger' culture will prevail.

The United States does not seem to have reached a stable position yet. The values enunciated in the Declaration of Independence, the constitution, and other documents, allow the dominant heritage to be modified by the inputs of minorities. This is the basis of the present polarization. In extending the liberties to everyone, including to those who either do not understand them or who disagree with them, we place ~~them in~~ the liberties in jeopardy. The example currently before us is the jury system, the right of one to be tried by a panel of peers.

The present criminal justice system depends on procedures that not only require an understanding of what is and is not evidence, but also on a certain logical way of thinking. Jurors who nullify these procedures either from inability to understand them or for opting to replace them with their own agendas definitely erode the traditional culture. The O. J. Simpson trial and verdict has caught up almost everyone because we all sense the presence of issues that affect us publicly and even personally. Our traditional system is not on trial but it is being tried by a minority. The court is used as a stage for assault on the system.

But there is the question of whether the jurors were looking for any excuse to say 'not guilty' [I have seen white scientists do what the jurors did, throw the baby out with the bath water because there was a minor readily correctable flaw in the evidence] or that they really didn't understand the evidence. Granted that the ins and outs of DNA

chemistry are esoteric, do we have the right to completely ignore evidence because it requires effort to understand it. Years ago, I attended a scientific meeting in which the results of some extensive genetic research were presented, which indicated some important racial diversities. A black scientist rose at the end of the presentation and shouted, "That research doesn't mean anything. It's white man's research". With the jurors giving the Black power salute, ignoring evidence, and the crowds cheering and denouncing the black prosecutor as an Uncle Tom, we begin to ask, is a melting pot possible?

There is much discussion today of the importance of one official language to preserve the state. But it is now clear that even more important is devotion to the standard of a rational way of thinking* which should be inculcated in all our children. The melting pot question turns to what sacrifice of 'everyone doing it his way' must be made in order to have a society at all. This is not a problem of race, it is a problem of cultural interface, a replay of the archetype of Cortez and Moctezuma. Written 1½ yrs before Ebonics

I fear a major white backlash to all of this. A reporter in the courtroom sitting next to a black when the verdict was announced heard him say, "Boy, are we going to pay for this."

In the past few weeks, the entire country has been taken with General Colin Powell, a thoughtful leader of great promise. Here is the opportunity for having the healing administration of a first black president of the United States. Did the O.J. jurors trash this opportunity to save a suspected murderer, just because he was black.

*"White man's thinking"

97/02/05 WHAT THE O.J. TRIALS HAVE SHOWN IS THAT THE JUSTICE SYSTEM IS MORE CLASS BIASED THAN RACE BIASED. A RICH BLACK MAN CAN BEAT THE SYSTEM AS WELL AS CAN A RICH WHITE MAN. FOR THE REST OF US THERE IS ✿ RACE BIAS.

Blacks + Whites alike don't see connections
are opaque to cause + effect,
Do not believe in the law of Karma

The contention in America today is over what
kind of melting pot we want.

where does "privilege" have meaning?[2]
where is it unlawful pity?

Desegregation

Silber's troubling truths

by GEORGE WILL

WASHINGTON

John Silber, the sandpapery president of Boston University, might have been governor of Massachusetts--he was the Democratic nominee in 1990--were he not given to speaking his formidable mind as bluntly as he did when a voter asked what we should teach our children. "Teach them that they are going to die," he said. And have a nice day.

His point was that children need a sense of reality, beginning with the fact that life is short and that living nobly may depend on an early understanding of that brevity. He never tried, as most politicians do, to be a ray of sunshine.

Recently he was here among the politicians, displaying his penchant for uttering discomforting truths. He is a philosopher by academic training and his testimony in favor of repealing bilingual ballot requirements was a model dissection of ill-conceived compassion.

The 1965 Voting Rights Act, as amended in 1975 and subsequently, requires bilingual ballots in jurisdictions with certain demographic characteristics pertaining to linguistic minorities, English deficiency, illiteracy and low voter turnout. But as Rep. John Porter, R-Ill., another advocate Of repeal, noted in testimony, all this is patently peculiar because since 1906 any immigrant seeking citizenship has been required to demonstrate oral English literacy, and since 1950 has been required to "demonstrate an understanding of English, including an ability to read, write and speak words in ordinary English." Applicants over 55 who have lived here at least 15 years are exempted.

Porter said that if immigrants are gaining citizenship without knowing how to read English, the law is not being enforced. And if 18-year-old citizens born and raised here are illiterate in English, the education system is failing.

Patrick, who as President Clinton's assistant attorney general for civil rights is paid to inflate the rhetoric of civil rights while trivializing the subject, testified against repeal of the bilingual ballot requirement, warning of "the pernicious disenfranchisement resulting from a lack of English proficiency."

It fell to Silber to say why bilingual ballots are of "constitutional consequence, amending in effect the very concept of United States citizenship." The naturalization statutes presuppose that English is the language indispensable for life in America, where all the founding documents, and all the laws and all the proceedings of legislatures

MELTPOT1.WPD DISK SCRAPS 1995

But not in Asksam YEARS or SCRPTITL

are in English. Citizens not proficient in English are, Silber said, "citizens in name only" because they cannot follow a political campaign, talk with a candidate, or petition a representative, and providing them with a bilingual ballot merely makes a mockery of civic life.

The financial cost of this unfunded mandate is not trivial. (In the 1994 general election, Los Angeles County spent $67,568.87 accommodating 692 voters who speak Tagalog - $97.64 per voter). However, as Silber testified, the intolerable cost is the degradation of the concept of citizenship when applied to "someone lost in a country whose public discourse is incomprehensible to him."

Silber stressed that in no other nation do so many people, spread over so large an area, speak the same language. This nation, which Lincoln said is dedicated to a proposition, is a creedal nation, founded on shared affirmations, not on ethnicity.

Here, Silber said, ethnicity is "a private matter." Various ethnic groups celebrate their saints and and other sources of communal pride. Such private and voluntary undertakings are splendid. However, the government properly recognizes only Americans, not ethnic groups. In opposition to that principle, bilingual ballots "represent a dangerous experiment in deconstructing our American identity."

But of course, for some of the diversity-mongers who advocate bilingual ballots, such deconstruction is precisely the point. They think it is oppression for one American identity to be (in the jargon du jour of the multiculturalists) "privileged."

Silber says such deconstruction is how nations die. Have a nice day.

George Will is a columnist for the Washington Post.
From the Press Democrat May 3, 1996

1996 #42
1996 #45

LIBEPIST.WP6 October 7, 1995

LIBERATION EPISTEMOLOGY

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

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

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

NEWCHON1.WP6 October 7, 1995

See also 1993#38

ON CHON

AND THE BOUNDARIES OF TIME

Aristotle held that time was an inference of **motion.** But there appears to be a species of time that is not derived from motion. This time is associated with **density** and manifests itself as a bound to allowable periods and frequencies. A familiar example is the Schuster Period, a bound on the period of an earth orbiting satellite when only gravitational and inertial forces are acting. This period of approximately 84 minutes is numerically related to the mean density of the earth and to the universal gravitational constant,G. In general the lower limit to orbiting periods is given by,

(1) $$\tau = 2\pi\sqrt{\frac{R^3}{GM}}$$

Where R is a size parameter (radius) and M is a mass parameter. For a spherical body, this boundary time, τ, in terms of the mean density ρ, is given by,

(2) $$\tau = \sqrt{\frac{3\pi}{G\rho}}$$

These equations govern gravitationally based temporal boundaries and are usually applied to astronomical bodies. Since gravity is a force weaker than the other forces by some 40 orders of magnitude, it seems quite inappropriate that these boundaries have any meaning for bodies where gravity plays an insignificant role, in particular on meso and micro levels. However, there is nothing known that precludes their universal applicability. We therefore make the assumption:

Assumption 1] Equations 1) and 2) may be applied to any entity occupying space and possessing a definite mass.

When applied to objects on the atomic level at first thought it would seem the results would be insignificant, but we are dealing with time, not force, and some surprising values emerge.

Taking for size the Bohr radius, a_o, and for mass, m_p, the mass of a proton, the time τ_H, turns out to be almost exactly 2 hours!

(3) $$\tau_H = 2\pi\sqrt{\frac{a_o^3}{Gm_p}} = 7239.94\text{sec}$$

use m_H not m_p → 7237.97

c. 2 sec less

Westerners in general and Americans in particular do not take kindly to anyone who places himself above others. An authentic lama never places himself above anyone but will permit himself to be used as an object of refuge in a manner consistent with the tantric principle of *Dak sNang*, pure appearance or sacred outlook. The lama is seen as a fully realized Buddha. It is somewhat difficult for us to understand the use of attitude and belief as a tool. We tend to see our attitudes as something akin to indisputable fact, sacred and inviolable. What distinguishes the Vajrayana from the mahayana in general is the wealth of method, *upaya. Upaya* is well translated as the skillful application of means. Skill, as used here goes beyond simple ability and know-how. The connotation is more in line with the dexterity of a juggler or the special prowess of a magician. It is very close to the core concept of the Vajrayana special method of *Dak sNang*. As the magician, we are engaged in the creation of appearance and by this we must understand not a superficial external shell, the artificial mask of the thing, but the thing itself as pure appearance. The more deeply we are able to enter into our appearance, understanding it as such on one hand and, at the same time accepting it, the greater will be our return.

Skill in the application of these means involves not falling into the errors of the extremes. At one end of this continuum we might be completely unable to get beyond our perception of the lama as being human just like us who gets mad, eats junkfood and so on. At the other extreme a naive deification of the lama may result in a kind of emotionally dominated delusional state that exaggerates our vulnerability to our own personal weaknesses and those of others.

