TIME / EVOLUTION

LAWS OF CHANGE

LAWSCHNG.WPD March 9, 2004

THE LAWS OF CHANGE
OVERVIEW

Continually Operating Laws
- The Second Law of Thermodynamics
- The Principle of Plenitude
- The Law of Hardening
- Evolution [diversity]
- Growth [multiplicity]
- Ozbekian's Law

Dialectics: Departure and Return
- Cosmopolitanism | Isolation [Chamberlain and Moulton]
- Polarization | Synthesis [Hegel]
- Action | Option
- Extinction | Radiant
- Packaging | Depackaging [Revolution]

Dialectics: Interactive
- Consolidation \ Fragmentation
- Joining \ Separating
- Homogenization \ Diversification
- Centralization \ Diffusion
- Simulation \ Innovation
- Garberizing \ Discriminating
- Including \ Excluding
- Abstraction \ Generalization

Infrastructure Dyads
- Diachronic / Synchronic
- Recursive / Explicit
- Contiguous / Consistent
- Sequences / Loops [infinite regressions]
- Belong / Control
- Aggregate / Set
- Definition / Macro
- Focus / Diffuse
- Texture / Frequency
- Eigen / Continuous
- Order / Random

Universal Principles
- Universal Uniqueness Principle [everything is a special case]
- You cannot do only one thing
- There is no such thing as a "whole"
- There is no such thing as "truth"

JOYOVR1.P51

WHERE WE START
The Jigsaw Piece

JOURNEY OF THE YEAR

	ASTRONOMICAL ASPECTS	PHYSICAL ASPECTS	PHYSIOLOGICAL ASPECTS	PSYCHOLOGICAL ASPECTS	CULTURAL ASPECTS	NUMERICAL ~~NUMEROLOGICAL~~ ASPECTS
1°Order Effects	Cycles rotational: Day orbital: Year Schuster: Week The Moon	Light/darkness Temperature Seasons Weather Tides	Plants seasonal patterns Crops sowing, harvesting Animals birthing hibernation	Euphoria and depression Activity and passivity Seasonal affective disorder [SAD]	Clocks and Hours Calendars civil ecclesiastic	The Golden Ratio Golden days Celtic quarter days
2°Order Effects	inclination: seasons [eccentricity plus inclination]: equation of time the analemma	(Gravitational) (Solar wind, magnetic effects)		(Astrologically related aspects)	Traditions Celtic Classical Chinese Hebrew Amerindian Christian Modern	CIRCLE OF 5ths
Higher Order Effects	Cycles 25,000 year precessional 40,000 year inclinational 93,000 year eccentricity — Bennett Galactic rotational cycle	Climatic Effects (Ice Ages)		(Jet lags)	Seasons Festivals Rituals	

Re-examining the familiar: "Cross Disciplin" "~~W~~"
Conventionally, this is studied columnwise
J.O.Y. is to study row-wise (or a 2 dimensional study)

Underlying: • TIME
TIME & ETERNITY

• TRANSFORMATION
(Growth & Evolution)

→ • Mystical Cycles

Earliest Sunset Dec 6
Latest Sunrise Jan 6

TIME and CHANGE

Change ⇒ TIME or TIME ⇒ CHANGE

IF ∄ CHANGE, Time does not exist

But two levels of change

a) Motion - change of position ⇒ a certain kind of time

b) Evolution - change of form, size, path which results from collisions due to a)

---

2 Schools

Missing links in evolution

= gaps [punctuated evolution] gaps real ∴ no missing link

Non-contiguity in form

emergence - radiant - difference in rate? or gap

Each species of time may have a constant rate but their rates differ e.g. globular clusters. $f(\rho)$

or rate may be a function of the value of some variable

e.g. $T = \frac{GM}{c^3}$ as M changes, so does T

$\frac{dM}{dt} \longleftrightarrow \frac{dT}{dt}$ [is t some meta-time?]

e.g. $\tau = (G\rho)^{-1/2}$

$\frac{d\tau}{dt} \longleftrightarrow \frac{1}{2} G^{-1/2} \rho^{-3/2}$ $\quad \frac{d\tau}{dt} \longleftrightarrow \frac{d\rho}{dt}$

$$T\tau^2 = t^3$$

Slow Universe ⇔ Fast Universe

Motion communication

action at a distance

non-locality

Traditional experience, time is an inference of CHANGE

What are the species of CHANGE?

Movement, motion, change of position [P-SPACE] t

Growth, Decay, change of size, scale [S-SPACE] rate? T

Evolution, change of form [H-SPACE] ?

?, change in bond, force, trade, communication [B-Space]

e.g. Fall in love engagement ?

alliance

Each has a corresponding species of time.

THE BOOK OF TIME

PERSPECTIVES OF TIME

SPACE-TIME: THE TIME OF THE PHYSICIST
- ON CYCLES AND WAVES
  - FREQUENCY, AMPLITUDE, WAVELENGTH, PHASE
  - COHERENCE (PHASE), COMMENSURATION (PERIOD)
- MINKOWSKI'S SPACE TIME
  - CONTRACTIONS, DILATIONS, AND INVARIANCE
- THE ARROW OF TIME
  - THE SECOND LAW OF THERMODYNAMICS
  - CLADES
  - HOYLE'S "CONE LADDER"
- CHARGE•PARITY•TIME

CHAOS & TIME

BIO-RHYTHMS: THE TIME OF THE BIOLOGIST
- TIME AND LIFE
  - CIRCADIAN AND OTHER RHYTHMS
  - AGEING AND COHERENCE ← S.A.D. SEASONAL AFFECTIVE DISORDER
- CHON, THE UBIQUITOUS ZEITGEBER

JET LAG

PITCH, RHYTHM, AND TIMBRE: THE TIME OF THE MUSICIAN
- PITCH: INVERSE TIME
- RHYTHM: TIME AND FREQUENCY
- TIMBRE: HARMONICS EVEN AND ODD
- THE SPECIES OF SCALES
  - THE CIRCLE OF FIFTHS

SUBJECTIVE TIME: THE TIME OF THE PSYCHOLOGIST
- THE EXPERIENCE OF TIME
- THE PERCEIVED PRESENT: THE WIDTH OF NOW
- DURATION AND INTERVAL: DURING AND UNTIL
- THE PAST AND MEMORY
- THE FUTURE AND PRECOGNITION
- CONTINUITY AND DISCONTINUITY IN TIME
- MARCHING TO THE RIGHT DRUMMER
- BEING ON TIME
- RIFKIN: NATURAL TIME, FACTORY TIME, COMPUTER TIME

SACRED TIME: THE TIME OF THE THEOLOGIAN DIATIME & PERITIME
- SKY TIME AND EARTH TIME
- SECULAR TIME AND LITURGICAL TIME
- THE QUALITY OF TIME
- CYCLICAL AND LINEAR TIME KAIROS and CHRONOS
- TIME AS MYSTERY
- THE FUTURE VS. PARAWORLDS AS THE DEPOSITORY OF HOPE

History or Myth

THE SEVEN TIMES

WHAT IS TIME: THE TIME OF THE PHILOSOPHER
- THE SPECIES OF TIME
  - SUBJECTIVE AND OBJECTIVE TIME
  - LINEAR TIME AND CYCLICAL TIME
    - TEMPORAL RESOLUTION AND THE QUALITY OF TIME
  - THIS MOMENT AND PRIMORDIAL TIME
  - HISTORICAL or SEQUENTIAL TIME AND PRIMORDIAL TIME
  - CONTINUOUS AND DISCRETE TIME
  - MOTION TIME VS DENSITY TIME
- PARAMETERIZATION OF TIME
  - LANGUAGE AND TIME — SLAVONIC PERFECTIVE AND IMPERFECTIVE TENSES & MOODS
  - PAST•PRESENT•FUTURE
  - UNTIL•DURING•AFTERWARDS
  - MANIFEST AND UNMANIFEST - HOPE
  - NOW, DECKER, AND DETERMINATOR
  - SLOW AND FAST UNIVERSES (SYSTEMS)
    - TEMPORAL GROUND AND FIGURE
- MODELS AND THEORIES OF TIME
  - DETERMINISM, PROBABILISM, TELEOLOGY
  - CAUSALISM AND FINALISM
  - PREDICTABILITY AND COMPUTABILITY
    - CHAOS AND CELLULAR AUTOMATA
  - REVERSIBILITY OF TIME
- CONTRIBUTORS
  - HERAKLEIDOS AND PARMENIDES
  - AUGUSTINE
  - KEPLER
    - SECOND LAW TIME AND THIRD LAW TIME
  - GALILEO AND NEWTON
  - MAXWELL: SINGULAR POINTS —— Minkowski: SPACE TIME
  - DUNNE: INFINITE REGRESSIONS
  - MILNE 2 times
  - HINTON
  - OUSPENSKY
  - BENNETT: SUCCESSIVE, ETERNITY, HYPARXIS
  - RIFKIN
- APHORISMS

Trying to explain the sacred character of certain places and certain times with new myths is fruitless

LAWS OF CHANGE

THE SECOND LAW OF THERMODYNAMICS
- The Homogenization Aspect
- The Entropy Aspect

THE PRINCIPLE OF PLENITUDE
- The Occupying Aspect — Imperialism
- The Obstructing Aspect

THE LAW OF HARDENING — Selection becomes the Selector → Narrowing of choice
- The Actualization Aspect
- The Limitation Aspect

THE ACTION-OPTION LAW
- Departure and Return — Apollo + Dionysius
- The Shiva Principle — Order + chaos

GROWTH AND EVOLUTION
- Bio-evolution
- Social-evolution

CAUSALITY, FINALITY, AND MUTUALITY — THE ROLE OF DIALECTICS IN CHANGE
- Necessity and Choice
- Consequences as Cause

DIALECTICS

SYNCHRONICITY + SERENDIPITY

The following is from a book in progress by Bill Davidow

Entangled—Policy Challenges in an Interconnected World

1. Throughout history, transportation and information interconnection have been the source of power and prosperity. Cities grew along rivers and railroad tracks, adjacent to harbors, and at crossroads. The financial centers of London, New York, and Tokyo were communication hubs that had early access to financial information.

In the past 250 years interconnections have grown at unprecedented rates--first as a result of the steam engine and today because of the Internet. Unfortunately, our social institutions have not been able to keep up with the growth of interconnections. As a result, markets have become more volatile and accident prone, nation-states have lost power, it has become difficult if not impossible to control the money supply, and we have become more vulnerable to economic contagions.

Higher levels of interconnectivity will require us to redesign our government and social institutions. I will explain why and answer questions about what must be done.

{[Davidow feels the problem involves degree of interconnectivity

REC EXP. WPD

~~LAWCHAN1.WPD~~

December 4, 2003

TOA RECURSIVE vs. EXPLICIT

THE ~~LAWS OF~~ CHANGE

~~INTRODUCTION~~

Mathematicians use two kinds of formulae in treating sequences and series, *explicit* formulae and *recursion* formulae. An example is the sequence of numbers named Fibonacci:

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ...

It is seen that each number (after the initial 1's) is equal to the sum of the preceding two numbers. This is expressed by the **recursion** formula, $F_n = F_{n-2} + F_{n-1}$. Using this formula, if we know any two successive numbers of the series we can find the next number, the next and so on. But if we are asked what is the 37th number of the series, for example, an **explicit** formula is required, i.e. a formula in which inserting the number 37 will produce the 37th Fibonacci number. In the case of the Fibonacci numbers an explicit formula is:

F_n = The closest integer to $\Phi^n/\sqrt{5}$ where $\Phi = (1 + \sqrt{5})/2$

With regard to change, the above reference to explicit and recursion formulae was made to note, on the one hand a correspondence between a recursion formulae for a sequence and the immediate causes and consequences occurring in processes of change, and on the other hand to note a correspondence between explicit formulae and more general laws of change. Most of our experience has provided us with some knowledge of the details of change, causes and their effects, but we have less knowledge of the overall structure of various sequences of events, their destinations and limits. We can say we know many recursion formulae by observation, but must develop theories to derive the corresponding explicit formulae. [1]

The first general law of change discovered was the second law of thermodynamics.

Laws are derived from repetition, or iteration, or recursion, or regression. 4 classes of laws of change .

Laws of repetition cyclical
Laws of iteration
Laws of recursion
Laws of regression

absolutism relativism
Determinism ..

[1]The role of the initial conditions must be taken into account if a law of change is to give correct details. Explicit formulae must take into account initial conditions, the "As it was in the Beginning" facts.

NOTPASSD.WPD November 17, 2003

ПРОШЛОЕ НЕ ПРОШЛО

THE PAST HAS NOT PASSED

An old Russian proverb. Perhaps more true for Russia than for other countries. Indeed, when a socialist revolution took place in Russia it was more Tsarist than the Tsars.

But every culture is leashed to its past. In the United States, for example, our obsession with separation of church and state, is the same obsession that Henry VIII had with the fiscal and political intrusions of the Pope. The founding fathers, just like Henry, wanted no ecclesiastical intrusion into the realm of political power. Interpretations of what is meant by intrusion vary, but the basic idea was that the *Prince* is to be neither colleague of nor subject to the *Priest*. What is unfortunate is that similar divorcements of *Prince* from *Warrior* and *Prince* from *Merchant* are not also obsessions. The avowed American goal has been that the *Prince* is to be subject to and colleague of the people he governs, and to no one else. But this has never been achieved, and in the 21st century the *Prince* is in bed with not only the *Warrior* and the *Merchant* (read Military Industrial Complex) but with some brands of *Priest* (read Christian Right). Thus while the specifics change, the past has not passed.

While it is not difficult to update the three societal functions, *Prince*, *Warrior*, and *Merchant* to Government, the Military [Pentagon], and the Corporations respectively, the proper updating of the *Priest* is not so clear. Has the priest become Science, the Media, Academia, all three, or what? In the past the Priest was the Guardian of Heritage, Custodian of Records, Dispenser of Knowledge, and Regulator of Rituals.