It will probably clarify this situation if we distinguish between a lama and The Lama. Lama such and such is an individual who gives teachings and empowerments. He or she probably wears robes while performing the functions of a lama but may not at other times. At this stage of things the lama is likely to be Tibetan but may by now prefer a Big Mac to a bowl of tsampa. The Lama is not visible to the same eye. The Lama is one; lamas may be many. Our teacher may participate in and manifest The Lama according to the level of his or her realization. A very great lama may manifest The Lama more or less continuously, a less accomplished lama more occasionally. The Lama is presented in the teaching as Dorje Chang. He may be experienced as the Sambhogakaya, the mind of absolutely pure phenomena. Here the teaching is directly communicated as experience.The appropriate attitude toward The Lama is devotion. In the Tibetan Dharma literature devotion is described ranging from deep adoration through respectful attentiveness to an act of perception. The former is most commonly seen in prayers associated with guru yoga practices such as Calling to The Lama from Afar. As an act of perception devotion is presented in a Mahamudra context as *seeing* the lama (our teacher) as the Buddha and understanding his actions as beneficent activity for the benefit of sentient beings. It has been said that the special expertise of the Kagyu is devotion. Correct devotion is indispensable to

CHEN 96/02/21

Assume, since we are dealing with gravitational effects, that the proper radius to use is the gravitational radius:

$$r_g = \frac{2GM}{c^2}$$

For other atoms ratio of grav radii

$$\tau_H = \frac{2\pi r_{g_H}^{3/2}}{\sqrt{G m_H}}$$

$$\tau_A = \frac{2\pi r_{g_A}^{3/2}}{\sqrt{G m_A}}$$

$$\frac{\tau_A}{\tau_H} = \frac{r_{g_A}^{3/2}}{r_{g_H}^{3/2}} \sqrt{\frac{G m_H}{G m_A}} = \frac{(2G m_A)^{3/2}}{(2G m_H)^{3/2}} \sqrt{\frac{m_H}{m_A}}$$

$$\frac{\tau_A}{\tau_H} = \sqrt{\frac{m_A^3}{m_H^3}\frac{m_H}{m_A}} = \frac{m_A}{m_H} = A \; : \text{ atomic weight}$$

$$\therefore \tau_A = A\,\tau_H$$

But what is $\tau_H = \frac{2\pi r_{g_H}^{3/2}}{\sqrt{GM_H}} = \frac{2\pi}{\sqrt{GM_H}}\left(\frac{2GM_H}{c^2}\right)^{3/2} = \frac{2\pi}{c^3}\sqrt{8}\sqrt{\frac{G^3M^3}{GM}}$

$r_{g_H} = \frac{2GM_H}{c^2}$

$= {}_{10}-51.604\,919$ cm

$\tau_H = \frac{2\sqrt{2}\pi}{c^3} GM = \frac{2\sqrt{2}\pi}{c}\frac{2GM}{c^2} = \frac{2\sqrt{2}\pi}{c} r_{g_H}$

$\tau_H = {}_{10}-61.133045$ sec

$\frac{\tau_A}{\tau_H} = \frac{r_{g_A}}{r_{g_H}} = \frac{M_A}{M_H} = A$

$\tau_e = 0.121$ sec $= -0.917215$

$\tau_p = \frac{2\pi r_e^{3/2}}{\sqrt{G m_p}} = {}_{10}-2.550768$ sec $= 0.0028134$ sec

$= 355.44139$ hertz

$\frac{\tau_e}{\tau_p} = \sqrt{\mu} = 1.632955$

$\tau_e = -0.917813 \sim 0.1208$ sec

$\tau_p \sim 355.44$ Hertz

$\tau_e \sim 8.276$ Hertz

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

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

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

97/02/25

CHON AGAIN

See 1995-#73 and #83

If we assume the correct radius to use in the formula

$$\tau = \frac{2\pi R^{3/2}}{\sqrt{GM}}$$

is the gravitational radius $R = \frac{2GM}{c^2}$

Then $\tau = \frac{4\pi\sqrt{2}}{c^3} GM = \frac{2\pi\sqrt{2}}{c} R_G$

$\frac{\tau_1}{\tau_2} = \frac{M_1}{M_2}$, if $\tau_2 = H$, $M_2 = M_H$, then $\frac{\tau_1}{\tau_H} = \frac{M_1}{M_H} = \frac{A_1 M_H}{M_H} = A_1$,

i.e. $\tau_1 = A_1 \tau_H$

What then is τ_H $\quad R_{GH} = \frac{2GM_H}{c^2} = 10^{-51.604919}$ cm

and $\tau_H = \frac{2\sqrt{2}\pi}{c} \cdot R_{GH} = 10^{-61.133045}$ sec

This τ_H in Planck units of -42.8692762 sec (h)

is -18.263769 (h) units of time call T_{HP}

$\sqrt{5} = 19.677940$

$\sqrt{5} \times T_{HP} = 1.414171 \qquad (\sqrt{2} = 1.414\,2136)$

i.e. $\log\sqrt{5} + \log T_{HP} = \sqrt{2}$

$T_{HP} = \frac{10^{\sqrt{2}}}{\sqrt{8}}$ check this OK

Also $\frac{\tau_H}{T_{P_H}} = 1.413 \; (\doteq \sqrt{2})$, i.e. $\frac{\log \tau_H}{\log \tau_{P_H}} \doteq \sqrt{2}$

or $\tau_H \overset{\nu}{=} \left(P_{T_H}\right)^{\sqrt{2}}$

PITCH

$\tau_e = \frac{2\pi r_e^{3/2}}{\sqrt{Gm_e}} = 0.1208$ sec $\sim 8,276$ hertz

$\tau_p = \frac{2\pi r_e^{3/2}}{\sqrt{Gm_p}} = 0.0028134$ sec $\sim 355,44139$ hertz $\qquad \frac{f_p}{f_e} = 42.948$

$\tau_H = \frac{2\pi a_0^{3/2}}{\sqrt{G m_H}} = 7239.94$ sec (M_P)

or

7237.97 sec (M_H) $\qquad \frac{\tau_H}{\tau_p} = 2,572,677$

While spatially atomic phenomena are by size out of sight, temporally the 10^{40} coulomb to gravity ratio brings atomic gravitational periods into the time frame of daily experience. This need not be surprising since on the atomic scale we are accustomed to dealing only with coulomb times which are of the order of 10^{-16} sec. If the ratio of force strengths between coulomb and gravitational forces is of the order of 10^{40}, then the ratio of gravitational times to coulomb times must be of the order of 10^{20} leading to atomic gravitational times of the order of 10^{4}sec., as found in the above example of the hydrogen atom.

The near coincidence of this hydrogen gravitational time with a culturally employed unit derived from the earth's rotation period leads us to suspect that micro gravitational times may play some hitherto unsuspected roles. Another example is the Schuster time for an electron, using r_e, the electron radius and m_e, the electron mass, is given by,

(4) $$\tau_e = 2\pi\sqrt{\frac{r_e^3}{Gm_e}} = 0.121\text{sec}$$

about one-eighth of a second, an important time in human visual perception. These gravitational times may supply the zeitgeber needed for various organic clocks and rhythms.

On the basis of the result for atomic hydrogen it seems relevant to inquire how the Schuster equations could be applied to other atoms. One approach to this question is based on gravitational bounds, of which there are two: The first bound is the so-called Schwarzschild Limit. This is a relativistic bound that limits the gravitational potential of all matter (except that in black holes). It applies to nuclear matter and macro objects such as neutron stars. It is given by,

(5) $$\frac{GM}{c^2R} \leq k$$

where k is a constant of the order of unity. The second bound governs all "ordinary" matter, that is matter composed of atoms and molecules. This potential limit is given by,

(6) $$\frac{GM}{c^2R} \leq \alpha^2 k$$

where α is the fine structure constant. We here introduce a second assumption:

Assumption 2] For all atomic and molecular matter the gravitational radius is proportional to the metric radius.

or that since we are concerned with gravitational effects the proper r to use in comparing atom is the gravitational radius

This assumption, a statement that all matter in ordinary state lies along the α^2 potential bound, says that the gravitational radius, $GM/c^2 = k\alpha^2 R$, or that $R = KGM$, where K is a constant. Substituting KGM for R in equation 1) gives,

(7) $$\tau = 2\pi\sqrt{\frac{(KGM)^3}{GM}} = 2\pi K^{3/2} GM$$

That is, the period τ for ordinary matter is closely proportional to the mass, and since $\tau_H = 2\pi K^{3/2} G m_p$,

(8) $$\frac{\tau}{\tau_H} = \frac{2\pi K^{3/2} GM}{2\pi K^{3/2} G m_p} = \frac{M}{m_p} = A$$

where A is the atomic weight. Using this result, $\tau_A = A\tau_H$, we can construct the following table:

ELEMENT	ATOMIC WEIGHT	SCHUSTER PERIOD
HYDROGEN	1.0080	2hr 0m 40sec = 1/12 day
CARBON	12.0112	24hr 9m 20sec = 1 day
NITROGEN	14.0067	28hr 10m 7sec = 7/6 day
OXYGEN	15.9994	32hr 10m 33sec = 4/3 day
POTASSIUM	39.102	78hr 38m 16sec = 13/4 day

We now introduce a third assumption:

Assumption 3] Gravitational periods are to be combined according to the Diophantine rule, $n_1\tau_1 = n_2\tau_2$, where n_1 and n_2 are integers.

This assumption leads to the following values for the combined, or beat, periods:

ATOMIC COMBINATIONS	PERIODS
$1\tau_C = 12\tau_H$	$\tau_{CH} = 1$ day
$7\tau_{CH} = 6\tau_N$	$\tau_{CHN} = 7$ days
$4\tau_{CHN} = 7\tau_O$	$\tau_{CHON} = 28$ days
$13\tau_{CHON} = 112\tau_K$	$\tau_{CHONK} = 364$ days *

We note that the elements most abundant in and important to living organisms give rise to the common periods of time derived from the earth's motions. *[More precisely, 366 1/3 days.]