Beginning with the invention of the printing press, the *Priest* began to lose power. From the 15th through the 19th centuries the pulpit gradually lost its monopoly for the dissemination of information. Although in 1905 T.R. would still call the presidency a "bully pulpit", with national and local newspapers people were no longer dependent on the *Priest*. The 20th century saw a further shift in the structure of power. Control of populations shifted from guns and bayonets to radio and television. Information replaced physical force. The robber barons of the 19th century had power through control of production and transportation. The robber barons of the 21st century control with the media. The media had taken over one of the functions of the *Priest*.

also the priest kept a long range view

Finally, how to we update "The Past has not Passed "? I fear it updates to "The Past does not Pass". The leash will always be there.

LAWS2.WPD May 24, 2004

SOME LAWS GOVERNING THE NATURAL ORDER

Traditional thinking, both Eastern and Western has been dyadic, based on such dichotomies as yin/yang, masculine/feminine, good-evil, ...us/them, with us/against us. While dyadic thinking arises properly from the fact that nature is basically structured around symmetries and their corresponding conservation laws, about two centuries ago we became aware of a second category of natural laws: Laws of Change, examples being bio-evolution and the second law of thermodynamics. Then, a third category of laws–dialectics, governing the interactions between contraries and conflicting principles. And a fourth category governing the interactions between the synchronic and diachronic, between the ephemeral and long range, between the temporal and eternal.

FIRST CATEGORY LAWS: THE SYMMETRY LAWS
- Conservation of energy
- Conservation of mass

SECOND CATEGORY LAWS: THE LAWS OF CHANGE
- The Second Law of Thermodynamics
  - Homogenization aspect, Disordering aspect
- The Principle of Plenitude
  - Occupying aspect, Obstructing aspect
- The Law of Hardening
  - Actualization aspect, Convergence aspect
- Evolution
  - Diversity aspect, Complexity aspect
- Growth
  - Multiplicity aspect, Size aspect

DIALECTICS
- Departure and Return [Chamberlain and Moulton]
- Thesis/ Antithesis | Synthesis [Hegel] [polarization]
- Action | Option
- Extinction | Radiant
- Fragmentation | Emergence

Doing | Being

DIACHRONIC | SYNCHRONIC INTERACTIONS
- Packaging | Depackaging [revolution]
- Can demands DO [Ozbekian]
- Memes and Genes
- Archetypes | Games
- Power | Survival

LAWSCHNG.WPD March 9, 2004

THE LAWS OF CHANGE
OVERVIEW

Continuous Laws
- The Second Law of Thermodynamics — Only valid with MAXWELL-BOLTZMAN Statistics
- The Principle of Plenitude
- The Law of Hardening
- Evolution [diversity]
- Growth [multiplicity]
- Ozbekian's Law
- LAW OF EXTINCTION

Repitition is a form of continuity - get quote

Dialectics: Departure and Return
- Cosmopolitanism | Isolation [Chamberlain and Moulton]
- Polarization | Synthesis [Hegel]
- Action | Option
- Extinction | Radiant
- Packaging | Depackaging [Revolution]
- Materialization | Ethereal ization

∃? Power \ Survival Law

A plant chooses to extend a branch or create a fork → 2 or more branches

Dialectics: Interactive
- Consolidation \ Fragmentation
- Joining \ Separating
- Homogenization \ Diversification
- Centralization \ Diffusion
- Simulation \ Innovation
- Garberizing \ Discriminating
- Including \ Excluding
- Abstraction \ Generalization

** homogenization | diversity ~ continuous ~ forks ~ Entirety of set some

Infrastructure Dyads
- Diachronic / Synchronic
- Recursive / Explicit
- Contiguous / Consistent
- Sequences / Loops [infinite regressions]
- Belong / Control
- Aggregate / Set
- Definition / Macro
- Focus / Diffuse
- Texture / Frequency
- Eigen / Continuous
- Order / Random
- Choice / Security [Determinism]

Consilience// absilience

DISCRETE
EIGEN POINTS
SINGULAR POINTS

Universal Principles
- Universal Uniqueness Principle [everything is a special case]
- You cannot do only one thing
- There is no such thing as a "whole"
- There is no such thing as "truth"

SUPPLEMENTAL NOTES 2004 #18

APPROACHES
- ADMA
- TDMA
- CDMA
- FDMA

GOG: ZOOMING
JUXTAPOSING

STRUCTURALISM:
SIMILARITIES IN THE DIFFERENCES

DIFFERENCES IN THE SIMILARITIES

$E \cdot T > t_h$

$Mv^2 \longleftrightarrow mc^2$

Levels of change of WAR, 4 Generations
- Break the rules for 1 game
- Change the rules of the game
- New Game

mutation — Synchronic

Diachronic — No win or lose – win = game keeps playing i.e. survival

Change definition of win of success

Zero Sum

...

with constant rules
repeat the same play over and over → skill ↑
rules change – to specialized to survive
e.g. Game of War
Terrorism

NOTE37.WPD December 8, 2004

SPECIES

Species of Laws:
- Laws of aggregation
- Laws of change
- Laws to stability
- Laws to diversity
- Laws to convergence
- Laws to fragmentation
- Laws to homogenization
- Laws to consolidation
- Laws to emergence
- Laws to extinction

Species of Designs:
- Design for product
- Design for goal
- Design for purpose
- Design for diversity
- Design for process
- Design for no goal

Designs for optimizing:
- process
- product
- innovation
- diversity

Species of Searches:
- For the Grail
- For a known (retrieval)
- For a member of a class
- For a class
- For ? Search for searching's sake
- For what is known to exist
- For what may exist
- For what should exist

FOURGATE.WPD October 12, 2004

FOUR GATES TO UNDERSTANDING THE COSMOS

GATE I THE LAWS OF SYMMETRY
These are the laws that establish and maintain equilibrium and balance
These are the unchanging Parmenidean Principles
These are conservation principles such as the conservation of energy.

GATE II THE LAWS OF AGGREGATION
These are the laws governing modules and their structures
The species of organizations, and principles of organizing
These are modularization principles such as hierarchy

Avogadro #

GATE III THE LAWS OF CHANGE
These are the laws governing growth and decay, evolution and emergence
These are such principles as the maximization of diversity and openness
These are diachronic principles such as the second law of thermodynamics

GATE IV THE DIALECTICAL LAWS
These are the laws that govern the interactions between the other three classes
These are species of bridges between time and space
These are oscillatory principles such as departure and return

1° What is change relative to?

Change & persistence

LAWCHAN1.WPD December 4, 2003

THE LAWS OF CHANGE

INTRODUCTION

Before discussing Laws of change, a brief mathematical metaphor

Mathematicians use two kinds of formulae in treating sequences and series, *explicit* formulae and *recursion* formulae. An example is the sequence of numbers named Fibonacci:

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It is seen that each number (after the initial 1's) is equal to the sum of the preceding two numbers. This is expressed by the **recursion** formula, $F_n = F_{n-2} + F_{n-1}$. Using this formula, if we know any two successive numbers of the series we can find the next number, the next and so on. But if we are asked what is the 37th number of the series, for example, an **explicit** formula is required, i.e. a formula in which inserting the number 37 will produce the 37th Fibonacci number. In the case of the Fibonacci numbers an explicit formula is:

F_n = The closest integer to $\Phi^n/\sqrt{5}$ where $\Phi = (1+\sqrt{5})/2$, $F_n = \frac{1}{\sqrt{5}}\left[\left(\frac{1+\sqrt{5}}{2}\right)^n - \left(\frac{1-\sqrt{5}}{2}\right)^n\right]$

With regard to change, the above reference to explicit and recursion formulae was made to note, on the one hand a correspondence between a recursion formulae for a sequence and the immediate causes and consequences occurring in processes of change, and on the other hand to note a correspondence between explicit formulae and more general laws of change. Most of our experience has provided us with some knowledge of the details of change, causes and their associated effects, but we have less knowledge of the overall structure of various sequences of events, their destinations and limits. We can say we know many recursion formulae ~~by observation~~, but must have yet ~~develop theories~~ to derive the corresponding explicit formulae. [1]

The first general law of change discovered was the second law of thermodynamics.

Laws are derived from repetition, or iteration, or recursion, or regression. 4 classes of laws of change .

Laws of repetition cyclical

Laws of iteration

Laws of recursion

Laws of regression

Metaphor

By looking at the recursion formulae, we get the mistaken idea that changing a number or two gives us control over the future. e.g.

8 13 21 ...

change 21 to zero

8 13 0 13 13 26 39 ...

Oh no change 39 to zero

13 26 0 26 26 52 ...

To preserve the status quo

But the explicit formula will put An and n together again in their proper relation

[1] The role of the initial conditions must be taken into account if a law of change is to give correct details. Explicit formulae must take into account initial conditions, the "As it was in the Beginning" facts.

SEED0401.WPD March 11, 2004

SEEDS OF THE DAY

Infrastructure for the Laws of Change

1) Brahma's Theme: Realization of all possible variations contained in the Theme. The theme itself is unknowable, but an understandable implication of the Theme is the maximization of diversity.
2) The imperative of diversity leads to many species and sub-species.
3) These diverse species seek to survive, though that is not an essential part of the Theme Their realization, not their survival, is what is important to Brahma. But survival is permitted so long as such survival does not interfere with the realization of further diversity.
4) The species themselves are of three kinds.
   a) Those not concerned with survival, but with the understanding and fulfilling of Brahma's Theme
   b) Those concerned with survival, but seek survival by belonging to and harmonizing with the aggregate of realized species. [e.g. ecological complexes]
   c) Those concerned with survival and seeking it by controlling the aggregate. This species has learned that the path to control is through homogenization. It therefore seeks its survival through the conversion of that which is different to its own likeness. [cf. cancer cells] This action in turn violates the goal of Brahma's Theme. The result is the extinction of all species with intent to control.[1]

The Impossibility of Socialism

There is fear in many quarters of the doctrine of socialism, whether of the Marxist variety or the Gospel variety. But fears that socialism will take over are ungrounded. Socialism is contrary to human nature. Humans are too self, greed, and power oriented to ever willingly participate in a socialist society. Experiments with introducing socialist ideas have always resulted in their having to be enforced on people. [The massacre of millions of kulaks in the USSR, murderous oppression of dissent in China, Cuba, Haiti, etc.] Such policies as universal health care, social security, etc, while labeled socialistic are really based on the populace' desire for a cut of the cake. That is, these policies are not extracted out of the Gospel teachings of selfless sharing, but out of satisfying everyone's personal greed. The capitalist enshrinement of greed is humanly natural. But for any policy based on greed to survive, it paradoxically must be allowed some degree of "socialistic" distribution. When the greed of the few prevails, [Winner take all Capitalism], the greed of the many rises in revolution. Such revolutions are mislabeled Socialism or Communism.

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[1]The species, homo sapiens, is of this last category, but it has some insight into the destiny of extinction unless it corrects itself. This has led to humans holding the line at "dyadic diversity", which is the last stand against complete homogenization. Dyadic diversity is manifested in the human psyche, human logic, human politics, human games, etc. It is humanity's only remaining bulwark against its urge to power, dominance and control, the path to homogenization and extinction.

Tree of good and evil

contiguity - constancy
CONCON

EVOSTEP.WPD January 5, 2004

THE DISCRETENESS OF CHANGE

eigen moments

While change may not be discreet, it appears to be discrete. Moments of change are interspersed between periods of stasis. For example, we age in spurts. Just when we become used to our current restrictions, we get a new set. The same culturally, just when we stabilize our comings and goings, some innovation pulls the rug from under us. This also happens in both science and in religion. When scientists begin to have it figured out, close to a theory of everything, along comes a new discovery, and it's back to the drawing boards. Over millennia the same happens to religions. Every entrenched orthodoxy knows that new prophets with new theophanies are a repeating occurrence (and menace).[1] Why does this oscillatory process of pause and change occur? Should there not be a Parmenidian changelessness or a Heracleitian ever flowing river? Is it to give new situations time for testing? Or is it that we feel secure in the old and fear the new?

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

Apollo & Dionysius

Elohim Yaweh

Not only the Greeks, but other cultures refer mythically or otherwise to paradigmatic changes. Judaism teaches there will be a new future brought by a messiah who is yet to come. Christians believe in a second coming of Christ. Buddhism tells us of Maitreya, the Buddha yet to come. And Hinduism goes even further with the concept of gods having many avatars. In the Bagavad Gita, Krishna tells Arjuna, "Whenever there is the need, I make for myself a body and return to earth." Native Americans believed in successive "Suns", or epochs that involved major transformations in the nature of being.[2] In each view there are successive transformations resulting from a new revelation, a new theophany, or a new paradigm.

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

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

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

GUP1.wpd **August 25, 1998**

The Second Law of Thermodynamics operates in two modes:

Mode I:
The Homogenization Mode.

Homogenization forces are those that tend to bring the range of values of a parameter to a single value. Gravity attempts to bring the positions of masses to a single point. The second law of thermodynamics attempts to bring temperature throughout the system to one value. Further, when a parameter contains only one value, then it ceases to be a parameter. Thus if homogenization succeeds in reducing all values to the same value it then effects the elimination of a parameter. If all parameters are eliminated, that is total sameness prevails, then extinctions results. Ultimate homogenization is the equivalent of non-existence, a principle recognized by both Pythagoras in saying that ONE does not exist, and by Eddington in saying that uniform sameness is the philosophical equivalent of non-existence..

Mode II:
The Fragmentation Mode:

Fragmentation forces are those that lead to decay and the destruction of complexity and order. The second law of thermodynamics holds that entropy or disorder must in the large always increase. Fragmentation (expansion in B-SPACE), scattering (expansion in P-SPACE), diversification (expansion in H-SPACE) all represent an increase in disorder. Diversification effects an increase in disorder through the increase in difficulty of communication as elements become more diverse, thus inhibiting the emergence of complexity.

It seems paradoxical that the destruction of order is achieved both through homogenization and through diversification. It is counter intuitive to think of uniformity as disorder. However, the second law in stating increase of entropy is simultaneously stating decrease of information. and the amount of information implicit in a uniform ordering may be less that in a more diverse ordering. On the other hand as diversification appears to involve more information, what is the second law up to? In this case the second law is operating in an inhibitory mode by reducing the likelihood of the building of complexity which would be a definite increase in information.