PYTHUNIV.WP6 October 8, 1995

A PYTHOGOREAN UNIVERSE

I am a Pythagorean. I believe that ultimate reality is not matter, not vibrating waves, not thought, not spirit. The UR essence of the universe is number! Sir James Jeans once said that God is a mathematician. I would say that the Creator is mathematics itself. Underlying all the structure in the world are the attributes of number. The laws of physics, the values of fundamental constants, the multitude of archetypes governing all processes, are what they are because of the properties of number. While in his day Pythagoras restricted cosmography to the natural integers and was devastated by the intrusion of $\sqrt{2}$, today every disciple of Pythagoras is free to adopt with impunity what was once a heresy by including all numbers.

The occurrence of Pythagoreans in history is like the integers, discrete not continuous. There are sometimes gaps of centuries between their appearance: Pythagoras and his school in the sixth century B.C.E., followed by the apostles, Diaphantus, Kepler, Mendeliev, Eddington, Dirac, J.G.Bennett, and many lesser saints, all of whom contributed to Pythagorean Holy Writ by building structures directly on number. But there have also been false prophets who preach various numerologies. As in every discipline there must be criteria for discriminating the valid from the deceptive. The primary test is that more must come out than is put in.

The concern of the present paper is the number basis underlying the structure of the observed astronomical universe. We shall employ a structuralist approach in that we shall look at the relations between entities rather than focusing on what takes place within the entities themselves. Further, we shall consider the synchronic rather than the diachronic aspects of the structure, although in cosmology the synchronic must be inferred from the diachronic.

The structure will be built on the three dimensionless quantities α, μ, and S, being respectively the fine structure constant, the ratio of baryon to lepton mass, and the ratio of coulomb to gravitational force. The fundamental dimensioned constants, c,(velocity of light), G, (Newton's gravitational constant) and h, (Planck's constant) are used as a bridge to the usual observables L,(size), M,(mass), and T (time).

Throughout we shall use more significant figures than may be meaningful in a scientific sense. But in order to test whether results derived from different sources are the same, as much accuracy as is available must be employed. In the case of the fundamental constants, except for the value of G, six or more significant figures may be safely assumed.

In the beginning was the Planck Particle whose extension, mass and time are given by

$$R_P=\sqrt{\frac{Gh}{c^3}},\quad M_P=\sqrt{\frac{hc}{G}},\quad T_P=\sqrt{\frac{hc}{c^5}}$$

whose values are: 4.050837×10^{-33}cm, 5.456203×10^{-5}g, and 1.351287×10^{-43}sec. The density of the Planck Particle, $\rho_P=c^5/hG^2$, is equal to 5.157×10^{93}g/cm^3.
To display the relational structure of the objects in the universe, we shall need the extension, mass, and density times of various fundamental particles. The values and $\log_{10}$ values for the electron, proton, and hydrogen atom as well as for the Planck particle are given in Table I and Table II.

TABLE I cgs Values

PARTICLE	RADIUS cm	MASS g	ρ-TIME sec
PLANCK (ħ)	1.616050×10^{-33}	2.176710×10^{-5}	3.386989×10^{-43}
PLANCK (h)	4.050837×10^{-33}	5.456203×10^{-5}	8.489922×10^{-43}
ELECTRON	2.817941×10^{-13}	9.109390×10^{-28}	0.120555
PROTON	2.817941×10^{-13}	1.672623×10^{-24}	0.002813
HYDROGEN ATOM	5.291772×10^{-9}	1.673534×10^{-24}	7237.97

TABLE II $\log_{10}$(cgs Values)

PARTICLE	RADIUS cm	MASS g	ρ-TIME sec
PLANCK (ħ)	-32.791545	-4.662199	-42.470186
PLANCK (h)	-32.392455	-4.263110	-42.071096
ELECTRON	-12.550068	-27.040511	-0.918814
PROTON	-12.550068	-23.776602	-2.550769
HYDROGEN ATOM	-8.276399	-23.776366	3.859617

The ρ-Time, τ, is calculated from the equation,

$$\tau = 2\pi\sqrt{\frac{R^3}{GM}}\,, \qquad T_P = \frac{\tau}{2\pi}$$

The log values of the ratio of the Planck Particle(based on h) to the proton are:

RADIUS	MASS	TIME
$19.842387 = k^{-1}S^{1/2}$	$19.513492 = kS^{1/2}$	$39.520327 = k^{-1}S$

S, the ratio of coulomb to gravitational force has the value
$\log_{10}S = 39.355880$
$k = \sqrt{(2\pi/\alpha\mu)}$, where α is the fine structure constant and μ is the proton to electron mass ratio, has the value,
$\log_{10}k = -0.164447$

The following table of $\log_{10}$ S and k values is useful for identifying relationships.

	x 1	x k	x k^{-1}
$S^{1/2}$	19.677940	19.513493	19.842387
S	39.355880	39.191433	39.520327
$S^{3/2}$	59.033820	58.869373	59.198267
S^2	78.711760	78.547313	78.876207

For negative values, change the signs of the exponents of both k and S.

Some other frequently used $\log_{10}$ values:
Planck M(h) -4.263110
Planck R(h) -32.392455
Planck T(h) -42.869276

c	10.476821	2π	0.798180
G	-7.175705		
h	-26.178744		
h	-26.976924		
α	-2.136835		
a_o	-8.276399		
m_p	-23.776602		
r_e	-12.550068		
m_e	-27.040511		
e	-9.318469		
S	39.355880		
μ	3.263909		
k	-0.164447 = $\sqrt{(2\pi/\alpha\mu)}$		

CHRCHST.WP6 October 9, 1995

SEPARATION OF CHURCH AND STATE

In 1962 the atheist Madalyn Murray O'Hair filed a lawsuit that led to the Supreme Court ban on prayer in schools. This ruling in effect gave atheism the position of the preferred religion in the United States. Instead of placing atheism in its proper place along side a multitude of other religious persuasions, it was given a position of equality to the totality of all other persuasions. Its particular dogma concerning God was placed in adversarial confrontation to the entire spectrum of other religious beliefs concerning God.

The Court's reasoning in this case defies basic logic. We are presented with a set of positions or beliefs, which according to our Constitution the State has no right to weigh or evaluate, nor to give preference to any member of the set. But this is exactly what the Court did. It singled out from the set $\{A_1, A_2, A_3, \ldots A_n\}$ a particular member A_i and formulated the issue as

$$A_i \text{ vs. } \{\{A_1, A_2, A_3, \ldots A_n\} - A_i\}$$

If the selected doctrinal division had been the Pope, Predestination, Reincarnation, or some other dogma, instead of the existence of God, would then some other A_j have been placed in equal status with the remaining set? The lawyers become authorities in theology! This clearly illustrates that the Constitution is "what the Court says it is" cannot be an acceptable addition to the Constitution. [Where in the Constitution does it say the **Constitution is what the Court says it is**?]

This approach to separation of church and state is the wrong one. The right one is the explicit statement in the first amendment:

> Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof.

To this should be added

> Nor shall the courts interpret the laws in such a manner as to prohibit the free exercise thereof.

The Supreme Court decisions regarding prayer in school etc, have given disproportionate leverage to certain minorities (e.g. atheists)

Democracy: The rights of all are to be protected but this is not effected by giving leverage to minorities

SLOW SCHOOL AHEAD

NO PRAYER ZONE

CROBARON.WP6 October 9, 1995

Editor, Wireless Week
600 So. Cherry St. Suite 400
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Editor:

If Carl Aron is just repeating the truism that it is the readily adaptable, not the well adapted, who survive I must agree with him. However, his metaphorical comparison of the changes now taking place in the wireless industry with a coming "ice age" is not only somewhat over dramatic, it is not accurate.

Aron's four areas of change: 1)competition, 2)revenue, 3)skill level, and 4)available capital do not cover the relevant sectors of change. Equally significant are the contextual change areas of technology, consumer attitudes, and regulatory climate, (none of which fit the ice age metaphor)

With regard to competition, as Aron points out, the more numerous the players the keener the competition, but also the more similar the players the keener the competition. The key to survival in a crowded business field is to be different. Successful management in the next decade will focus on innovation, creating new markets rather than contending for existing market share.

With regard to skill level, it is management's skill level that will be most critical. A technologically proficient and imaginative management, aware of the possibilities in new technology and tuned to the patterns of consumer change, can come up with the services that will assure survival. John Scully, when CEO at Apple Computers, warned that "We are no longer resource

affluent and America's future will depend on a different kind of resource--its intellectual power, and its ability to convert new ideas into wealth". The new measure of our wealth will be in the number of alternatives open to us. New ideas come from all corporate levels and the skill of significating an idea, whatever its source, will be highly prized. It must also be remembered that change is not only trend it is ofttimes cyclical. Trends can reverse. If the present movement toward deregulation results in monopoly, the pendulum will again swing. The management skill of sensing the subtleties in trends will become more important than ever.

New technology and investors conditioned to change make the next few years a time of unusual opportunity. The keys are imagination and, as always, the courage to risk. Aron's Darwinism, the survival of the fittest, will become Jonas Salk's Darwinism, survival of the wisest. Only the already frozen will encounter the future as an ice age.

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A.G.Wilson is a futurist, having taught futures research at both UCLA and USC. He is now a consultant in Northern California.

MOONILUS.WP6 October 14, 1995

THE MOON ILLUSION

I. THE STATIC CASE

It has been experimentally demonstrated that the moon illusion, the apparent enlargement of the diameter of the moon when near the horizon, is a psychological, not an atmospheric effect. Several hypotheses have been suggested, including the effect is due to the angle our head makes with horizon, the effect arises from comparisons with the sizes of more familiar objects such as trees and chimneys, the effect has something to do with rods and cones, etc. None of these proposals is very satisfying.

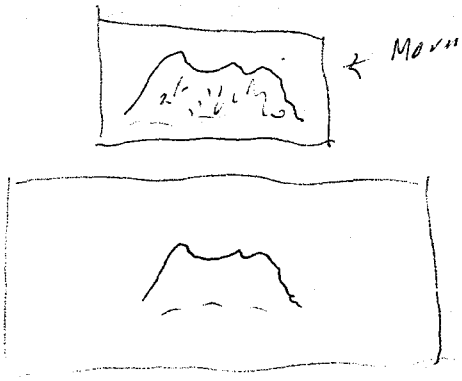
My interest in the illusion began when I lived in Topanga Canyon in California. Our house was located half way up the side of a hill and we could look across the canyon at a symmetric mountain of roughly pyramid shape. This mountain was interesting because it changed size at night. In the full light of day, the mountain was seen to be covered with brush and trees and it extended to cover a sizeable portion of the direct cross-canyon view. At night, however, when only little more than outlines were visible, it shrank down to being but a small fraction of the canyon view. It occurred to me that this effect was related to the apparent change of size of the moon as it climbed from the horizon.

The common ingredient in both cases was information. In the daytime the view of the mountain was filled with detail, shapes of trees, rocks, etc, an abundance of information. The same for the moon when near the horizon, lots of information in the view, roof tops, trees, poles, etc. In both cases the mountain and the moon were enlarged. At night the details on the mountain disappeared with much loss of information. And when the moon is higher in the sky there is also much less information in the view. In both cases the mountain and the moon appear to be smaller. In toto we have, when there is lots of information present, the central object of view becomes enlarged, with less information present, the object shrinks.

We can explain this by postulating two 'cones' or diaphragms of view. One cone is the optical field of view, the field opthamologists study when they check peripheral vision. The other cone is an informational cone defined by the amount of visual information we can process in some physiological time unit. The angular size of both cones is limited, but the ratio of their sizes varies. When the 'density' of information is large, the angular field of the information cone narrows resulting in the object of view occupying a larger fraction of the information cone, i.e. the object appears enlarged. Conversely, when the density of information is less, the angular field of the information cone grows and the central object appears relatively smaller. The

I have noted that Mt. St. Helena is much larger when there are back ground clouds than when the sky is completely cloudless. Again information reducing the perception cone ~~to~~ the optical cone.

The informational cone is like a picture frame. It "crops" the picture. Its size is determined by the amount of information we are capable of procesing.



apparent size of an object is determined by its angular relation to the information cone, not the optical cone. There is a rod-cone illumination factor affecting the size of the optical cone, but this is apparently a much smaller effect than the angular changes taking place in information processing.

More formally, we postulate a bound to the number of bits of information that can be processed per scanning time unit. If σ = the information density measured in bits/(arcsec)^2, and if Ω = the angular field size of the information cone, the total number of bits is = $\sigma\Omega$. The value of Ω will adjust so that the bound, $\sigma\Omega/t \leq B$, is satisfied, where B is the maximum amount of information that can be processed in time t. For t fixed, (the static case), a large value of σ forces Ω to be smaller, which in turn makes a centrally viewed object occupy a larger percentage of Ω. Conversely, a small value of σ allows Ω to be larger and a central object appears smaller. In summary, the moon illusion is the result of the existence of a limit to our visual information processing capacity.

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II. THE DYNAMIC CASE

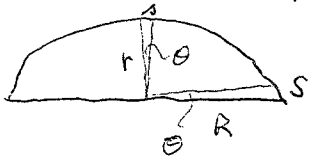
At the Los Angeles airport airplanes arrive only minutes apart. One day I was parked about a half mile from the airport on a street making a right angle to the landing runway. I began to watch the planes come in viewing their approach at right angles. I noticed that the apparent landing speed of the planes seemed to vary inversely with their size. While the larger planes actually had faster landing speeds their apparent angular speed was the least, in some cases so small it seemed they would stall. ~~landing planes watching~~

II Peter 3:8 One day is with the Lord as a thousand years and a thousand years as one day.

This is not about the movement *in* time, past → present → future. It is about the scale of time, the resolving power, the size of "now". It is zooming in and out.

As with the cones of information and optics, we have with time the "spread of now" as a function of the information content of the "now". This may also effect the subjective speed of time, velocity of the now.

Another item: The distance to the zenith < the distance to the horizon (Hamburger Bun)



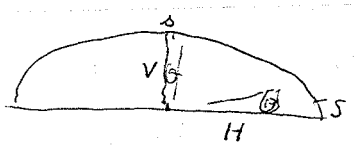
$R > r$

$S \; S = R\theta > r\theta = s$

$\therefore S > s$

But why is $R > r$?

Is the appearance of $H > V$ due to 1) the moon being larger on the horizon or
2) Both $H > V$ and the moon illusion being both subject to a common cause?



1) a) $S > s$

$S = H\textcircled{H}$, $s = V\theta$

if $\textcircled{H} = \theta$

then $H > V$

OK

b) $\textcircled{H} > \theta$ $S = s$

$\frac{S}{H} > \frac{s}{V}$

$\frac{1}{H} > \frac{1}{V}$ $V > H$

NO

c) both $S > s$ $\textcircled{H} > \theta$

$H\textcircled{H} > V\theta$

H could be $\leq V$

with $\textcircled{H} > \theta$

$\geq$?

2) If Looking up makes things look closer, then for $s = S$ $\theta > \textcircled{H}$

~~$H > V$~~

a) if $S = s$

$H\textcircled{H} > V\theta$

$\textcircled{H} \geq \theta$

b) if $\textcircled{H} \not< \theta$

then $S \geq s$

$H\textcircled{H} \geq V\theta$

$\therefore H \geq V$

OK

but is $\theta > \textcircled{H}$?

no

No firm conclusions

THE MOON ILLUSION

Albert G. Wilson

It has been experimentally demonstrated that the moon illusion, the apparent enlargement of the diameter of the moon when near the horizon, is a psychological, not an atmospheric effect. Several hypotheses have been suggested, including the effect is due to the angle our head makes with horizon, the effect arises from comparisons with the sizes of more familiar objects such as trees and chimneys, the effect has something to do with rods and cones, etc. None of these proposals is very satisfying.

My interest in the illusion began when I lived in Topanga Canyon in California. Our house was located half way up the side of a hill and we could look across the canyon at a symmetric mountain of roughly pyramid shape. This mountain was interesting because it changed size at night. In the full light of day, the mountain was seen to be covered with brush and trees and it extended to cover a sizeable portion of the direct cross-canyon view. At night, however, when only little more than outlines were visible, it shrank down to being but a small fraction of the canyon view. It occurred to me that this effect was related to the apparent change of size of the moon as it climbed from the horizon.

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One way of explaining this is to postulate two diaphragms or 'cones of view'. One diaphragm or cone is the sensory or optical field of view, the field optometrists study when they check peripheral vision. The other diaphragm or cone is a cognitive or informational one defined by the amount of visual information that can be processed in some physiological time unit. The

11/23/95
rev 96/10/04

It is a matter of "framing"
How something appears is how it is framed

angular size of both cones is limited, but the ratio of their sizes varies. When the 'density' of information is large, the angular field of the cognitive cone narrows resulting in the object of view occupying a larger fraction of this information cone, i.e. the object appears enlarged. Conversely, when the density of information is smaller, the angular field of the cognitive cone grows and the central object appears relatively smaller. The apparent size of an object is determined by its angular relation to the cognitive cone, not the optical cone.

There is also a rod-cone illumination factor affecting the size of the optical cone, but this is apparently a much smaller effect than the angular changes taking place in information processing. A small cognitive angle of elevation effect may also be present, a vestige of primitive man's survival adaptation.

More formally, in a cognitive cone we postulate a bound to the number of bits of information that can be processed per scanning time unit. If σ = the information density measured in bits/(arcsec)^2, and if Ω = the angular field size of the information cone, the total number of bits is = $\sigma\Omega$. The value of Ω will adjust so that the bound, $\sigma\Omega/t \leq B$, is satisfied, where B is the maximum amount of information that can be processed in time t. For t fixed, (the static case), a large value of σ forces Ω to be smaller, which in turn makes a centrally viewed object occupy a larger percentage of Ω. Conversely, a small value of σ allows Ω to be larger and a central object appears smaller. In summary, the moon illusion is the result of the existence of a limit to our visual information processing capacity.

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CAUSDIAL.WP6 October 15, 1995

CAUSALITY and DIALECTICS

This is a look at some of the ways in which we interpret our encounters with diachronic sequences of events.

Add definition of diachronic synchronic

SINGLE STREAM SEQUENCES

Monó

Causality

The common interpretation of a diachronic sequence of events is causality. Each temporally preceding event is thought to *cause* the succeeding temporal event. This form of causality is past oriented.

to kairos

Finality

The cause of the events in the sequence is some state yet to be realized. This is *goal* or *future oriented* causality.

DOUBLE STREAM SEQUENCES

Purpose Duals include templatonics

Synchronicity

Two streams of events intersect in a meaningful manner without visible causal connections. Or, the interposition of an apparently extraneous or anomalous event meaningfully into a diachronic sequence. A special case is called 'serendipity'.

Dialectics

The repeated intersection and interaction of two streams of diachronic events which modify one another and create interpositioned causal chains. The Caduceus of Hermes symbolizes the dialectical process. One example is the Hegelian or Herakleitian dialectic: Thesis interacting with Antithesis resulting in a synthesis.

SPECIAL TYPES OF CAUSALITY

Some Species of Determinism

I. External formulae processes

In general II can be → I

A sequence is generated by a formula or recipe which produces the n^{th} event by substituting n into the formula. – a template? ∃? dual + mono templates?

II. Implicit processes

1) The n^{th} term of the sequence is generated from the properties of the $(n-1)^{st}$ term. That is the structure of the next event is defined completely by the structure of the last event.

Horizontal non-dual

2) Markovian process: The n^{th} term depends jointly on the structure of the $(n-1)^{st}$ and $(n-2)^{nd}$ events. An example is the Fibonacci sequence in which each term is equal to the sum of the two preceding terms.

→ random

3) The structure of the n^{th} term is determined by the structure of the preceding sub-sequence of m terms where m > 2 and less than the total number of preceding terms. ~ Maxwell's singular points, also chaos theory

4) The structure of the n^{th} term depends on the entire *history* of the sequence, on all the preceding events.