The ultimate definition of homogenization is the destruction of uniqueness. Thus both the increase of order and the increase of disorder can result in loss of uniqueness. We may think of there being Yin homogenization, scattering to one condition and Yang homogenization, focusing or gathering to one condition. Gravity is a Yang homogenization, decay is a Yin homogenization.

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.

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.
>
> 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.

cf. Ozbekian's Law

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.

BRLAWS.WPD

PRINCIPLE OF PLENITUDE AND LAW OF HARDENING

NOTES: The two Principles of Plenitude are 1) Lovejoy's "filling of every niche, and 2)the 'cancer cell' motivation to convert the whole into its likeness by proliferation and modifying the contextual environment so that it is unfavorable to competitors. 4-fold parallelism is 'checks and balances' between parts rather than containment.

FROM 1997 BRAHMA02.WP6 JUNE 25, 1997 #42

We begin with a set of experiences, say those that are permitted by our biological structure. Soon some of these are emphasized (usually those with a large repetition rate) which results in the negation of others. This is like a rut in the side of a hill. The future flow of water will choose these existing ruts and develop them into gorges. Which is to say that whatever is selected operates through the Principle of Plenitude, confirming itself and blocking other choices. or as the Law of Hardening puts it, whenever information concerning a particular area is extracted this precludes information being extracted from other areas. That is, SELECTION CREATES INHIBITORS, which is to say that selection destroys access to that which is not selected. This process results in an ever narrowing and increasingly static world.

We may paraphrase the Law of Hardening: ACTUALIZATION REDUCES POTENTIAL, this not only in the sense of fulfilling potential, but in actually reducing the remaining potential. Ultimately when actualization through successive selections has completely exhausted potential, an extinction occurs. The inhibitors are destroyed and a new potential becomes available. With the slate wiped clean, a new emergence can occur. This is an iterative process: Emergence, Selection, Actualization, Extinction. Thus to keep the world from ossifying, the circumvention of the law of hardening involves the necessity of extinctions, mortality, and death. Something existing must be sacrificed in order that something not yet existing can be born,

WITHOUT AN EXTINCTION THERE CAN BE NO RADIANT. [cf Rubik's CUBE]

FROM EMERG01.WP6 MAY 1, 1997 #22

The old adage, seeing is believing governs the epistemological zone where concepts are open ended, and everything perceived contributes to the formation of the concept 'catalog'. If something is not in the catalog, it can be added provided the catalog can subsume it. But the "Law of Hardening" says that it will become increasingly difficult to add items as their number mounts. In time things perceived that have no alloted conceptual space will not be granted admission. We become restricted to the

epistemological zone where the adage, "Believing is seeing" dominates. What is not believed, i.e. not in the catalog, will not be seen.

FROM PERCON01.WP6 MAY 12, 1997 #29

1997 #22,#29,#33,#42,#69,#92

The principle of plenitude as applied to organisms has two aspects:

> Every organism tends to proliferate itself as extensively as possible by 1) unlimited reproduction of itself, and 2) modification of the environment so as to render it more favorable to itself and less favorable to competitive species.

This statement of the principle of plenitude seems to be of more general applicability than just to living organisms. There is evidence that interstellar molecules also practice the principle of plenitude by their absorbing and scattering light of certain wavelengths thereby enhancing their own being and penalizing molecules that differ.

A generalized version of the principle of plenitude would state that **structures tend to impose their own particular organization on the cosmos.** This by self-replication, destruction of the competition, or any other means. By cosmos is meant here any environment or context in which the structure is imbedded.

FROM PRNPLEN1.P51 MAY 25 1991 #75

PLENI2D2.P51 July 20, 1991 #86

There are two strategies for survival.

The first is that of the principle of plenitude, viz, through proliferation of numbers and environmental manipulation. This is the approach from the species level point of view. The second strategy is to find and fill some indispensable niche in the ecology. This approach is from the ecological level point of view, in which the species thinks of itself, not as a competitor, but as an essential organ in the ecological ~~organism~~ complex.

1991 #75,#86 1993 #39 1995 #43,#85 1999 #45

On reexamining the triad: Automate-Emigrate-Evaporate we find that a fourth alternative has been overlooked. This is **stagnate**. What a dirty word! It repels us more than evaporate-extinction. Grow or die is one of our deepest imperatives. To live in balance, to abandon the Principle of Plenitude, the aspirations of the cancer cell, is of utmost repugnance 93#39

Aplenitude

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.
95#85

Those not selected ? Year # 1999 #45

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

It is the responsibility of those rejected, those scorned, those disavowed, and those betrayed not to seek to destroy that which exists, but to seek and establish alternatives that will co-exist in symbiosis and harmony. If the agenda of the Principle of Plenitude with its adherents cannot fit into such a ensemble of diverse agendas, then according to workings of their own agenda they become extinct.
1999#45

LAWS Aplenitude - ~ cancer cell

PRNPLEN1.P51 DISK:GST May 25, 1991

The principle of plenitude as applied to species or organisms has two aspects:

> Every organism tends to proliferate itself as extensively as possible by 1) unlimited reproduction of itself, and 2) modification of the environment so as to be more favorable to itself and less favorable to competitive species.

3) Niche filling

This statement of the principle of plenitude seems to be of more general applicability than just to living organisms. There is evidence that interstellar molecules also practice the principle of plenitude by their absorbing and scattering light of certain wavelengths thereby enhancing their own being and penalizing molecules that differ.

A generalized version of the principle of plenitude would state that **structures tend to impose their own particular organization on the cosmos.** This by self-replication, destruction of the competition, or any other means. By cosmos is meant here any environment or context in which the structure is imbedded.

. . . . . .

Note: Edward R. Harrison uses the term 'principle of plenitude' in a totally different manner. In his book, Cosmology, The Science of the Universe, he describes the principle of plenitude as follows:

> In its simplest form the principle of plenitude states that a beneficent Creator has given mankind for its own use an Earth of unlimited bounty. The Earth and the other parts of the universe necessarily display every possible form of reality in unlimited and inexhaustible profusion. (p18)

Harrison takes this definition of the principle of plenitude from Lovejoy, (The Great Chain of Being, 1936). Lovejoy writes,

> "Not so very long ago the world seemed almost infinite in its ability to provide for man's needs, and limitless as a receptacle for man's waste products. Those with an inclination to escape from worn-out farms or the clutter of urban life could always move out into a fresh, unspoiled environment. There were virgin forests, rich lodes waiting to be discovered, frontiers to push back, and large blank regions marked unexplored on the map... it has, so far as I know, never been distinguished by an appropriate name, and for want of this, its identity in varying contexts and in different phrasings seems often to have escaped recognition by historians. I shall call it the principle of plenitude."

This definition of the principle of plenitude is about the erroneous belief in the unlimited and inexhaustible nature of the Earth which derives from belief in the omnipotence of the Creator and his turning the Earth over to mankind.

See also: Material on the Principle of Plenitude in the Growth Curve Notebook

LAWS

INITRESP.P51 DISK:ESSAYS1 May 3, 1991

INITIATION AND RESPONSE

The vast majority of all human activity is response activity. Not only response to the need for food, shelter, and other economic necessities, but response to the situations created by our earlier response activities. We thus live in a world directed by the requirements of the present and the past, in a social order as deterministic as the natural order described by science.

Also see Metropolitan Anthony p. 38

The pressure for responding varies, but in general behaves like entropy, it continually increases. Furthermore, as the time to respond shrinks, the energy required for response escalates. And after a certain short-time high-energy level is reached, the situation is labeled a crisis. Today we are having to respond to more and more crises.

~ INTEREST ON NATIONAL DEBT

Both individuals and institutions are living almost completely in the response mode. Gurdieff pointed out that most humans are asleep except for a few moments spread throughout their lives, which is to say that our activities are all response activities except for those rare seconds in our lives when we do launch an initiative.

Most institutions after an early phase of initiation quickly relapse into the response mode. Size has an important role to play in this. After an institution reaches a certain size it becomes almost impossible for it to initiate anything. The Church long ago and many universities today are moving into the response mode. We are currently seeing this happen even to such traditional initiators as IBM, who are now depending on market research instead of creating new markets. (Market research is the prime tool and symbol of response orientation.) Most governments have long been in the response mode and many are now operating only in the crisis mode.

eg G.M.

leadership by response-polls

Innovation is threatening to those who dwell in the response mode. And after years in the response mode, it becomes a way of life, it is the safe status quo. Consequently, one of the most important responses today has become the response to those initiatives that threaten the status quo. This is usually a lost cause before it begins as has been demonstrated by the labor unions and will prove so for the oil companies. (Even war as surrogate for an energy policy will not work for long.) But there is one group that has found a successful way to preserve its status quo. This is the Pentagon. They have learned to get out of the response mode and take initiatives to preserve the status quo.

The future is shaped by the interplay of initiatives and the inertia of response-determinism. The recent decision to give Lockheed 100 billion dollars to develop a fighter plane for the 21st century has already gone a long way toward shaping the 21st century. The pentagon, through its thinktanks, has learned how to shape the future to accord with its interests and the rest of us are locked into the response mode.

In the world today, the only initiators are Japanese industrialists and the Pentagon. Their actions force the rest of us more into the response mode.

Perhaps, there is less and less room for initiative, and choice, and in time the system will become totally deterministic.

DEPWDRL.P51 DISK:THEO August 26, 1991

DEPOSITS AND WITHDRAWALS

All human activities result in either a deposit or a withdrawal from one or more of three great bank accounts. A physical account, a cultural account, and a spiritual account. However, every transaction, withdrawal or deposit, involves a withdrawal. A deposit therefore must deposit more than it withdraws. (2nd Law)

. . . . . .

Deposits:

The sources of funds for deposit are primarily what we mine from two basic lodes: Nature and Our Inner Selves. However, some funds for deposits are gifts, gifts from outside.

Deposits may consist of scientific laws and facts; great works of art, literature, poetry, music; spiritual insights and truths, values and meta values...

The miners who make deposits:

The miners of nature: scientists, artists...

The miners of the inner: mystics, psychologists...

Many mine both lodes: musicians, philosophers, creators of beauty...

Basic research is a deposit, applied research is mostly a withdrawal, but may lead to some redeposit. Celebrations are almost in balance but their deposit is at most equal to their withdrawal.

The Crucifixion was a great deposit to humanity's spiritual account.

Deposits are characterized by sacrifice and risk.
You are not making a deposit unless it is a sacrifice.
You are not making a deposit unless you are risking.

. . . . . .

Wealth:

Our Wealth consists of what is on balance in the accounts and on our access to it. Wealth is thus our options.

. . . . . .

Withdrawals:

The three accounts are shared among all humans, but there are those who seek control of withdrawals. Control of physical withdrawals is the easiest, of cultural withdrawals difficult, and of spiritual withdrawals almost impossible.

Applications are withdrawals. Sharing and comforting are mostly withdrawals. Fighting is a heavy withdrawal, Secrecy is a withdrawal

Withdrawals are characterized by irreversibility and narrowing of options.
You are making a withdrawal when you do something that is irreversible.
You are making a withdrawal when you reduce availability of the funds.

cf. Principle of Plenitude

cf essay on beyond justice & fairness

TRANSJUST.P51 02/10/93

LANS

PLENI2D2.P51 DISK:SCRAPS → GST July 20, 1991

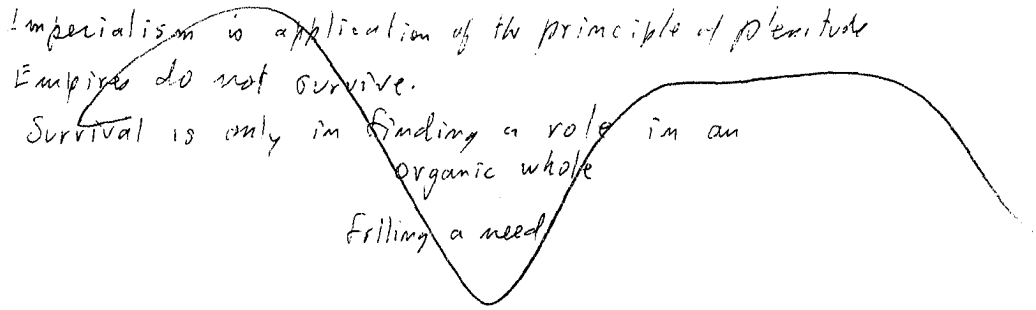
SURVIVAL BEYOND PLENITUDE

There are two strategies for survival. The first is that of the principle of plenitude, viz, through proliferation of numbers and environmental manipulation. This is the approach from the species level point of view. The second strategy is to find and fill some indispensable niche in the ecology. This approach is from the ecological level point of view, in which the species thinks of itself, not as a competitor, but as an essential organ in the ecological organism.

There are examples of both approaches in human history. Most civilizations and cultures, and frequently religions, have approached survival per the principle of plenitude, counting on numbers and environmental control (e.g. of certain resources) for survival. The Jews are an exception to this, having through their doctrine of "the Chosen" a prescribed niche to fill. The Jews could not have survived as a culture had they relied on the principle of plenitude. The captivity and diaspora would have obliterated them. It is in the filling of a niche that their survival has been assured. However, this niche has not always been the same. The original commission for the Jewish people was for them to be the custodians of God's communications with earth. They were to be the priests for all mankind, since they alone were in communication with the true God. With the spread of Christianity, this role was challenged. Though it was not abandoned, it was supplemented. Later the Jews became the money lenders and the bankers since other religionists eschewed interest giving and taking. This niche led to another, since creditors (of all sorts) as well as self-proclaimed elites are generally disliked, the Jews began to fill the niche of 'scapegoats'. This is an important global niche. There must always be someone to blame for what is wrong in the world, and the Jews accepted the charge since it gave them the cohesiveness and enduringness which derive from persecution. Antisemitism has proved a great force for their survival. In addition, the niche of scapegoat is not one for which others are likely to compete, it is rarely sought. The Jews have thus found a key for indefinite survival. Perhaps the realization of this by certain frustrated antisemitic groups led to the idea that the 'ultimate solution' was only to be found in genocide, hence the holocaust.