5) Each successive event is independent, Camus' existentialism

6) Causality and Time completely divorced

weak Calvinism God can intervene scientific determinism + strong Calvinism

PYTHCOSM.WP6 October 24, 1995

A PYTHAGOREAN COSMOLOGY

The relatavistic potential bound dividing "ordinary" matter from the nether world of black holes, known as the Schwarzschild Limit is given by,

$$\frac{GM}{Rc^2} \leq 1 \qquad (1)$$

where M is mass, R is extension, G is the Newtonian constant, and c is the velocity of light. This boundary marks the value at which the gravitational energy of a body, GM^2/R, is equal to its total energy, Mc^2; and where the gravitational radius, GM/c^2, is equal to the metric radius, R. Equation (1) says that the gravitational energy is always less than or equal to the total energy. However, on the 'black hole side' of the boundary we have the paradox that the gravitational energy can exceed the total energy. This 'paradox' results from the somewhat chauvinistic use of the term total, rather than from the physics itself. If in the early stages of the evolution of the universe the ambient conditions are on the high potential side of equation(1), then the principle of conservation of energy would properly refer to the conservation of gravitational energy, GM^2/R, rather than to the conservation of total energy, Mc^2.

The following scenario is based on the principle of the conservation of gravitational energy:
Step 1. Postulate the initial condition of the existence of a single particle, Ω, having a mass, M_Ω, and a spatial extension R_Ω.
Step 2. The Ω particle fragments into N_1 Planck particles while conserving gravitational energy.
Step 3 Each of the N_1 planck particles fragments into N_2 baryons, again conserving gravitational energy.
The resulting $N_1 x N_2$ baryons constitutes the matter in the present Hubble universe.

In the following all numbers are the $\log_{10}$ values.
We proceed by running the scenario backwards. The Hubble universe is assumed (with Eddington) to have a mass equivalent to that of S^2 or 78.711760 baryons = 54.935158 grams. This provides us with the end value,

$$N_1 \times N_2 = S^2 \qquad (2)$$

The gravitational energy of a Planck particle is 16.690530 ergs; the gravitational energy of a proton is -42.178435 ergs. If gravitational energy is conserved, then one Planck particle can fragment into N_2 = 58.868965 (= 7.401538×10^{58}) baryons. Knowing N_2 we can now calculate N_1 from equation (2), $N_1 = S^2/N_2$, which gives N_1 = 19.842387 (= 6.9561×10^{19}) baryons. We note that

$N_1 = k^{-1}S^{1/2}$ and $N_2 = kS^{3/2}$, where $k=\sqrt{(2\pi/\alpha\mu)}$.
Continuing backwards in time, we next follow the metamorphosis of a Planck particle into baryons. A single Planck particle under conservation of gravitational energy becomes 58.869373 baryons, each with a mass of -23.776604 grams. The total mass of all the baryons created will be 35.092718 grams. Converting to solar masses, [1 solar mass = 33.288 grams], this value is equal to $10^{1.805}$ or 63.8 solar masses, which is closely the maximum observed value for the mass of stars. We may hence conclude that each Planck particle metamorphizes into a proto-star, and that there can then be at least N_1 or 19.842387 stars in the universe.

Since we have already determined the value of N_1, we can now go to step 1) and derive the properties of the Ω particle. The gravitational energy of a single Planck particle is 16.690530 ergs, hence the total gravitational energy of N_1 Planck particles is 36.532880 ergs. This is the value of GM_Ω^2/R_Ω. However, a second condition is needed to isolate the values of M_Ω and R_Ω. Here we can make some choices: For one, suppose we invoke symmetry. A Planck particle in metamorphizing to baryons goes from the Schwarzschild Limit, $M/R = c^2/G = 28.129308$ to $m_p/r_e = -11.226536$; a total shift in potential of 39.355881, which is numerically equal to S. If we assume that the shift in potential from the Ω particle to the Planck particle is also equal to S, this would give $M_\Omega/R_\Omega = 67.485226$ for the Ω particle. We now have the two equations,

(3) $$\frac{GM^2}{R} = g \qquad \text{and} \qquad \frac{M}{R} = p$$

where g = 36.532917 and p = 67.485226, whose solutions are,

(4) $$M = \frac{g}{Gp} \qquad \text{and} \qquad R = \frac{g}{Gp^2}$$

giving M_Ω = -23.776604 grams and R_Ω = -91.261830 cm. We note that the Ω particle has the same mass as the proton!

Recapitulating: In stage 1) the Ω particle of mass -23.776604 g metamorphizes under conservation of gravitational energy to N_1 = 19.842387 Planck particles, with a total mass of 15.579239 grams. In stage 2) each of the 19.842387 Planck particles of mass -4.263125 grams, metamorphizes under conservation of gravitational energy to N_2 = 58.869322 baryons which is equal to a stellar mass of 35.092718 grams or 63⊙. This leads to the present Hubble universe of $N_1 x N_2$ = 78.711686 baryons with a total mass of 54.935082 grams.

The first method of designating an Ω particle derived from the proportion,

$$\frac{\left(\frac{M}{R}\right)_{\Omega}}{\left(\frac{M}{R}\right)_{PL}} = \frac{\left(\frac{M}{R}\right)_{PL}}{\left(\frac{M}{R}\right)_{p}} = S \quad (5)$$

This approach led to the values $M_{\Omega} = m_p = -23.776604$ grams and $R_{\Omega} = -91.261830$ cm.

A second approach to the designation of Ω, which we will here designate with the symbol, ω, derives from equating the value of MR to that of GM^2/R. This gives us the equations,

$$MR = \frac{GM^2}{R} = 36.532880 \quad (6)$$

from which we derive $R_{\omega} = 9.785738$ and $M_{\omega} = 26.747142$

The scenarios for both the particle Ω, or the particle ω, have first, metamorphizing into $N_1 = k^{-1}S^{1/2}$ Planck particles. Each Planck particle then metamorphizes into $N_2 = kS^{3/2}$ baryons. The end result is a universe of $N_1N_2 = S^2$ baryons. It is to be noted that $kS^{3/2}$ baryons is the maximum stellar mass and that the mass of Ω is the same as that of a baryon. The gravitational energy of the Ω particle and the ω particle is in both cases 36.532917 which is symmetric to the gravitational energies of the Planck particle = -36.655565 = h/c and the proton = -36.326672 = k^{-2}h/c.

Redo using h

A PYTHAGOREAN COSMOGRAPHY

	R	M	M/R	MR	GM^2/R	GM/c^2	GM/c^2R
Ω	-91.261830	-23.776604	67.485226	-115.038434	36.532917	-51.905951	39.355889
ω	9.785738	26.747142	16.961404	36.532880	36.532841	-1.382205	-11.167943
PL(h)	-32.392455	-4.263110	28.129345	-36.655565	16.690530	-32.392457	0
p	-12.550068	-23.776602	-11.226534	-36.326670	-42.178435	-51.905949	-39.355881
Ω		m_p					S
ω							
PL(h)	$\sqrt{(Gh/c^3)}$	$\sqrt{(hc/G)}$	c^2/G	h/c		$\sqrt{(Gh/c^3)}$	S^0
p	r_e	m_p		$k^{-2}h/c$			S^{-1}

Ω/PL	-58.869375	-19.513494	39.355881	-78.382869	19.842387	-19.513494	39.355889
Ω/p	-78.711762	0	78.711760	-78.711764	78.711352	0	78.711770
ω/PL	42.178193	31.010252	-11.167941	0.122685	19.842311	31.010252	-11.167943
PL/p	-19.842387	19.513492	39.355879	-0.328895	58.868965	19.513492	39.355881
Ω/PL	$k^{-1}S^{-3/2}=N_2$	$k^{-1}S^{-1/2}$	S	$k^{-2}S^{-2}$	$k^{-1}S^{1/2}$	$k^{-1}S^{-1/2}$	S
Ω/p	S^{-2}	S^0	S^2	S^{-2}	S^2	S^0	S^2
ω/PL					$k^{-1}S^{1/2}$		
PL/p	$kS^{-1/2}=N_1$	$kS^{1/2}$	S	k^2	$kS^{3/2}=N_2$	$kS^{1/2}$	S

PYTHC MGR. WP5 95/10/26

SWRZLIM1.WP6 October 27, 1995

THE SCHWARZSCHILD LIMIT

THE BLACK SHIELD

The Schwarzschild limit is a gravitational potential bound that divides the universe as we experience it from the counter-intuitive realm of black holes, white holes and worm holes, from the realm of unimaginable densities, sizes, and times. It is represented by the equation:

(1) $$\frac{GM}{c^2R} = 1$$

where G is Newton's gravitational constant, c is the velocity of light and M and R are the respectively the mass and size of the body.

There are three important watersheds that occur at the bound:

1. The gravitational energy of a body is equal to its total energy.

(2) $$\frac{GM^2}{R} = Mc^2$$

the left member being the gravitational energy and the right member the total energy. On "our side" of the bound the total energy exceeds all other forms of energy, on the "black" side of the bound the gravitational energy is the greatest. This leaves us with a semantic paradox regarding the word total: In fact,"Total" energy, Mc^2, is but a label for a particular kind of energy.

2. The gravitational radius is equal to the metric radius,R.

(3) $$\frac{GM}{c^2} = R$$

On the experienced side of the bound the gravitational radius is always less than the metric radius; the situation is reversed on the black side.

3. The light travel time is equal to the density or Schuster time.

(4) $$2\pi\frac{R}{c} = 2\pi\frac{R^{3/2}}{\sqrt{GM}}$$

The brevity of c time compared to ρ time is reversed on the black side of the bound.