But there is great wisdom here. Whatever the niche, the Jews may have been the first to approach the cultural world on the non-competitive higher organic level of niche filling. (The natural world, in distinction, is filled with examples of symbiosis and niche filling.) It is paradoxical, however, that the Jews among themselves are voraciously competitive. A second cultural example may be found in the Swiss, who have found for themselves an economic niche though living in a region largely devoid of natural resources. The key to the future is in organism. Become an essential organ in the ecological organism. Forget the principle of plenitude.

Imperialism is application of the principle of plenitude
Empires do not survive.
Survival is only in finding a role in an
organic whole
Filling a need



DIALECTICS

ETHRMAT1.P51 DISK:THEO May 2, 1991

SOME NOTES: MYSTERY PLAY DISCUSSION GROUP

November 27, 1976

See also Metalog1.P51 #55

The idea of incarnation involves materialization or the introduction into the physical world of a material manifestation having a set of physical attributes, which takes its origin in activities on the spiritual level.

The idea of etherialization involves the introduction into the spirit world of a set of spiritual properties which take their origin in activities in the physical world. or for spiritual read mental

These processes are duals:

Materialization
Incarnation, spirit into matter

Etherialization, matter into spirit
Transubstantiation

from Mumford?

Both are vertical operations

How are the processes of incarnation and etherialization effected?

The example given (p129) of the painter who incarnates his subject in his painting, in the sense of capturing the spiritual essences in the character of the subject, does this through the etherialization of color. The color has in some sense acquired other than its purely material properties. One aspect of this etherialization of color is in the painter's development of the knowledge of the nature of colors. Such knowledge is a spirit essence etherialized from the matter world. In this case incarnation is achieved through etherialization. Something has gone from the matter world to the spirit world (knowledge of the properties of color) in order that something else (the characterization in the portrait) could go from the spirit world into the matter world. Incarnation and etherialization are thus both parts of a single exchange process that takes place between two worlds.

Another example is that of the Mass, in which the bread and wine are etherialized or "transubstantiated" in order that the Christ may become incarnate in the communicants.

Christmas--the Great Incarnation--only became possible after centuries of the Law and the Prophets, through "Messianic Transubstantiations", the sufferings and cries to God of a people etherialized into the spirit world that the Christ might be incarnated. The Chosen were chosen to make possible this great materialization from the world of spirit.

In a converse example, that of the Transfiguration, an exchange is also seen to be taking place. Jesus went up into the mountain with three disciples who beheld a miraculous transforming or transfiguration of his physical body into spiritual essence, an etherialization or transubstantiation. But accompanying this the spirit essences of Moses and Elijah, became manifest in the material world--an incarnation. Again an exchange takes place between the two worlds. From the point of view of this world, the primary part of the exchange in the case of Christmas was incarnation, and in the case of the transfiguration it was etherialization. From the viewpoint of the spirit world the primaries may be reversed. We accordingly may surmise that transfers between the worlds of matter and of spirit are always in the forms of exchanges. Incarnation must be enabled by etherialization and etherialization cannot be effected without there also being incarnation. (This has a certain parallel in the physical law of conservation of matter/energy.)

In further development of this theme it was proposed that the details of many "purely" physical processes which have thus far defied explanation may be unresolved because the processes are not solely physical but really involve an etherialization - materialization exchange. That is, there must be brought into the hypothesis other forms of structure and process than those involving only the presently recognized energy and force forms. Alan Howard reported on work by Konig on digestion in which matter/mass entirely disappears prior to the emergence of new tissue in the body, quite possibly an example whose explanation might be edited by hypotheses based on a materialization/ etherialization exchange. The same may be true for certain types of chemical and nuclear reactions and for the processes of cellular differentiation and specialization which are basic to all morphogenesis in bio-evolution.

e.g. healing

eg information

Another example of the incarnation/transubstantiation exchange is that involved in art and science. The scientist is concerned with extracting knowledge from the properties of things, i.e. creation of a non-material essence from manipulation of material essences--an etherialization process. The artist, on the other hand, is concerned with creating material forms that will contain his images and concepts--an incarnation process. But each must make exchanges in order to effect his task.

Exchange also involves the attribute of quality. A degenerate, anti-aesthetic art seems to accompany a positivistic, mechanistic science. Which is cause and which effect is uncertain, but exchange is not bound by causality. The question is, with what spirit world is this destructive exchange taking place.

LAWS

E

2 kinds of category crisis 12
The first occurs within Aristotelean categories (T, F) when I am item which is neither T nor F or both T and F

The second type of category crisis occurs when two dyads compete?? Am I pro-union, pro-slavery Dou pro-secession, pro-slaver Dau pro-union, anti-slaver Linc pro-secession, anti-slaver L.

CATEGORY CRISIS
and the
CROSS DIALECTIC

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

Type 2 category crisis is called Kuo cross-dialect

HALF-BREEDS TRANSSEXUAL
ANGLO-INDIANS
EVANGELISM / HINDU

NOTES ON THE CROSS DIALECTIC:

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

CAN BREAK DOWN AN ENTRENCHED INSTITUTIO WITH A DOMINANT DYAD SHIFT

EXAMPLES OF THE CROSS DIALECTIC:

Wittenberg 1517
de Revolutionibus 15

COPERNICUS BROUGHT AN END TO THE PROTESTANT/CATHOLIC STRIFE BOTH WERE SEEN TO BE WRONG

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

THE DOMINANT DYAD BECAME INTELLECTUAL INSTEAD OF RELIGIOUS

The Civil War in the United States
Slavery/Abolition//Union/Secession

The slavery dyad was dissolved when South Carolina injected the secession dyad - the undoing of slavery

Lincoln's genius was in converting the two dyads into one, equating union with abolition and secession with slavery.

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

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

Red & White see 1994-36

1996: PAT BUCHANAN: POPULISM + CAPITALISM

- The 1992 U.S. Election

Republicans/Democrats//Choice/Life

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

- An example from physics

here/there ontology//everywhere/nowhere ontology

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

SOME POSSIBLE FUTURE EXAMPLES:

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

CHARISMATICS PROTESTANT/CATHOLIC

- THE THOMAS SUPREME COURT HEARINGS

BLACK/WHITE//MALE/FEMALE

also CONSERVATIVE/LIBERAL

LIFE/CHOICE

SEVERAL DYAD SHIFTS

1996 Presidential Election

Past - Future

Choice - Life

Budget - Care

Elian as cross dialectic 1999 -2000

THEY ORD LAWS

RECORD01.W52 DISK: February 28, 1994

On Records

In the Tibetan Book of the Dead reference is made to five Dyanni Buddhas or Tathagatas. These are neither persons nor gods but represent processes having to do with creation, life and death. Necessary in the process of creation is a self-referential 'sealing' of the act. The first Buddha pours information into a form, the second Buddha enables the self-referencing of the form. The basic idea is that without self-referencing there is no existence. This seems strange on first inspection, but as we look more carefully at existence, we begin to perceive the validity of the idea.

In the book of Genesis, whenever God created something He then examined it and sealed it with "God saw it was good", an act of self-referencing. In the twentieth century we have come to see that without certain 'papers' that self-reference us, we are nothing. Birth certificates, social security numbers, green cards, etc. are essential to our having societal existence. It is a fact that records, or some other form of second self are essential to existence. When the great library at Alexandria was destroyed, the ancient world which it recorded ceased to exist.

During the period of heightened fear of nuclear war during the cold war, underground caverns were prepared in which banks, investment firms, insurance companies, etc could store their records. If a nuclear war destroyed the records, even if something was left of life and property, the social order would be dead. Who owned what, who owed what, etc if destroyed would wipe out the linkages that hold a western society together.

When we destroy the records we destroy existence. What is clear to us in a societal sense is held by the Book of the Dead to be true in a basic ontological sense. Without both the form and its self-referential echo (e.g. a record) being intact, an entity does not exist.

Any society, culture, group, individual can be destroyed by destroying its records. This is because all entities are composed of monads (or nodes) and links. It the links are destroyed, the entity is destroyed, and unless the monads find new linkages they, being all alike, cease to exist by Eddington's ontological principle: "Uniform sameness is indistinguishable from non existence."

Evol Laws

EVOLENC1.W52 DISK: March 1, 1994

THE EVOLUTION OF ENCOUNTERS

There are several courses for the co-evolution of two systems which encounter each other after prior separate and independent development. (Here the term system is used to mean a culture, a society, or an individual.) The path followed after encounter depends primarily on the relative degree of development of the encountering systems prior to their encounter. Equal systems follow a different course than do slightly unequal systems and a quite different course from radically unequal systems. While the ratio of the degrees of development of the two systems is the most significant parameter in the path of co-evolution, there are other parameters, such as world view, self image, range of experience, and system strength that also affect the outcome.

The initial step in any encounter is learning of the existence of the other. In most instances knowledge of the existence of the other comes mutually but it is also possible that one system learns of the existence of the other without the second systems knowledge of the first. In the latter case it is most probable that the two systems are very unequal in development. Columbus landing in the Bahamas gave knowledge of the existence of the native American population to the Europeans and simultaneously gave knowledge of the existence of the Europeans to the native Americans, but after this initial mutual knowledge, the inequality in the relative developments selected the path of co-evolution.

While we usually associate degree of development with degree of strength, this is not always so. In the case of the barbarian invasions of the Roman Empire, strength was on the side of the barbarians and development on the side of the Romans. The outcome in this case was the triumph of the barbarians. In the case of the barbarian invasions of China, strength was on the side of the barbarians and development on the side of the Chinese. The outcome in this case was that within two generations the Mongols were asking the Chinese if the poetry they were writing was worthy of Chinese cultural recognition. The cultural development of the Chinese was and is so great that it overcomes all intrusions. We will probably see its ultimate triumph over both Marxism and Pepsi Cola Capitalism.

Following the initial knowledge of existence, is the stage of exploration. The more advance culture learning the most. It is a theorem of information exchange that the system possessing the most information will acquire the most information in any exchange. The rich in information get richer faster than do the poor in information. However, in the case of the Spanish exploration of the Americas, another factor replaced the Spanish information advantage. This was the Catholic world view: contempt for other religions and the dictum to convert. Instead of learning the wisdom of the Mayans, Aztecs, Incas there was a

systematic campaign to destroy and obliterate their heritage. Bishop Landa burned the Mayan codices. In all only four escaped to be clues for later scholars to try to reconstruct the cultural treasures obliterated by the more developed and stronger European system.

After discovery, in the case of the encounter of more equal systems, instead of the robbery and destruction which took place in the Americas, we have the development of trade. Asian peoples were not at the mercy of the stronger Europeans since they were comparably as advanced culturally. An era of free trade ensued to both sides advantage. But when further advantages were sought, trade was modified by force. Colonialism was born. Penetration of the weaker by the stronger took place with varying success, depending on the strength and degree of development of the weaker. Africa was easily subdued, India with difficulty, China weakened but not taken over, Japan completely repulsed the would be invader, but took the stance of the recluse.

Following on the era of trade, in the next stage the under developed culture emulates the colonial power and begins to develop at home what had formerly been imported. This results in the two systems moving from the symbiosis of trade to the competition of similarity. We often think of differences as being the cause of competition and rivalry, but it is not difference, but similarity that leads to rivalry. When the American colonies developed home industry and their own merchant marine, they no longer were dependent and came into competition with the mother country. The end of this particular colonialism in 1776 showed what inevitably would and did occur globally in the 20th century.

Whatever the advanced system has or does will in time inevitably be done by the developing system. Japan will make cars and chips, India will write software, North Korea will make a bomb. Trade inevitably leads to homogenization. As homogenization increases, systems pass through the stage of intense rivalry and competition, marked by wars and the employment of economic weapons such as tariffs and sanctions. The choice for the advanced system becomes reclusiveness or open trade leading to further homogenization and rivalry. This is the stage at which the world has arrived in the last decade of the 20th century. What about the future?

Without intensified technological research and development, the advanced system will in time be equalized with all others by ensuing homogenization. For homogenization is the economic operation of the second law of thermodynamics, everything moves to the same level. When this happens there is no need for trade, no energy will flow, just as no water flows when all the hills and valleys have been smoothed to the same level. Eddington has pointed out that uniform sameness is indistinguishable from non-existence. The second law's end point is therefore non=existence and homogenization will take us to that denouement.

Alternatives to the "heat death" predicated by the second law, are for the advanced country to make innovation its responsibility and product for export and trade. Whatever we do will be copied and made, and probably be done and made better, by the less developed country. There is only one ultimate business for America if it seeks to preserve its leadership and standard of living, that is the business of innovation. Industrial strength, military strength, economic strength, in the future will all depend on the pillar of innovation.

An alternative to the homogenization path is for the leader to move away from the pack. In this case the bell shaped distributions become bimodal with the disappearance of the middle. While we see homogenization increasing globally, we see a bimodal distribution developing internally. The rich are getting richer and fewer, the poor are getting poorer and more numerous, and the middle class is disappearing. Whenever in evolution there is counter=homogenization the result is discretized levels, the appearance of gaps. Paleontologists look for the "missing link" between man and lower anthropoids. There is no missing link, the middle in the bimodal disappeared.

But evolution, in its wisdom, seems to avoid homogenization. There is the basic process of departure and return. The global village is not a dead-end point. Systems will, through some intervention, become isolated from each other and develop independently, then come together again to repeat the cycle of discovery, exploration, trade, rivalry, and homogenization. We are more familiar with the forces and processes that bring us together, the forces of return, than with the forces of departure. Today we see the economic forces of unification and interdependence running counter to the cultural forces of separation and independence. Homogenization opposed by pluralism. It may be that a system is not properly modeled by one attribute, say economics. It is necessary to model at least two attributes, economics and culture. These are two intertwining dragons or serpents that create the dynamic of existence. When one is homogenizing, the other is heterogenizing. Only when both are homogenizing, when the melting pot melts everything , does the end come.