4. Also the gravitational pressure
= the "total" pressure
on the Schwarzschild Limit

$\Rightarrow$ Balance

$$\underbrace{\frac{GM^2}{L}}_{\text{energy}} \cdot \underbrace{\frac{1}{L^3}}_{1/\text{volume}} = \frac{Mc^2}{L^3}$$

or $$\underbrace{\frac{GM^2}{L^2}}_{\text{Force}} \cdot \underbrace{\frac{1}{L^2}}_{1/\text{area}} = \frac{Mc^2}{L} \cdot \frac{1}{L^2}$$

5. The orbital velocity = c

$$v_0 = \sqrt{\frac{GM}{R}} \qquad \frac{GM}{R} \cdot \frac{1}{c^2} = 1 = \frac{v_0^2}{c^2}$$

$$\therefore v_0 = c$$

82a
also 1995 #27

FRACAGE1.WP6 October 27, 1995 REV October 19, 1996

A FRACTAL AGE OF THE UNIVERSE

An alternate approach to determining the age of the Hubble universe is to consider its fractal nature; that is, properties of its parts being similar to those of the whole. Let us ask how long it would take for a Planck particle to expand to the size of a baryon, specifically, for the Planck length, $\sqrt{(Gh/c^3)}$ to grow to the size of the electron radius, r_e.
$\sqrt{(Gh/c^3)} = L_p = -32.791341$ and $r_e = -12.55068$ $\log_{10}$(cgs) values

What are the boundary conditions governing such expansion?

The Heisenberg uncertainty principle provides us with the inequality,

$$\frac{ML^2}{T} \geq h \qquad (1)$$

which places a lower bound on all action. The left member is equivalent to,

$$\frac{M}{L}\,\frac{L^3}{T} = \frac{M}{L}\,\frac{V}{T} \geq h \qquad (2)$$

where V is volume.

The Schwarzschild inequality $GM/c^2R \leq 1$, when substituted in equation (2) gives,

$$\frac{c^2}{G}\,\frac{V}{T} \geq \frac{M}{L}\,\frac{V}{T} \geq h \qquad (3)$$

This says that the <u>minimum</u> volume rate of expansion V/T is equal to $\Psi = Gh/c^2$, whose $\log_{10}$ value is -55.105861 cm^3/sec. This implies in turn that the <u>maximum</u> time taken for the expansion is $T = V/\Psi$ (Whether or not there is inflation). With $V = r_e^3 = -37.650205$, T becomes 17.455656 seconds or 9.056 billion years.

The value of 9.056 billion years is the age of the universe which corresponds to a Hubble Age of 13.584 billion years and to a Hubble constant of 71.994 km/sec/mpc.

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According to the current relatavistic cosmological model, the Hubble age of the universe calculated from the value of the Hubble constant is 3/2 greater than the actual age. [That is at the critical density of matter that closes the universe ($\Omega = 1$), the Hubble Time is 3/2 the time elapsed since the big bang.] Observations made on cepheids by Wendy Friedman and associates of the Carnegie Institution, reported in the June 1996 Carnegie publication, "Spectra", lead to a value of the Hubble constant of 73 with a 15% uncertainty. This gives a Hubble time of 13.40 billion years or a time since the big bang of 8.93 billion years. Sandage, also of the Carnegie Institution, reports in the same issue, a value of 57 km/sec/mpc with an uncertainty of 7%, based on type Ia supernovae. This corresponds to a Hubble age of 17.16 billion years or a time from the big bang of 11.44 billion years. When compared with the age of stars in globular clusters of 15 billion years, we have the problem of "being older than your mother", stars whose age is greater than that of the universe.

The following table compares the FRACTAL age derived here with those calculated from cepheids and from type Ia supernove.

	FRACTAL	CEPHEIDS	SUPERNOVAE
HUBBLE CONSTANT	71.96 k/s/mpc	73 k/s/mpc	57 k/s/mpc
HUBBLE AGE	13.584 B.Y.	13.40 B.Y.	17.16 B.Y.
TIME FROM BIG BANG	9.056 B.Y	8.93 B.Y.	11.44 B.Y.
UNCERTAINTY	< 1 %	15 %	7 %

NEWCHON2.WP6 October 26, 1995

CHON REVISITED

Replaces 1995 # 73

Aristotle held that time was an inference of **motion.** But there appears to be a species of time that is not derived from motion. This time is associated with the **density** of matter and manifests as a zeitgeber that governs local clock rates. Its period is inversely proportional to the square root of the mass density. A familiar example is the Schuster Period, a bound on the period of an earth orbiting satellite when only gravitational and inertial forces are acting. This period of approximately 84 minutes is numerically related to the mean density of the earth and to the universal gravitational constant,G. In general the lower limit to orbiting periods is given by,

(1) $$\tau = 2\Pi\sqrt{\frac{R^3}{GM}}$$

Where R is a size parameter (radius) and M is a mass parameter. It is seen that equation (1) is a bounding case of Kepler's third law. For a spherical body, this boundary time, τ, in terms of the mean density ρ, is given by,

(2) $$\tau = \sqrt{\frac{3\Pi}{G\rho}}$$

Equations (1) and (2) are usually applied to astronomical bodies and since gravity is a force weaker than the other forces by some 40 orders of magnitude, it seems quite inappropriate that these equations have any significance for bodies where gravity plays no detectable role, in particular on micro levels, such as for atoms and particles. However, there is nothing known that precludes their universal applicability. We therefore make the assumption:

Assumption 1] Equations 1) and 2) may be meaningfully applied to any entity occupying space and possessing mass.

When applied to objects on the atomic level at first thought it would seem the results would be insignificant, but we are dealing with time, not force, and a surprising value emerges. As our example, we take for size the Bohr radius, a_o, and for mass, m_p, the mass of a proton. The time τ_H, turns out to be almost exactly 2 hours! Specifically,

(3) $$\tau_H = 2\Pi\sqrt{\frac{a_o^3}{Gm_p}} = 7239.94\text{sec}$$

Spatially atomic phenomena are by size out of sight, but temporally the 10^{40} coulomb to gravity ratio brings atomic gravitational periods squarely into the time frame of daily experience. This need not be surprising since on the atomic scale we are accustomed to dealing only with coulomb times which are of the order of 10^{-16} sec. If the ratio of force strengths between coulomb and gravitational forces is of the order of 10^{40}, then the ratio of gravitational times to coulomb times must be of the order of 10^{20} leading to atomic gravitational times of the order of 10^{4}sec., as found in the above example of the hydrogen atom. Another example is the Schuster time for an electron. Using r_e, the electron radius and m_e, the electron mass, the Schuster period is given by,

(4) $$\tau_e = 2\pi\sqrt{\frac{r_e^3}{Gm_e}} = 0.121\text{sec}$$

which is about one-eighth of a second, an important time in human visual perception.rhythms.

Next we note the near coincidence of the hydrogen gravitational time with a culturally employed time unit derived from the earth's rotation period. This leads us to suspect that micro gravitational times may play some hitherto unsuspected roles. On the basis of the result for atomic hydrogen it seems relevant to inquire how the Schuster equation could be applied to other atoms.

The correct value to be used for mass is likely to be the atomic weight of the atom. But what value should be used for the size (radius)? The size of an atom can be defined in alternate ways, but which way is correct for equation (1)? One approach is to note relations between mass and density. For larger bodies, planets, stars, etc., there is a rough correlation between the density of the body and the reciprocal of the mass, which is to say, $\rho \propto M^{-1}$. We provisionally therefore assume:

Assumption 2] For atoms and the mass varies inversely with the density.

This assumption is equivalent to $M^2 \propto L^3$. Substituting $(KGM)^2$ for L^3 in the time equation, we get,

(5) $$\tau = 2\pi\sqrt{\frac{(KGM)^2}{GM}} = 2\pi K^{3/2}\sqrt{GM}$$

That is, the period τ for ordinary matter is closely proportional to the square root of the mass.

(6) $$\frac{\tau}{\tau_H} = \frac{2\pi K^{3/2}\sqrt{GM}}{2\pi K^{3/2}\sqrt{Gm_p}} = \frac{\sqrt{M}}{\sqrt{m_p}} = \sqrt{A}$$

where A is the atomic weight. Using this result, $\tau_A = \tau_H\sqrt{A}$, we can construct the following table:

ELEMENT	ATOMIC WEIGHT	$\sqrt{A}$	SCHUSTER PERIOD
HYDROGEN	1.0080	1	2hr 0m 40sec = 1/12 day
CARBON	12.0112	3.47	6.98 hr
NITROGEN	14.0067	3.74	7.52 hr
OXYGEN	15.9994	4	8.04 hr

We now introduce a third assumption:

Assumption 3] Gravitational periods are to be combined according to the Diophantine rule, $n_1\tau_1 = n_2\tau_2$, where n_1 and n_2 are integers.

This assumption leads to the following values for the combined, or beat, periods:

ATOMIC COMBINATIONS	PERIODS
$24\tau_C = 168$hr	7 days
$16\tau_N = 120$hr	5 days
$3\tau_O = 24$hr	1 day

We note that the elements most abundant in and important to living organisms give rise to the common periods of time derived from the earth's motions.