GDPGHP01.WP6 September 29, 1997

A GENERALIZATION OF SOME GENERAL PRINCIPLES

	GDP DIVERSIFICATION PRINCIPLE	GHP HOMOGENIZATION PRINCIPLE
SPACE	~~PLUS~~ NEGATIVE FORCE TENSION	~~MINUS~~ POSITIVE FORCE COMPRESSION
METRIC	EXPANSION	CONTRACTION
PHYSICAL	$\frac{c^4}{G}$ ~~Mc^2~~ ENERGY	GRAVITATION
HAMMING	DIVERSIFICATION	HOMOGENIZATION
BONDING	FRAGMENTATION	CONSOLIDATION
OPTION	INCREASE CHOICE	DECREASE CHOICE

Note that the ~~Mc^2~~ $\frac{c^4}{G}$ energy expansion is similar in effect to the cosmological constant Λ introduced by Einstein.

In non-deterministic zones, nature always makes those changes that increase its option space, that is moves to those regions where the number of options is a maximum. This is seen in the structure of the Great Pyramid in Egypt as well as in bio-evolution's movement to increase variety. {see S.J.Gould's "Full House") Wheras first order systems (individual species) operate under the Principle of Plenitude to increase their number, second order systems (ecologies) operate to increase variety.

Some forms taken by GDP and GHP:

GDP	GHP
Pauli exclusion principle	Second law of thermodynamics
Gas pressure	strong force
Radiation Pressure	weak force
Coulomb like charges	Coulomb unlike charges
Mc^2/L^3 energy pressure	GM^2/L^4 gravitation pressure
Liberty	Equality
Isolation, embargo, sanctions	Communication, Trade
Hierarchy	Mergers, Standardization
Sexual reproduction	Mitosis, cloning
The Discrete	The Continuous
---> Existence	---> Extinction

COHERENCE

LAWS

INTCYC.W52 DISK: January 20, 1994

THE INTERACTION OF CYCLES

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

KNOWLEDGE EXPLANATIO CONTENT

MEANIN CONTE

WISDOM: a matter of BOTH

Some cultures have emphasized the repetitive, cyclical, and closed, while others have emphasized the historical, evolutionary, and open. The Mayans, for example, structured their world view around a nested series of complex cycles that interacted much in the same way as gears. The Hebrews, on the other hand emphasized the historical or evolving, a world with a beginning and an end, governed by a teleological or finalistic dynamic. The Western world has in general followed the Hebrew view, looking on the world as open ended, evolving, progressing, having a beginning and an end, a cosmogony and an eschatology. The Eastern world, however, felt there was neither beginning nor ending, only an endless repetition of cycles of various lengths. What was to the West the "ground" of linear change containing various cycles, was to the East only a cycle of great or greatest duration. For the East, the West's linear and open was only the counting of cycles.

Not only the measurement of time depends on the cyclical, but the very concept of time derives from the cyclical. Here we want to consider the different ways in which humans have treated the interaction of cyclical phenomena, which must include the interaction of the cyclical with the non-cyclical, (or with the cycle of great length.) We have noted elsewhere (see HISTCYCL.P51 scraps '93 #6) that open change can be represented by e^{at}, but that the insertion of $i=\sqrt{-1}$ converts the change to cyclical, e^{iat}. The following are some of the forms of cyclical interaction.

- Gears
- Phyllotaxy
- Spirals and Helices
- Modulation and Beats
- Sidereal and Synodic
- Growth curves and envelopes
- PERI-DIA
- MUSIC: RHYTHM AND PITCH
- TABLES (2 DIMENSIONAL CHARTS)
- TOROIDS, METATORDIOS

A cycle could be a strange attractor

MAYANS

[What are the standard regions of each?]

GUPGEP98.WP6 February 7, 1998

ASPECTS OF THE DIVERSIFICATION-HOMOGENIZATION DIALECTIC

The ancients, both Chinese and Greek, held that a great portion of the experiencable universe could be explained in terms of a few dialectical principles, such as Yin-Yang or Masculine-Feminine. However, over the years many dyads were lumped together under a single dialectic term such as Yin-Yang, which then became generic, causing the independence and dialectical significance of these dyadic opposites to become obscured. This practice diverted the quest for a set of fundamental dialectics by which the organization and evolution of the phenomenal world could be represented. It is now important to reexamine various dyadic couples to find which qualify as dialectics and among those, which may possibly be used as a fundamental generating set.

In the present approach to this task we shall begin with the expansion-contraction or E-C dialectic. In addition to the conventional meaning of expansion and contraction derived from our experience in physical or positional space, (hereafter referred to as P-space), we shall recognize the E-C dialectic as also operating in form or Hamming space, (hereafter referred to as H-space).[1] In H-space expansion corresponds to the creation of diversity while contraction corresponds to homogenization. Thus the fundamental E-C dialectic may be considered to possess two components, one affecting the density of matter in P-space, the other affecting the degree of diversity H-Space.

This example of the E-C dialectic leads us to consider not only the dialectics themselves, but whether there exist spaces other than P-space in which a given dialectic may operate. The organization of the fundamental generating set will then consist of a two dimensional matrix having as columns the list of dialectics and as rows the spaces in which the dialectics are operative. While P-space is the phenomenological space of our physical experience, it is conceivable that there are basic dialectics underlying the structure of the universe that have no component in P-space. These dialectics being unavailable to our senses or their instrumental extension, belonging to Kant's noumena, could only be detected indirectly by logical inference or pattern completion.

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[1] H-Space stands for Hamming space, named for Robert Richard Hamming who developed the idea for use in code theory. H-space is a multidimensional space in which each dimension represents a parameter that defines form. The more complex the form, the greater the number of hamming dimensions required for its description. Distance in H-space is a measure of difference in form. The more alike two objects, the smaller their separation in H-space. Two or more objects possessing the same coordinates in H-space would thus be identical in form.

LAWS
COSM

noisfood.wpd December 14, 1998

NOISE->FOOD

Several years ago I bought an Apple computer and found that it was supplied with a good random number generator. I wrote a program in which I modulated white noise with white noise and was totally surprised to discover that the result was a gaussian. Further, every time I iterated the modulation the variance decreased, the gaussian became sharper. After a few iterations the curve approached a dirac δ function. This process could very properly be labeled "localization".
delta

At the time I had never heard of central limit theorems, a class of theorems that state: Given a sequence $\{X_1, X_2, \ldots X_n\}$ of independent random variables, then the function,

$$\left(\sum_{i=1}^{n} X_i - m_n \right) \div \sigma_n$$

where m is the mean and σ^2 the variance, approaches a gaussian or normal distribution, as n becomes large. In other words the superposition of large numbers of random distributions (such as noise) leads to a gaussian. My experiment on the Apple proved to be a case of central limit theorems. (Powerful to discover theorems using injunctions, read algorithms, instead of logic.) [But what of iterations decreasing the variance?]

All of this takes on additional interest when we examine the process of collapse of a wave function. The Schrödinger time evolution of the wave function of a particle goes from that of a localized gaussian to one with ever increasing variance and non-localization.[1] This is the inverse of the localization that happens under the iterated central limit theorem process. One could say that decay results from no longer being fed by some source of randomness or noise. Ghirardi-Rimini-Weber point out that a particle's state may be altered by receiving a "hit" [modulation] from a sharp gaussian function. This in effect would restore localization as in accord with the central limit theorem process. Afterwards the particle resumes the path of Schrödinger spreading. The GRW idea is that a particle is "fed by gaussian food", or it seems more fundamental to say since gaussians themselves are built from white noise, that the ultimate food supporting all matter is white noise energy. Can we then conclude that the cause of decay and non-localization is some form of starvation, lack of access to white noise? Such would constitute a very generalized notion of the Second Law of Thermodynamics!

It is most interesting to compare the central limit process with the actions of the Five Tathagatas. The Vairacona-Akshobya process is the original self-modulation of white noise, creating a gaussian non-localized particle. Ratna Sambhava, Amitaba, and Amoga Siddhi represent subsequent iterations resulting in the increasing localization of energy and the creation of what we call material reality.

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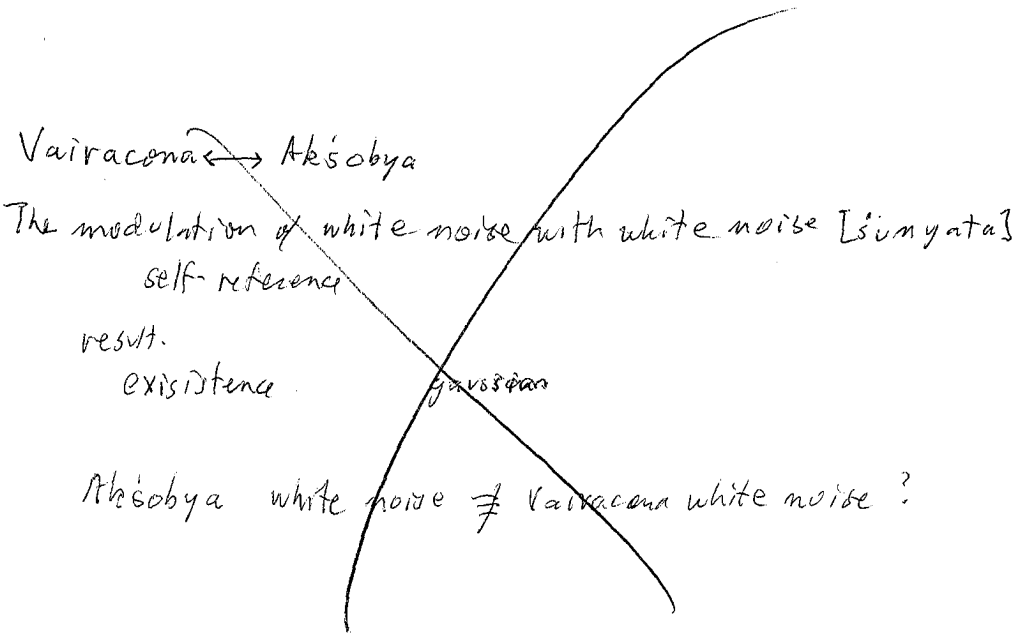
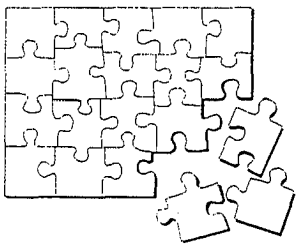
[1]See, for example, Penrose, "Shadows of the Mind" p 332


Vairacona ⟷ Akśobya
The modulation of white noise with white noise [śunyata]
self-reference
result.
exististence
gaussian
Akśobya white noise ≠ Vairacona white noise ?

LAWS

PUZPIECE.WPD January 7, 1999



PIECES OF THE PUZZLE

- MODES OF CHANGE

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

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

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

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

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

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

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

- GUIDES OF CHANGE

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

  Specified goals and plans.

  Risk analyses. ~trade-offs

  Interactions between co-existing systems.~competition

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

  Chance. ~fortune, luck, serendipity, synchronicity

  External management. ~God, fate

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

  Innovation, discovery and invention.

- CREATION OF POTENTIAL

  Innovations, alternatives, options, choices

  Liberation, freedom

  Knowledge

  Diversity

LAWS

31a

PUZLPC01.WP6 MAY 6, 1998
[PART I PUZLPC00.WP6 1997#91]

PIECES OF THE PUZZLE PART II

RE GÖDEL

Some (unwarranted?) generalizations of Gödel's Theorem:

- No axiomatic system is capable of completeness.
- No system is capable of explaining itself.
- No program can generate a number more complex than itself.*
- No file can be both perfect and complete
- The logical cannot exhaust the rational
- The rational cannot exhaust the valid
- The valid cannot exhaust the True
- The intellect cannot encompass the whole

[*--Chaitin see Peterson p197]

BUILDING BLOCKS

- SPACES
- QUADRANTS
- DIMENSIONS
- LEVELS

- Symmetry
- Orthogonality

- Dialectics
- Imperatives

- Realities
- Cultures

- NODES
- LINKS
- TRAFFIC
- CARGO

THE FOUR LEVELS OF MIND

- Personal Sensory based
- Collective Cultural
- Noosphere Planetary
- Cosmic Brahman

And SUNYATA

SPACES

- P-SPACE Particle or Position SPACE

- W-SPACE Wave SPACE (or Quadrant)
- H-SPACE Hamming or Form SPACE
- B-SPACE Force or Bonding SPACE
- S-SPACE Selection or Option SPACE

FOUR FEATURES OF QUANTUM MECHANICS

- Complementarity Wave-Particle duality
- Heisenberg uncertainty principle $E \times T > \hbar$
- Non-localism Coherence after separation
- Oscillation of monads between existence and non-existence

MORE QUESTIONS

- Is Creator <--> Creation a Noether symmetry?
- Is reality a function of scale?
- In what SPACE does a mental conception exist?
- In what SPACE does mathematics exist?
- Do I think or does it think in me?

MISCELLANEOUS

- The rational cannot be measured.
- MAP:TERRITORY::PERCEPTION:REALITY
- A belief is neither true nor false. cf Schrödinger's cat.
- Recognition is possible because we are holograms. or said in another way: God created us in His Image.
- Archetypes are generalizations
- Consciousness is awareness of awareness.

LAWS

MOVIEDAY.WPD November 14, 2003

A DAY AT THE MOVIES

At large intervals, sometimes decades, the makers of films come up with productions that deserve the appellation, "classic". These are not the films suffused with innovations such as special effects, but films that tie together human characters with timeless archetypes. (But that is what anything labeled *classic* has always been about.) This time it is two movies being released in the same week. We have:

LUTHER
Director: Eric Till
Lead Actor: Joseph Fiennes

and

MASTER AND COMMANDER
Director: Peter Weir
Lead Actors: Russell Crowe and Paul Bettany

Both of these films connect historical dramatic details to timeless philosophical patterns.

Excerpts from a review of LUTHER:

> This fact-filled historical epic depicts the events that gave birth to Protestantism as a life-and-death political struggle between a corrupt, repressive, intransigently conservative establishment (the Roman Catholic Church) and a liberal populist movement that spins out of control and wreaks havoc. With religious fundamentalists of every stripe ferociously resisting diversity and change, variations of the same primal struggle are still being acted out all over the world. The movie's essential conflict infers that it is a never-ending ideological rift programmed into the human species.

Excerpts from reviews of MASTER AND COMMANDER:

> In the authoritarian world of the ship, the two men, the Commander and the Doctor talk to us about the contest between man's need to dominate and his desire to reflect. Maturin, the ship's doctor is "the shape of modern man, a curious man of reason. Aubrey, the commander is a wise warrior driven by absolutes, a man of his time, a type headed for history's dustbin.

In juxtaposing these two struggles: populist reform vs rigid absolutism and drive to control vs aspiration to discover, we reveal some of humanities inherent flaws that may be the prescription to our self-extinction.

VARIETY IN EXTINCTIONS

On the planet earth a phenomenon occurred called *"life"*. While possessing the capability of generating much variety, this particular development, *life*, showed early signs of contesting Brahma's Theme**: The actualization of as many varieties as possible**. As *life* evolved it became increasingly clear that its primary intent was its own survival. Survival in itself could consistently operate in accord with Brahma's Theme, but some species of *life* succumbed to the illusion that the best way to survive was by dominating and controlling their contexts. This delusion became particularly evident when a particular sub-aggregate of *life* called humanity appeared. This species not only had the resolve to control and dominate but began to use its creative talents to facilitate that goal. They even established gods that commanded them to dominate and to subdue [Genesis 1:28]. It further developed that sub-aggregates of humans iterated this injunction to dominate and sought to subdue and control other humans. In fact the drive to dominate and subdue all that differed manifested itself recursively down to each human sub-group.

The threat posed by humanity to Brahma's Theme caused alarm and Lord Shiva was sent to earth to investigate. He reported back that much of life harmonized with Brahma's Theme of actualizing variety. Many species lived symbiotically and formed ecologies that enhanced variety. However, the species *homo sapiens* was definitely threatening to the Theme. Humans rendered species extinct, destroyed ecologies, and did not even live in harmony with members of their own species. After dominating other species [except for a few bacterial and viral species] their drive to dominate led them to focus primarily on the means to dominate others in their own species. This they did with countless wars and increasingly sophisticated weapons. Lord Shiva reported, "As the situation stands today, if not thwarted, this species will make impossible any fulfillment of Brahma's Theme on earth.

Brahma, on hearing the report, instructed Lord Shiva to remove this threat to the Theme. Lord Shiva recalled that when threats to destroy diversity on earth had occurred in the past, he deflected asteroids to remove the threatening sources and restore the proliferation of variety. But to be in best accord with Brahma's Theme, there should be variety even in the modes of extinction. Lord Shiva then decided that an alternative approach to extinction would be to leave humans to their own devices. Let them develop more powerful weapons and continue in their illusions. At a certain point their obsession with power, their will to dominate, in combination with the increased power of their weapons would solve the problem. But Lord Shiva was concerned that self-destruction of humanity by humans might do extensive damage to other agents on earth that were in harmony with Brahma's Theme. Measure was taken and while it was regrettable that many who served the Theme would be terminated, the risk of leaving *homo sapiens* on the planet was too great. Lord Shiva concluded that after the extinction a radiant would again occur and in good time the planet earth with its particular phenomenon, *life*, would rejoin the cosmos in contributions to Brahma's Theme.

EVOLUTN1.WPD January 10, 1999

EVOLUTION AS CYCLIC PROCESS

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

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

The growth of potential will exceed that of realization
w. H. Kahn Reality has outstripped Experience

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

~~reto~~ 70
Replaced by 2-023 #2

TIMETURB.WPD 2002-09-28 2002-12-27

TURBULENCE IN THE STREAM OF TIME

First it is necessary to distinguish between the ***present*** and the ***now***.
The Direction of Time:

The ***present*** is an instant of time that moves along the line of time in a direction past to future. This direction or "arrow of time" has been defined in terms of the second law of thermodynamics as the direction in which entropy increases. Associated with this direction of time is the concept of causality. The conventional assumption is: that which is subsequent can only be caused by that which precedes, or consequences do not play a causal role.
It is also recognized that living systems are able locally and temporally to violate the second law of thermodynamics. This property would infer that living systems can also effect conditions in which consequences can play a causal role. Indeed, this disposition in living organisms has been given a name, "purpose". [This purpose is not to be confused with a philosophical purpose of life, but is simply an agenda the organism has chosen to influence.]

The ***now*** is a zone within the stream of time in which the second law of thermodynamics has been violated. Within this zone antecedent-subsequent are no longer locked to cause-effect. Causality is free to move both from prior to later and from later to prior. Consequences may play a causal role. And living organisms seem to be able to create such "now zones". Whenever such a zone occurs in the stream of time it is in many respects analogous to turbulence in a fluid stream where the flow is in several directions at once. The ***now*** may be thought of as a turbulent eddy in the stream of time..

Two quotes are of interest in this connection:
Who controls the past controls the future; who controls the present controls the past.

—George Orwell 1984

History is what I write it to be.

—Joseph Stalin

An implication of these quotes is that people in a position of power more readily recognize this human capacity to locally and temporarily violate the second law of thermodynamics. But this power to overrule some aspects of the determinism or necessity present in the natural order is possessed to some extent by all life forms.

Notes:
The **present** is the period in which energy may be transferred. The **now** is the time zone in which information may be transferred. [or created]

The Hopi view of a determinator in the future may be considered the leading front of a now zone
The lagging front, liberation from the past, is more difficult to ascertain.
Questions:
Is there an holographic analogy in time where the part, a portion of time, may contain the whole?

Are there different topologies for time as there are for space?

CAUSALITY AND THE DIRECTION OF TIME

Who controls the past controls the future; who controls the present controls the past.
—George Orwell 1984

The Direction of Time:

Does time always move from past to future? The direction or "arrow of time" has been defined in terms of the second law of thermodynamics as the direction in which entropy increases. And locked into this direction of time is the concept of causality. We conventionally assume that causality must operate in the same direction as the flow of time, meaning that consequences never play a causal role. But in the case of living systems, it is recognized that they are able, locally and temporally, to violate the second law of thermodynamics. This capability of living systems infers that they may also, locally and temporally, be able to alter the direction of time. This carries the additional implication that living systems can create situations in which consequences do play a causal role. Indeed, this concept of the power of living organisms to reverse the direction of time and causality has been given a name, "purpose". Living systems do direct sequences of events toward selected goals which conflicts with the idea that the future is solely determined by past causes. A power to overrule some aspects of the determinism or necessity present in the natural order seems to be possessed to some extent by all life forms.

The Present and the Now:

We distinguish between the **present** and the **now**. We may define the **present** as an instant that moves along the line of time in a direction past to future, but at possibly different rates. We define the **now** as a zone in the stream of time in which the second law of thermodynamics has been locally violated. Within this zone antecedent-subsequent are no longer locked to cause-effect. Causality is free to move both from prior to later and from later to prior, and consequences may play a causal role. Living organisms seem to be able to create such "now zones". Whenever such a zone occurs in the stream of time it is in many respects analogous to turbulence in a fluid stream where the flow may be in several directions at once. Such an intentionally controlled zone or interval of time may be thought of as a turbulent eddy in the stream of time..

Notes:

- The **present** is the only period in which energy may be transferred. The **now zone** is the time interval in which information may be transferred. [and/or created]
- The Hopi view of a determinator in the future may be considered the leading front of a now zone

Questions:

Is there an holographic analogy in time where the part, a portion of time, may contain the whole?
Are there different topologies for time as there are for space?

Ref:

See Global Consciousness

The peaks occuring before an event such as 9/11 suggest a "width of now" hypothesis

See Global: "Head and shoulders"

"Tradidition causality appears violated

consequences become causes

[⇒ Bushies could have caused 9.11]

Histeron proteron : later before earlier

Also see ¶ on synchronicity in The Improbability Channel part III

#15a

SAMHAIN.WPD

MARCH 28, 2000
[January 18, 1999 @ 6704]

TIME AND REALITY

Samhain, in today's calendar, November 4th, when the passage between realities is most facile, when the sun is at its western most solstice, when the solar motion is purely southward. The time when beings from other realities come into our reality and we may go to theirs.

I have had many brief glimpses of these visitors who come here, [or was it I who visited them?]. But always they are motionless as though the clock in their reality beat much more slowly than the clock in ours.

The entire matter of alternate realities seems to involve aspects of time. However, time as we understand it is but a part of one dimension of a structure that is a complexity of many dimensions. Our understanding is that of a linear creature's understanding of three dimensional space. [Not even so good as a flatlanders understanding of three space.]

Let us speculate. One hypothesis is that there are many parallel realities, each operating at a different frequency, but all superimposed in the same 3-dimensional space. [This is like the communication engineer's FDMA, Frequency Division Multiple Access .] For example we share the same world with mountains that march to the drummer who beats the tempo in eons, with fruit flies whose life time is a matter of hours, and with clouds whose activities are measured in minutes. And of course we not only share, but are one with, the micro world of atoms and particles the hands of whose clocks move in nano and pico seconds. Why are we fascinated with artifacts like lava lamps whose blobs evolve at a rate that is so unusual for the rates of our reality. Why are we fascinated with speed: Mach 2 jets, Racing cars, skiing down slopes? Is it because these give us a hint of the presence of other realities somehow related to ours through a difference of clock rate or frequency? And at the other pole, there are the mystics, who by meditation slow the clock, entering alternate realities that emerge from stillness and silence.

Can we fabricate a model of time that will fit all of these marginal glimpses of other realities, the thrills of speed, the psychic insights of stillness, the passages at Samhain? Can we visualize the Reality of which all realities are but facets? It has been said that an ontology [i.e. a description or model of a reality] depends on an epistemology [i.e. a methodology or way of knowing]. An epistemology is a humanly fabricated tool, helping us to know and explain, to feel and understand our experience. It is at once a window and a mirror, an opening through which we view the world and yet can see in it a reflection of our capabilities and our limitations. What we see through the epistemological window leads us to an ontology, a description of that which we are a part. What we see in the epistemological mirror is the nature of our own psychology and culture.

NOWIDE2.WPD June 6, 2003

THE WIDTH OF NOW

SOME UNSCIENTIFIC EXPLORATIONS

In 'Causality and the Direction of Time'[1], the concept of a **now-zone** was proposed as an interval of time in which past and future were interchanged, *histeron proteron*, and consequences could be causes. It was ventured that living systems' ability to locally and temporally violate the second law of thermodynamics, reversing or suspending time's arrow, made it possible to create such now-zones. But there is further evidence that supports the possible existence of now-zones. Both theory and experiments in quantum mechanics substantiate the concept of "non-locality". Whereas it is **spatial non-locality** that has been emphasized and experimentally validated, in contemporary physics with time considered as co-dimensional with space, the idea of **temporal non-locality** is also on the table. If non-locality be proven for time as well as space, an inference would be the existence of now-zones.

But, if this be so, how are such zones to be created? It is proposed that humans have for millennia used **ritual** to create now-zones and that the nature of the ritual determines the width of the zone. For example, when the president goes before congress and speaks on the state of the union he is participating in a ritual that expands the time duration of one evening into a period of time that brings the past year and the year ahead into a now-zone. In doing this in the gathered assemblage somehow a power is created that can shape the future. Further, in those rituals of higher drama when a president goes before congress to ask for a declaration of war, the duration of the immediate event expands itself to include the entire history of the republic and its destiny for decades to come. In bringing future and past into a now-zone of whatever width human purpose can transcend the confinements of linear time.

Humans engage in a broad spectrum of rituals, from reciting a brief mantra to inauguration or coronation rituals that may last for days. In each case a now-zone is created in which the energy in the dynamic power of linear time is somehow extracted and converted into another form of energy that enables transcendence of the rule of necessity that is implicit in the second law of thermodynamics.

The power of Faith or belief has been recognized by all religions as capable of overruling the intrinsic determinism residing in the inanimate portion of the universe. It may be that the rituals of faith are the actual source of the power of faith. The creation of now-zones by rituals such as a Eucharist, Yom Kippur, a Hajj, or personal meditation and prayer results in the release and transformation of the linear time energy. As has been said, "When two or three are gathered" or "Never doubt that a small group of thoughtful, committed citizens can change the world; indeed it's the only thing that ever has."[2]

It appears that what we are here calling a now-zone or temporal non-locality, the ancients called **eternity.**

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[1]Scrap 2003 #2

[2]Margaret Mead

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.

SINGLE STREAM SEQUENCES

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.

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

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

I. External formulae processes EXPLICIT

A sequence is generated by a formula or recipe which produces the n^{th} event by substituting n into the formula.

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.

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

3) The structure of the n^{th} term is determined by the structure of the preceding sub-sequence of m terms where $m > 2$ and less than the total number of preceding terms.

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

MORE ON DIALECTICS

Type 1. Dialectic The Hegelian Dialectic

Simultaneous operation of opposing forces or principles resulting in creation or innovation at the interface. The Hegelian dialectic is an example. Thesis, antithesis resulting in a synthesis.

Type 2. Dialectic The Antiphonal Dialectic

The operation of opposing forces or principles acting alternately rather than simultaneously. All engines are examples of this form of dialectic. It is symbolized by the caduceus. [cf Wheeler's form of the game of 20 questions]

diachronic in sequence

and the double helix

Type 3. Dialectic The Skew Dialectic

synchronic

The operation of opposing forces or principles acting simultaneously but on two different levels or in two different SPACES, resulting in increase in one SPACE and simultaneously decrease in another SPACE.

Type 4. Dialectic The Inverse Dialectic

The effect of reversal of the direction of operation of a Type 1 dialectic resulting in the creation or emergence of opposing forces or principles out of a null. An example is the emergence of matter and anti-matter from the null Planck particle.