A PYTHAGOREAN COSMOGRAPHY

	R	M	M/R	MR	GM^2/R	GM/c^2	GM/c^2R
Ω	-91.261830	-23.776604	67.485226	-115.038434	36.532917	-51.905951	39.355889
PL(h)	-32.392455	-4.263110	28.129345	-36.655565	16.690530	-32.392457	0
p	-12.550068	-23.776602	-11.226534	-36.326670	-42.178435	-51.905949	-39.355881
Ω	$r_e S^{-2}$	m_p	Sc^2/G	$S^{-2}k^{-2}h/c$	yS^2	Gm_p/c^2	S
PL(h)	$\sqrt{(Gh/c^3)}$	$\sqrt{(hc/G)}$	c^2/G	h/c	$ykS^{3/2}$	$\sqrt{(Gh/c^3)}$	S^0
p	r_e	m_p	$S^{-1}c^2/G$	$k^{-2}h/c$	y	Gm_p/c^2	S^{-1}

re-do with k

Ω/PL	-58.869375	-19.513494	39.355881	-78.382869	19.842387	-19.513494	39.355889
Ω/p	-78.711762	0	78.711760	-78.711764	78.711352	0	78.711770
PL/p	-19.842387	19.513492	39.355879	-0.328895	58.868965	19.513492	39.355881
Ω/PL	$k^{-1}S^{-3/2}=N_2$	$k^{-1}S^{-1/2}$	S	$k^{-2}S^{-2}$	$k^{-1}S^{1/2}$	$k^{-1}S^{-1/2}$	S
Ω/p	S^{-2}	S^0	S^2	S^{-2}	S^2	S^0	S^2
PL/p	$kS^{-1/2}=N_1$	$kS^{1/2}$	S	k^2	$kS^{3/2}=N_2$	$kS^{1/2}$	S

PYTHCMGR.WP6 95/10/27

DENVER

3MAJTRND.WP6 October 30, 1995

THREE MAJOR TRENDS

fragmentation vs consolidation

Three major trends are occurring in the social order:

1. Homogenization: While the global homogenization is primarily economic, world markets become increasingly unified, there is also a great cultural and value homogenization taking place. This is being led partly by the imperatives of technology, but more by the values of those on the cutting edge of technology.

2. Elitism: At first glance, elitism, the vertical structuring of the social order, seems contradictory to homogenization. While there is global economic homogenization, it is horizontal. Within this homogenized system, access to the global market is rationed according to wealth. While this has always been the case, the degree of difference between the bottom and top is rapidly increasing and reaching a dangerous level when so many are being excluded from the market place entirely.

is elitism the result of GUP ↔ GEP?

3. Leverage: The increased power available to those at the top. Their control is sweeping a positive feedback situation into a tighter and tighter loop, driving both homogenization and increased elitism. Techniques of mass manipulation have vitiated the idea of democratic elections. In the absence of any checks on the top, a great imbalance is developing. [This is similar to the biological order. Humans are at the top. There is no check on their activities except their own competition. They are the predators who have no predators. (unless some invisible bacterium)]

There is an underlying force, independent of technology, that is driving homogenization. This is the Principle of Plenitude. Each organism seeks to fill the world with its own kind and to alter the environment in such a way as to favor itself and block competitors. If left unchecked the most powerful organism would eventually replace the ecology on which it depends for survival with itself, assuring its demize. We see the example of this in the cancer cell which in trying to convert all to its own kind, destroys its host and itself.

The principle of plenitude operates on many levels, but assumes a different structure at each level. At the organism level the principle of plenitude speaks to the maximization of number of members of the species. On the ecological level number of members is replaced by number of species. On a third level, it is the number of varities of ecologies. Beyond the variety of ecologies, only mathematics and science fiction can generate meta-alternatives. We see examples of the principle of plenitude in both our politics and religion. Evidently people feel uncomfortable with alternatives. Their security lies in uniformity. In the church a monotheistic God is invoked to support One Faith, One Church, and missionaries are sent out to proseletize. The Nazis shouted Ein Volk. Ein Reich, Ein Fuhrer, and seeked to replace others with their own aryan breed. The drive to homogenization, the fear of differences and diversity, lies deep.

Elitism is also an intrinsic human drive. It is the drive to power, power over others, superiority over others, usually fueled by money or perhaps fame. This is, of course, related to the drive to be special, to be unique, which is definitely antithetical to homogenization. We need both the security of sameness, especially in large numbers, and the inner feeling of superiority over the homogenized mass. No wonder humanity, having these conflicting basic drives, is a species with a questionable future.

Leverage is power's special tool. Indeed, leverage is another name for power.

↓ Trend → cultural autonomy

Elitism: preservation of uniqueness

DENVER

ECOPSYCH.WP6 November 2, 1995

WHAT IS BEHIND THE TRENDS?

Economists have established what they refer to as economic laws, such as supply and demand, winner take all, etc. At the root of these laws is the assumption of a hypothetical producer, distributor, consumer who represents a fixed norm for human behavior, whom they label, 'economic man'. Without this hypothetical character the laws of economics have neither basis nor validity. [It is similar to the so-called cosmological principle, that the laws of physics are the same throughout the universe as observed in terrestrial laboratories, without which cosmology would be impossible to practice.] But economic man is not only a hypothesis, it is a behavioral paradigm being continually inculcated into the thinking of real humans in order to make the laws of economics work. [Historically in the church we have what is similar to economic man, the paradigm that people are sheep, and must be treated like sheep. The hypothesis is fulfilled again by repetitive inculcation.] This reflects a critical difference between a natural and a social science. In a natural science we must accept the rules of the game as given; in a social science we have partial control of the rules, with emphasis on partial, which renders predictions far less accurate than in natural science. But have the economists copped out by taking 'economic man' as their foundation and not going more deeply into the vicissitudes of human behavior. But that would not be economics, that would be psychology, and that is not our department.

Currently the trends toward homogenization, elitism, and increased leverage at the top run counter to conventional economic laws. But if the psychological bases of economic man's behavior were to be further studied, the mystery might be cleared. Cook and Frank in their book, "Winner Take All", have described some of the economic consequences of the winner take all markets. They have also noted some ot the economic viewpoints of people that lead to the establishment of such markets. But the psychological proclevities underlying the economic viewpoints and behavior require deeper study since the contradictions that are troublesome on an economic level are even more troubling on a psychological level. Elitism and homogenization are contradictory; how can people be pursuing both simultaneously?

We can justly state that some people are sheep all the time and all people are sheep some of the time. Sheep need a shepherd. They need to feel somebody is more powerful that they, and hopefully that the more powerful are beneficient and will care for them. Thus we have the need for gods, real or hypothetical, Olympians who are more powerful and who hopefully look with favor upon us. In an age stripped of the invisible and demanding the visible, the gods have been replaced by political, sports, and entertainment figures. The new olympians are human beings who for some reason or other have attained a higher status. We no longer canonize them as saints, we canonize them as celebrities. To support this need, there are others, still human beings, who like to fill the role of olympian, to play the deity, in one form or another. The contradiction is resolved in recognizing that some are pursuing the comfort of homogenization, while others are pursuing the leverage of elitism. ~~Those~~ Sheep who need an elite will settle for homogenization for themselves, ~~Those who are~~ At the same time the elite recognize the value of homogenization for control of the sheep.

DENVER

NEWSIG01.WP6 November 5, 1995

≤1990#13
1991#56, #57
1993#4
1994#56, #58
1995#87

MORE ON SIGNIFICATION

A definition of information states, "Information is that portion of available data that is meaningful to a particular client or endeavor at a particular time". In accord with this definition what we are here calling **signification** is the first step in the process of extracting information from data. That is, signification is the operation of determining from a context of many available items those items that are significant for a given purpose at a given time. For example, the client could be the TV viewing public, the context could be the totality of news items, and the signification the sub-set of news items important to put on the air. Or the endeavor could be an election, the context the set of candidates running for office, and the signification the candidate(s) to vote for. Signification is seen to be needed whenever the number of items exceeds those fitting the specifications of a particular requirement.

Signification can be specific or quite general. A client may want to know all available items that pertain to a particular category. While some items meeting this requirement may be explicit, there may also be peripheral elements that are germane but not readily identifiable. It is spotting the latter that requires expert signification. There is also general signification, not involving a single client, but involving the public, not involving a particular category, but involving a broad context of items. What goes into the daily news is an example of this type of signification. It is in this area of general signification that we encounter the professional significators. These consist not only of editors, publishers, producers, money lenders, critics, and all who are involved in public relations and advertizing, but also societal norms, peer pressures, and keeping up with the Joneses. These professional significators are all telling us what is important, where to focus our energies, time and dollars. They even tell us what we are supposed to feel, what we should enjoy, what we should dislike. Basically a great many people do not know what they want. They need these professional significators. However, although they are helpful, they are also destructive because they replace and ultimately obliterate our "inner significators". Citizens who do not develop inner significators become incapable of recognizing the choices available, cannot evaluate choices, become easily manipulatable and ultimately are incapable of sustaining a democracy.

In addition to being highly manipulatable, there are other consequences to a society that lacks inner significators. In spite of claims to the contrary, professional signification reduces the availability of choice, substituting micro-choice for real choice. Its general effect is to homogenize society since the number of agendas of the professional significators is far less than the size of the citizenry and the number of values and tastes there would be if each exercised his/her own inner significator. Further, the societal level of aesthetic perception is lowered resulting in a drift toward the lowest levels of taste. Manipulation, homogenization, deterioriation of beauty and values are all part of the price of delegation of signification.

Oral Tradition carries Signification

∴ Lineages [Beyond energy & information]

Ed: lineage transmits realization

How are signification and realization related?