A universe is a set of fixed boundaries within which certain rules obtain, but open to what may occur within the bounds and through the operation of the rules. All four types of dialectics operate in a universe. The sequence in which they operate on Brahman or the Sunyata determines the properties and contents of a universe. Furthermore, universes may be imbedded within one another in the manner of Russian matrushka dolls, that is in an hierarchical manner; or may be organized into strange loops, uroborus universes; or in a holographic manner.

Two force dialectics are analogous to Kepler's laws regarding the dynamics of two bodies. Trialectics, the involvement of three forces or principles, would result in complexities, chaos, and non predictability, as in three and multi-body problems in dynamics.

when is a dyad a dialectic?
or a pair

CAUSMUTL.WPD JANUARY 4, 2001

See also 2001 #2

FROM CAUSALITY TO MUTUALITY

The great paradigm shift taking place in Western thinking is that from causality, a one-way street, to mutuality, a two way street or even a multilane super-highway. While the idea of mutual causality has long been fundamental to Eastern thought, its penetration into Western thinking has been slow. Causalism, the past determining the future, has been dogma in Western thinking. The opposite, the future affecting the past, has been viewed as non-sense. But mutuality has crept into western thinking through both politics and economics: Jefferson's view of ultimate sovereignty residing in the people, i.e.democracy, is the mutuality of [people <~~~> government]. And the cornerstone of free market economics has been the mutuality of [supply <~~~> demand]. The curious aspect of this is that physics has been the last stronghold of causalism. But technological developments such as radar [emw out <~~~> emw in] or holograms [part <~~~> whole] have given indisputable illustrations of examples of mutuality. Then with quantum mechanics physics had to succumb. The mutuality of the experiment and experimenter, of the observer and the observed could not be ignored. The illusion of "neutral objectivity" went to the dust bin. And now with bi-directional time being theoretically possible, the mutuality of [past <~~~> future] or [causalism <~~~> finalism] is on the table.

Mutuality has also surfaced in the theory of general relativity. As J. A. Wheeler puts it, "Matter tells space-time how to curve and curvature tells matter how to move.", a form of the mutuality, [mass <~~~> space-time].[1] Einstein says that the [mass <~~~> space-time] mutuality is ontological. If there were no matter there would be no space-time, i.e. the existence itself of space-time derives from the existence of matter. This raises the question, if there is full mutuality, then in what way does space-time contribute to the existence of matter? Must they be mutually sustainable?

Other phenomena that have defied explanation by "causality science" are Jung's *synchronicity* and Walpole's *serendipity*. These are events that happen that in some way needed to happen, species of *deus ex machina*. The visible part of the mutuality is the event itself, the invisible part is some meaning bestowed on the event. It is as though there are mutual exchanges between invisible actors in the event and visible actors in the event. The event itself is visible, the scenario of which the event is a part is invisible. Viewing synchronicity and serendipity as mutualities may give clues to their explanations.

Finally, another phenomenon that may better be investigated from the viewpoint of mutuality, is the phenomenon of *resonance.* Where resonance is defined as the mutual tuning of two vibrating systems to a single frequency or to harmonics of some fundamental frequency. [frequency_1 <~~~> frequency_2]

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[1] Some explain that general relativity is [dynamics <~~~> geometry], but this may not be so much a mutuality as alternate descriptions of the same phenomena.

MUTUAL01.WPD JANUARY 1, 2001

See also 2001 #7

THE MUTUAL WORLD

We may think of the world as consisting of **nodes** [things, objects, or beings] and **links** [relations, bonds, or forces]. In the realm of human perception, the nodes are visible while the links are invisible, being in general perceivable only through their effects on the visible. Much of the history of religion, philosophy, and science consists in speculations or explorations of the invisible portion of the world, i.e. of the relationships that exist between the objects or things that are visible. The philosopher John Locke ["On Human Understanding", 1689] maintained that it was the visible that was important and meaningful and speculations about the invisible were meaningless. On the other hand, in the 20th century the Structuralist school of philosophy maintains the opposite: Reality is not composed of things but of relationships, and every object has both a **presence** and an **absence.** Therefore it becomes important to explore not only the relationships between objects but relationships between the relationships themselves.

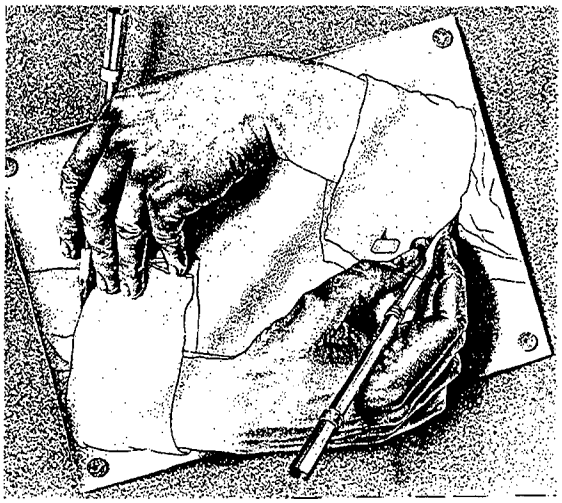
We might distinguish:
Class I relationships: Relationships between objects
Physical forces such as gravity and coulomb forces would be examples of Class I.

Class II relationships: Relationships between Class I relationships
The relationship between gravity and coulomb force would be and example of Class II

But between Class I and Class II there is a "semi" class of a relationships, those between a class I relationship and an object. For example,

The *mutuality*, Force <==> Form.

The question involved is: Is form, being visible, an attribute of objects, or is it also a force? Hence the need for this additional class of "*mutualities*"



Drawing Hands —M. C. Escher

THE FORMS OF REPLACEMENT

In addition to motion, growth, decay, an important manifestation of change is replacement. There are several types of replacement.

PASSING THE TORCH:

Children replacing parents
Students replacing teachers
Princes replacing kings
New presidents, popes, etc, replacing their predecessors

THE GIFT REPLACES THE GIVER

The system replaces the systematizer [Heliocentrics replaces Copernicus]
The compositions replace the composer. [The symphonies replace Beethoven]
The plays replace the playwright [Hamlet, Macbeth, et al replace Shakespear]
The discovery replaces the discover [X-rays replace Rontgen]
The invention replaces the inventor [electric lighting replaces Edison]
The collection replaces the collector
The product replaces the process
The selection replaces the selector [in bio-evolution?]
Creation replaces its Creator

DYSFUNCTIONAL REPLACEMENTS

A part replaces the whole [cancer cells]
Executive power replaces separation of powers, [President over congress and courts]
The messenger replaces the message [Darius executing the bearer of bad news]
The pointing finger replaces its designation
The teacher replaces the teaching [Deification of the teacher, as in most religions]
The institution replaces its mission [the Pentagon's prime focus: defending the Pentagon]
War replaces its participants
Power replaces its administer
The means replaces (and actually determines) the ends
The symbol replaces what it represents
The word of the law replaces its intent
Proselyting replaces development

REVERSIBLE REPLACEMENTS

The agent replaces the agenda, then the agenda replaces the agent
The action replaces the act. then the act (result) replaces the action [eg invasion of Iraq]

HIGHWAYX.WPD March 14, 2004

THE HIGHWAY TO EXTINCTION

Four laws of change working jointly portend a warning that the present course of Western Civilization is leading mankind toward a major crisis. These are three human proclivities endowed with a spreading existence of weapons of mass destruction

First, the drive to dominate and control.

This is an intrinsic attribute of most humans derived from the Principle of Plenitude and the illusion that dominance is the best insurance for survival.

Second, the Technological Imperative.

Technology has become a sacred cow to the western mind. While in the past advances in technology have benefitted humans in many ways, reducing time to effect results, medical and health benefits, ...It has also resulted in the creation of weapons whose use would decimate all living organisms. Initially technology was indeed the servant of mankind, but it has become a master which mankind must serve. Well expressed in Bekian's Law: "If we can do something we will do it, whether it makes sense or not."

Third, the Law of Hardening.

This is the human search for simplicity, the inability to live with ambiguity and uncertainty, the distaste for complexity, the reduction to dyads. It results in the destruction of alternatives, the march to dogma and inflexibility.

Fourth, the Lord Acton Principle.

This is the principle that power corrupts. Those who possess power lose rationality and ability to perceive reality.

LAWHARD.WPD March 16, 2004

THE LAW OF HARDENING

Actualization Destroys Potential
Selection Destroys Options

There are two aspects to the Law of Hardening. The first is the factual or objective aspect that states choice is irreversible. And this irreversibility results in the processes of selection and decision destroying access to options. According to some who study quantum mechanics it results in the permanent destruction of the options themselves. What is not selected is forever lost to the chooser. This aspect of the law of hardening also states that in actualizing potential is destroyed, not just in the sense of the replacement of potential with actual but in the sense of diminishing the totality of the possible. The second aspect of the law of hardening derives from the human proclivity for simplicity. Our difficulty in living with complexity and ambiguity makes us seek to reduce the number of options to one which then gives us a feeling of certainty. The two aspects, the objective and the subjective, the ontological and the psychological, augment one another and result in an ever narrowing view of the world and an ever diminishing possibility of knowing the world.

A methodology, once established, limits the type of paradigms it can generate.
–Magoroh Maruyama

In self-organizing systems, any change that leads to a state more resistant to further alteration is immediately assimilated. –Anon [Quote #2782]

The worse things get, the more our approach becomes the only plausible solution.
–Hawkes

The chances of alternatives decrease with the amount of investment in the current approach.
–Anon

Metaphorically, the actualization of potential is like filling a cup with water. Potential is the empty portion, actual is the filled portion, so actualization reduces potential as it fills the cup. But the Law of Hardening goes further and states that in filling the cup the cup shrinks in size.

Panta rei

Panta rei
everything is changing!
Heraclitus

Heraclitus was born somewhere between 535 and 540 B.C. in Ephesos, and died 475 B.C. Very little of his work has been preserved - what is left are dozens of quotes, or rather fragments of text that have been quoted by others.

The River

Heraclitus' philosophy can be captured in just two words: "panta rei", literally everything flows, meaning that everything is constantly changing, from the smallest grain of sand to the stars in the sky. Thus, every object ultimately is a figment of one's imagination. Only change itself is real, constant and eternal flux, like the continuous flow of the river which always renews itself.

those rivers one steps into are not the same. other and yet other waters keep flowing on.
those rivers one steps into are not the same. other and yet other waters keep flowing on.

nto the same rivers we step and yet we do not step, we exist and at the same time we do not exist
into the same rivers we step and yet we do not step, we exist and at the same time we do not exist

after all, one does not step into the same river twice. waters disperse and come together again ...
they keep flowing on and flowing away
after all, one does not step into the same river twice. waters disperse and come together again ...
they keep flowing on and flowing away

in the end, there is only flux, everything gives way
in the end, there is only flux, everything gives way

everything is in flux and nothing abides everything flows and nothing stays fixed
everything is constantly changing and nothing stays the same
everything is in flux and nothing abides
everything flows and nothing stays fixed
everything is constantly changing and nothing stays the same

Science and the Universe

Heraclitus was a contemporary of Pythagoras, Lao-tzu, Confucius, and Siddhartha, the Buddha; some say that the term "philosophy", love of wisdom, was first introduced by Pythagoras, who lived from approximately 580 BCE to 500 BCE. Pythagoras and his followers, the Pythagoreans,

argued numbers to constitute the true nature of things and all relations to be numerical. Pythagoras is often regarded as the founder of modern mathematics and geometry. The Pythagorean Theorem states that in a right-angled triangle, the square of the hypothenuse (opposite side) is always equal to the sum of the squares of the other two sides. The Pythagoreans also argued that earth was a sphere revolving around the sun in a predictable way.

Heraclitus rejects suggestions that there were universal laws governing nature. Heraclitus rejects all such laws as artificial - static perversions of reality. Also, Heraclitus does not accept an origin of the universe.

much learning does not teach understanding, otherwise it would have taught Hesiod and Pythagoras, Xenophanes and Hecataeus.
much learning does not teach understanding, otherwise it would have taught Hesiod and Pythagoras, Xenophanes and Hecataeus.

when awake, people think there is one, common kosmos when awake, they see things that die - they are creative only in their sleep
when awake, people think there is one, common kosmos
when awake, they see things that die - they are creative only in their sleep

but there is no kosmos, as everyone seems to believe; no such thing was created by either gods or people - instead, there is, was and always will be eternal fire, raising as well as quenching expectations of order
but there is no kosmos, as everyone seems to believe; no such thing was created by either gods or people - instead, there is, was and always will be eternal fire, raising as well as quenching expectations of order

there is exchange of all things for fire and of fire for all things, as there is of wares for gold and of gold for wares
there is exchange of all things for fire and of fire for all things, as there is of wares for gold and of gold for wares

An early version of Einstein's e = mc2, as some say? Would Heraclitus have accepted any constant, other than change itself? Light travelling at a constant speed, while nothing can travel faster? Wouldn't Heraclitus have felt more comfortable with the randomness of quantum mechanics?

the fairest universe is but a heap of rubbish piled up at random
the fairest universe is but a heap of rubbish piled up at random

Is the political system moulding scientists, making them prone to believe in an origin of the universe, indeed that there was something called "universe" in the first place? Are scientists supporting the system that feeds them, and that inserts bias and indoctrination into their views?

Politics

How does politics influence science, or health care, or education? Are professional qualifications an indication of bias towards a specific political system? Scientists are typically paid by government either directly or indirectly, such as through universities and defense industry laboratories. The secrecy of the military and the bureaucracy of government combine into a military-industrial complex that defies accountibility. Add the call by universities for independence from whatever party is in government, and how much accountibility is there in this system? Similarly, aren't medical, legal and educational professionals - all so heavily dependent on government funding and regulations - inclined to support a political framework that lets them spend huge amounts of taxpayers' money without much accountibility?

Doctors cut, burn, and torture the sick, and then demand of them an undeserved fee for such services.
Doctors cut, burn, and torture the sick, and then demand of them an undeserved fee for such services.

Indeed, the cure may be worse than the disease! So, why should one be privileged to practice as a doctor, while someone is prohibited to do so? This old question remains as valid today, as it was in Heraclitus' time. Just look at the story of the life of Patch Adams!