Triage as signification

Movie reviewers & software reviewers are significators of sorts

- e.g. sub-significators

update this

∃ many errors here

TABLE of TIME FOR RESONANCE COMMUNICATION

	t	τ	T
Ω	-100.940471	-120.618445	-61.584592
Pl	-42.071096	-42.071096	-42.071096 ✗
m_e	-22.228710	-0.918814	-64.848499
m_p	-22.228710	-2.550769	-61.584592
H	-17.955040	3.859617	-61.584354
⊕	-0.874431	3.704106	-10.031505
ʘ	1.163843	4.000703	-4.509878
S_w★	-2.715270	-2.715271	-2.715270
α^2★	1.558401	3.695235	-2.715270
S_wG	7.278198	7.278198	7.278198
α^2G	11.551868	13.688703	7.278198
S_wU	17.127170	17.127170	17.127170 ✗
α^2U	21.400840	23.537675	17.127170

all times are in resonance at Pl

$\frac{\oplus}{H} = .7$

$$t = 2\pi R/c \qquad \tau = 2\pi\sqrt{\frac{R^3}{GM}} \qquad T = 2\pi GM/c^3$$

MATRICS

III. TABLE OF T-TIME RATIOS Column/Row

	Universe	★	Planck	baryon	Ω
Universe	1	$kS^{-1/2}$	$kS^{-3/2}$	S^{-2}	S^{-2}
★	$k^{-1}S^{1/2}$	1	S^{-1}	$k^{-1}S^{-3/2}$	$k^{-1}S^{-3/2}$
Planck	$k^{-1}S^{3/2}$	S	1	$k^{-1}S^{-1}$	$k^{-1}S^{-1}$
baryon	S^2	$kS^{3/2}$	kS	1	1
Ω	S^2	$kS^{3/2}$	kS	1	1

$k = \sqrt{(2\pi/\alpha\mu)}$

TIME TABL.WP6

Anyway time is measured (defined)
it is the same for Σ particle

SOME BASIC VALUES

many errors here

	RADIUS	MASS
Ω	-91.261830	-23.776604
Pl	-32.392455	-4.263110 ✗
m_e	-12.550068	-27.040503
m_p	-12.550068	-23.776602
H	-8.276399	-23.776366
⊕	8.804210	27.776483
⊙	10.842484	33.298110
Sw★	6.693371	35.092718
α^2★	11.237041	"
Sw𝔾	16.956839	45.086186
α^2𝔾	21.230509	"
SwU	26.805811	54.935158
α^2U	31.079481	"
S	39.355880	
S^2	78.711760	
c	10.476840 ✗	
G	-7.175705	
$2\pi/c$	-9.678641	
$2\pi/\sqrt{G}$	4.386032	
$2\pi G/c^3$	-37.807988	

U = Universe
𝔾 = Galaxy
★ = Star
w = on Schwarzschild Limit
⊙ = sun, ⊕ = earth
H = Hydrogen atom
m_p = b = baryon
m_e = electron
Pl = Planck
Ω = Omega Particle

S = coulomb to gravity force ratio
c = velocity of light
G = Newton's gravitational constant

I. TABLE OF t-TIME RATIOS Column/Row

	α^2U	SwU	$\alpha^2\bigstar$	Sw$\bigstar$	H	b	Pl	Ω
α^2U	1	α^2	$kS^{-1/2}$	$\alpha^2kS^{-1/2}$	S^{-1}	α^2S^{-1}	$\alpha^2kS^{-3/2}$	α^2S^{-3}
SwU	α^{-2}	1	$\alpha^{-2}kS^{-1/2}$	$kS^{-1/2}$	$\alpha^{-2}S^{-1}$	S^{-1}	$kS^{-3/2}$	S^{-3}
$\alpha^2\bigstar$	$k^{-1}S^{1/2}$	$\alpha^2k^{-1}S^{1/2}$	1	α^2	$k^{-1}S^{-1/2}$	$\alpha^2k^{-1}S^{-1/2}$	α^2S^{-1}	$\alpha^2k^{-1}S^{-5/2}$
Sw$\bigstar$	$\alpha^{-2}k^{-1}S^{1/2}$	$k^{-1}S^{1/2}$	α^{-2}	1	$\alpha^{-2}k^{-1}S^{-1/2}$	$k^{-1}S^{-1/2}$	S^{-1}	$k^{-1}S^{-5/2}$
H	S	α^2S	$kS^{1/2}$	$\alpha^2kS^{1/2}$	1	μ^{-1}	$\alpha^2kS^{-1/2}$	α^2S^{-2}
b	$\alpha^{-2}S$	S	$\alpha^{-2}kS^{1/2}$	$kS^{1/2}$	μ	1	$kS^{-1/2}$	S^{-2}
Pl	$\alpha^{-2}k^{-1}S^{3/2}$	$k^{-1}S^{3/2}$	$\alpha^{-2}S$	S	$\alpha^{-2}k^{-1}S^{1/2}$	$k^{-1}S^{1/2}$	1	$k^{-1}S^{-3/2}$
Ω	$\alpha^{-2}s^3$	s^3	$\alpha^{-2}kS^{5/2}$	$kS^{5/2}$	$\alpha^{-2}S^2$	S^2	$kS^{3/2}$	1

Note: SwU/Pl = $k^{-1}S^{3/2}$ and Pl/Ω = $kS^{3/2}$, i.e. Pl is the mean between U and Ω.

II. TABLE OF τ-TIME RATIOS Column/Row

	α^2U	SwU	$\alpha^2\bigstar$	Sw$\bigstar$	H	b	Pl	Ω
α^2U	1	α^3	$kS^{-1/2}$	$\alpha^3kS^{-1/2}$	$S^{-1/2}$	$\alpha^3S^{-1/2}$	$\alpha^3kS^{-3/2}$	$\alpha^3S^{-7/2}$
SwU	α^{-3}	1	$\alpha^{-3}kS^{-1/2}$	$kS^{-1/2}$	$\alpha^{-3}k^{-1}S^{-1/2}$	$S^{-1/2}$	$kS^{-3/2}$	$S^{-7/2}$
$\alpha^2\bigstar$	$k^{-1}S^{1/2}$	$\alpha^3k^{-1}S^{1/2}$	1	α^3	k^{-1}	α^3k^{-1}	α^3S^{-1}	$\alpha^3k^{-1}S^{-3}$
Sw$\bigstar$	$\alpha^{-3}k^{-1}S^{1/2}$	$k^{-1}S^{1/2}$	α^{-3}	1	$\alpha^{-3}k^{-1}$	k^{-1}	S^{-1}	$k^{-1}S^{-3}$
H	$S^{1/2}$	$\alpha^3kS^{1/2}$	k	α^3k	1	α^3	α^3kS^{-1}	α^3S^{-3}
b	$\alpha^{-3}S^{1/2}$	$S^{1/2}$	$\alpha^{-3}k$	k	α^{-3}	1	kS^{-1}	S^{-3}
Pl	$\alpha^{-3}k^{-1}S^{3/2}$	$k^{-1}S^{3/2}$	$\alpha^{-3}S$	S	$\alpha^{-3}k^{-1}S$	$k^{-1}S$	1	$k^{-1}S^{-2}$
Ω	$\alpha^{-3}s^{7/2}$	$s^{7/2}$	$\alpha^{-3}kS^3$	kS^3	$\alpha^{-3}S^3$	S^3	kS^2	1

Note: $\alpha^2\bigstar/H = k = \sqrt{(2\pi/\alpha\mu)}$

(1)

ECOAPH01.WP6 November 23, 1995

SOME ECONOMIC APHORISMS

1. Transport technology--canals, railroads, trucks, air freight-- has broadened the geographical scope of markets.
p 45

2. As the cost of transportation goes down, there are fewer producers.
p 45

3. To those who have, more will be given, from those who have not, even that which they have will be taken. Matthew
p 35 (an example of positive feedback)

4. A small initial advantage can eventually engender a nearly insurmountable lead.
p 37 (cf Chaos Theory p 34) also see #10
{[This is also a factor in natural selection]

5. Incumbants enjoy advantage.
p 39 (a corollary of #4)

6. There is preference for the familiar (but not too familiar).
p 40 (cr brand loyalties)

7. We tend to make the equations:
ability = earned income = observable consumption
p 42

8. Cognitive limitation on the part of buyers results in the need for consensus.
p 38 (limited mental shelf space)

9. There exist limits on information processing.
p 50 (again limited mental shelf space)
[Therefore the need for signification]

10. {[Initial advantage does not hold if the **context** rules otherwise.
see #4. p 60 [CP/M, Wordstar, ...] The context (IBM) has more clout.

11. If there exist economies of scale, one supplier will in time dominate.
p 32

The above are taken from the book, The Winner Take All Society

ON SYMBOLS

Unlike despotic orthodoxies, a symbol favors independence. Only a symbol can deliver a man from the slavery of words and formulae and allow him to attain to the possibility of thinking freely. It is impossible to avoid the use of symbols if one desires to penetrate into the secrets (mysteries), that is to say, into those truths which can so easily be transformed into monstrous delusions as soon as people attempt to express them in direct language without the help of symbolical allegories. The silence which was imposed on initiates finds its justification in this. Occult secrets require for their understanding an effort of the mind, they can illuminate the mind inwardly, but they cannot serve as a theme for rhetorical arguments. Occult knowledge cannot be transmitted either orally or in writing. It can only be acquired by deep meditation. It is necessary to penetrate deep into oneself in order to discover it. And those who seek it outside themselves are on the wrong path.

P. D. Ouspensky, A New Model of the Universe p 196

OUSPEN"1. DOC 95/11/26

VERGERS1.WP6 December 4, 1995

ON THE VERGE
AND VERGER

Recently I had the opportunity to attend services in two cathedrals, in Denver at St. John's Cathedral and in San Francisco at Grace Cathedral. The services were very impressive especially to one who is more acquainted with village parishes having a total membership of about two dozen. In both cathedrals the services began and ended with stately processions including banners and banner bearers, crosses and crucifers, candles and candelafers, female and male choristers of various pitch persuasions, sopranos, altos, tenors, basses, golden Gospels held high, then more banners, more crosses, more candles, and finally tiers of colorful clerics, and in the case of Grace Cathedral, all terminating with a bishop.

But most impressive of all were those who came first, the leaders of the procession, the vergers, the black robed verge bearers whose demeanor transformed the entire retinue from the present into a procession that must have begun its march sometime in the middle ages. Their bearing brought a sense of timelessness to the service. One felt that kings, queens, princes, and knights were part of an invisible retinue filing past being guided to their thrones by the verger. What magnificence to be part of that eternal procession moving over the centuries ever toward the sanctuary of the Highest, and guided by one who unquestionably knows the way.

But it was not just the confidence exuded through knowing exactly where to go that benighted the verger, it was his consummate mastery of handling the verge that obliterated any dare on the part of anyone to place an impediment or obstacle in his path. I do not know where they find candidates for vergering, but I suspect that no one need apply who has not held at least the rank of major in some regiment such as the Royal Scots or Cameronian Highlanders. Afterwards I was left wondering how a bishop could project the dignity of his office in competition with the commanding presence of the verger. Perhaps that is why they separate them, the verger at the fore and the bishop as far to the rear as possible.