Ephesians might as well hang themselves, every man of them, and leave their city to be governed by youngsters, for they have banished Hermadorus, the finest man among them, who said: 'No one of us should claim privilege over the rest; if there should be such a one, let him go and live else-where'
Ephesians might as well hang themselves, every man of them, and leave their city to be governed by youngsters, for they have banished Hermadorus, the finest man among them, who said: "No one of us should claim privilege over the rest; if there should be such a one, let him go and live else-where"

Hesiod distinguished good and evil days, not knowing that every day is like every other
Hesiod distinguished good and evil days, not knowing that every day is like every other

Conclusion

Indeed, why should we be prohibited from, say, working on a Sunday? Even if this was just an arbitrary choice, what is the basis for prohibition?

Do universities, and the political system that supports them, produce professionals who are prone

to support arbitrary regulation concealed as religious or scientific dogma, for the sake of privilege for some in areas like medicine, law, accountancy and education, without much accountibility?

Many philosophies and belief systems are based on the idea of a universe with a single point of origin that is governed by universal laws, resulting in privilege for those with "competence" in these laws. Heraclitus rejected any such idea.

Heraclitus was once asked to write a constitution for Ephesus, but he refused. The Persian King Darius once invited Heraclitus to his court to explain his ideas. Heraclitus declined. When people wondered why he spent time playing knuckle bones with children, he replied "Why should you be astonished, you rascals? Isn't it better to do this than to take part in your civil life?"

Heraclitus rejected the views of many of his contemporaries, such as Pythagoras. Similarly, the Sophists later rejected the views of their contemporaries, including Socrates, Plato and Aristotales. The controversy about the politics of science goes on today, with the Optionality Network keeping alight the flame of liberty that already sparkled so brightly back in ancient times.

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Herakleidos of ephesus
"Everything flows and nothing abides; everything gives way and nothing stays fixed."
"One cannot step twice into the same river, for other waters and yet others go ever flowing on."

"Eyes are more exact witnesses than ears."

"Much learning does not teach understanding, otherwise it would have taught Hesiod and Pythagoras, Xenophanes and Hecataeus."

"This universe, which is the same for all, has not been made by any god or man, but it always has been, is, and will be, an ever-living fire, kindling itself by regular measures and going out by regular measures."

"There is exchange of all things for fire and of fire for all things, as there is of wares for gold and of gold for wares."

"The fairest universe is but a heap of rubbish piled up at random."

DIALECTICS AND DYADS

ON DIALECTICS

The terms 'dialectic' and 'dialectics' have been defined and redefined by various philosophers from Plato to the present. Aristotle, Kant, Hegel, and Marx each gave different meanings to the terms. Why 'dialectic(s)' should be repeatedly redefined instead of replaced by neologisms is either because its roots allow different emphases [The Greek, δια = right through or one against another; λεκτικος = good at speaking; διαλεκτικος = argument]. or because each philosopher is seeking to grasp and articulate some elusive fundamental essence that linguistically underlies the word. Plato held that dialectic referred to first principles; Aristotle to the level of ideas that required no hypotheses; Kant for the difficulties and errors that arise in conceptualizations beyond the world of phenomena; Hegel for an adversarial process consisting of principles or forces he called theses and antitheses, that resolved themselves through syntheses; Marx and Engels married Hegel's definition to an ontological materialism, elaborating with such attributes as all entities consist of opposing elements making their stability temporary.

With this antecedent of philosophical freedom in how one may use the term 'dialectic', I here propose to name by 'dialectic' any basic **pair** of forces or principles that operate with or against each other to effect emergence. Unlike Marx, I allow that certain dialectical forces cooperate instead of compete. I also allow that certain dialectical forces do 'time sharing', they multiplex in the TDMA mode. I also postulate with Plato certain primary dialectics that create the 'ground' for the 'figures' of other dialectics; that is, the primary dialectics form and sustain the stage that supports the changes, the dramas, that take place on that stage. Hence, the following definition:

DIALECTICS: *Forces, energies, or principles that work with and/or against one another, whose interaction effects emergence or obliterates existing order.*

At dialectical interfaces, 1) some form of emergence occurs either through synthesis or creation; or 2) some species of obliteration or extinction removes existing inhibitors, resulting in the release of energy and the renewal of potential. Dialectics are engines that generate complexity, manifest new levels, or even create new worlds.

DIALECTICAL PROCESSES

SOME EXAMPLES:

- YIN/YANG

The usual generic term for dialectics is Yin/Yang. However, many more specific dialectics have been subsumed in this term, such as Masculine/Feminine, Concentrated/Dispersed, etc.

- INDIVIDUALIZING/HOMOGENIZING

This is a dialectic that I have never seen mentioned but that seems very pervasive. I call it Uniqueness/Equalization. There is a great struggle in the world between the forces of homogenization and the forces seeking to generate and protect uniqueness. For brevity, I have labeled these GEP, a General Equalization Principle and GUP, a General Uniqueness Principle. In physics, the second law of thermodynamics is a special case of the former, and Pauli's exclusion principle is a special case of the latter. In theology, orthodoxies are homogenizations, heresies are pursuits of uniqueness.

References: GUP/GEP 1996#69; The Glory of Uniqueness 1994#30; Kinship and Uniqueness 1991#83

- CONTACT/SEPARATION

This dialectic, sometimes called Departure/Return or named Isolation/cosmopolitanism by Chamberlain and Moulton of the University of Chicago who first enunciated it early in the present century. It was used to explain much of what happens in bio evolution. Unlike some other dialectics, it is oscillatory or time multiplexed.

- FORMING/DISSOLVING

This is the dialectic expressed in mythology by the opposition of Apollo and Dionysus. Dionysus is always escaping the forms that Apollo would capture him in. The human spirit is always escaping the prisons that the human intellect would imprison it in. This is fittingly symbolized by the bread of intellect and the wine of spirit. We must have worldviews, but we must ever abandon and transcend them. We must go from Ptolemy to Copernicus to Digges to Wright to Shapley to Hubble to ... This is also a time multiplexed dialectic.

References: Bread and Wine 1996#59;

- EXTINCTION-RADIANT ~ forming/dissolving
- SPLITTING-BRIDGING ~ departure/return
- STANDARDIZING-COMPETING
- ORDER-FREEDOM
- ACTUALIZING-POTENTIALIZING
- ETHERIALIZATION-MATERIALIZATION

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

SYMMETRY

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

DIALECTICS

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

ORTHOGONALITY

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

LIMITS

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

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

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

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

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

HIERARCHIES

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

REGRESSIONS

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

MODULAR HIERARCHIES

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

MODULATION

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

STABILITY

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

UNIQ01.W52 DISK:EPIONTOLOGY April 26, 1994

The Glory of Uniqueness

cf 91-#83 INDIVIDUATE (PST) KINSHIP & UNIQUENESS

There is one glory of the sun, and another glory of the moon, and another glory of the stars: for one star differeth from another in glory.

I Cor 15: 41

In the age of science our focus is directed to the commonalities that appear to underlie the phenomena of experience. We seek to make generalizations from our experience, looking for fundamental laws that govern the behavior of the universe and its contents. We significate the processes of stellar and bio evolution and try to predict their outcomes. We attempt to formulate the archetypes that script the patterns and processes that unfold in the world and speculate on their eschatological 'omega point'. The driving force behind this epistemological approach is a **monistic** world view. The universe is **one** as the etymology of the word declares. Not only does our science seek grand unified theories, but our religions insist there must be **one** God, **one** faith, **one** people, [And our politics, **ein** Volk, **ein** Reich, **ein** Fuhrer]. However, since the pluralistic nature of phenomena cannot be ignored, the monistic worldview must resort to declaring what is significant in the world to be the commonalities in its processes and patterns, for the commonalities are **one**, while the differences are many.

Attractors?

Our monistic worldview celebrates the winner because the winner is **one** while the losers are many. The monistic worldview institutes orthodoxy and its derivative heresy. There must be **one** correct or superior way, the others are to be eschewed or obliterated. The truth must be like a pole, not like a tree having many branches. And certainly not like a forest of many trees (or even poles). Finally, there must be **one** superior race, religion, gender.

But what if Brahma created the world, not to see how it would end, but to enjoy the myriad variety that it could produce? What if it is not the commonalities and generalizations, but the variety and uniqueness that is of importance? What if the significant is not the theme itself but the possible variations on the theme; not the similarities, but the peculiarities; not the Boolean intersect, but the join or the join minus the intersect? How would this worldview change our institutions and lives?

Perhaps we would look not for **the** solution, but for the totality of solutions, not for **the** answer, but for the totality of answers. Perhaps we would honor all those who contended and did not win. Honor those who were rejected, disdained, oppressed, ignored, ridiculed, persecuted, burned at the stake, crucified. Celebrate all the branches that have been pruned, all the alternatives not selected, all the paths left unexplored, all the facets ignored. Celebrate the wisdom of each species, the uniqueness of each life, the glory of each star.

all the causes lost

Centurion Old

See also OVMATCH1.WPW 1993 #53

Savor the uniqueness of every object and movement
and the complex web of destinies linking them.

Zen ? p29

GVP

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

Remarks of Dunwich

EXPLORATION AND CREATION

TWO VARIETIES OF EXPLORATION:
1) The Search for the Common, the General, the Ubiquitous, the Repetitive, the Reproducible, and the Universal;
2) The Search for the Individual, the Unique, the Special, the Rare, the Miraculous, and the Possible. The alternatives

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

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

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

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

THE GENERAL UNIQUENESS PRINCIPLE

Once we talked about why Brahma created the world and asked what he had in mind in doing it. Of course, from where we stand, we cannot read Brahma's mind or ascertain his purposes. All we, who are imbedded in his world, can do is look at what is and what happens and try to figure it out. If it is true, as has been said, that we were created in his image, then we should be able to think it out the way he did. Anyway, keeping in mind it is always speculation, let's give it a try:

Since Brahma knew the algorithms he laid out and their consequences, what could he learn from running the program? Maybe he just enjoyed it as some sort of game, but then if all were determined, the outcome was known in advance, so why? It seems as though the answer to this may lie in Brahma was looking for something not known beforehand. He set up and knew the initial conditions and boundary conditions--the theme, so to speak, but he was interested in the details, the variations on the theme that might occur. The boundaries were fixed, but what could happen within those boundaries could take countless paths and forms. It was these possibilities that fascinated Brahma. And if variety was what Brahma sought, then in some way he had to include in his algorithms a way to protect it.

But as we look at the world, it seems that the algorithims threaten variety. We have observed a tendency toward homogenization, which we have labeled the second law of thermodynamics. Over time all seems to come to the same temperature, to reach a condition where no more exchanges take place. Exchanges can occur only between modules that are different, and every exchange reduces differences. So in time, when the modules become the same they have nothing to say to each other. Eddington has said that uniform sameness is the equivalent of non-existence. So a completely homogenized world would cease to exist.

But besides the second law of thermodynamics, other algorithms exist. One of these was noted by Wolfgang Pauli, and is called the Pauli Exclusion Principle. This says that no two atoms can be in exactly the same state. Their defining parameters must always assume different values.
This kind of exclusion reminds us of a very common exclusion observed on the macro level: No two material objects can occupy the same space at the same time. Here the parameters are space and time. Perhaps these two exclusion principles are part of a more general, more comprehensive exclusion principle: **No two entities in the universe are allowed to be exactly the same.** [We shall call this the General uniqueness Principle or GUP]

But here we seem to have algorithms in conflict. The second law tending toward homogenization and the general uniqueness principle [GUP] opposing it. What happens when these opposing principles interact? When two entities, after many exchanges are down to but a single difference, and when one additional exchange would make them the same, and thus come into violation of the GUP, then they could combine and the two become one, an unique entity that did not exist before. Thus the interaction of the second law and GUP effects morphogenesis. The refuge of entities about to suffer the fate of Eddington's principle is to build complexity !

But preservation of uniqueness alone would not assure Brahma of having his variety. It is also necessary that something new be created.

The Pauli Exclusion Principle:

In an atom there can never be two or more electrons with the same 4 quantum numbers.

The 4 quantum numbers defining orbits:

s	spin	rotation +, −
n	shell	~ energy
l		~ angular momentum, revolution
m	tilt	inclination of orbit

Uniqueness in atoms is basic to chemical bonding, the formation of molecules, i.e. → complexity

See also 1995 #25 Gurdieff's Cosmogony, + Heisenberg quote
Successive Removal of Constraints allowing access to potential

See
Some notes on back of 1996 #45 re Science & the already homogenized

> Brahma, the Creator of Worlds, who is the Alpha and the Omega, the positor of beginnings and endings, the designer of all themes, seeks in all worlds what variations are possible on the themes. Bhahma knows the denouement of worlds; what Brahma does not know are the possible alternatives that may occur within a theme. Brahma is fascinated with the unique, and with the variety of actualizations that can occur within the set bounds of potentiality.

A human has to feel special in order to fully function. It is important for us to feel that we are in some way unique, we have a special function to perform, a special role to play, a special gift to give. This is the essence of what we call 'meaning'. Mature parents inculcate in their children that they are special; that they are to be or do something someday that no one else can be or do. They are unique. An important part of the teaching of each religion is to assure its adherents that they are special: they are created in the image of God, they are Chosen, they are among those who in the last days will be saved, etc. Successful politicians impress on their followers that they are special, they are members of the master race, they alone have a special heritage, the future belongs to them. Advertisers exploit by assuring you that you become special when you buy their product. Our sacred and secular traditions convince us that we are special as a species, special as belonging to some particular group, special as a person living in some particular place or time. Because of Brahma's interest in alternatives, we have been suffused with the drive to be unique. This is what lies behind our cherishing of freedom, for only with freedom can we develop our uniqueness.

We see the importance of all of this when the sense of being special is taken away. When we are dissed, get no respect, aren't needed, are denied access to markets and membership in groups. To remedy this we set up gangs, we get guns, they get us respect. What is it that happens that takes away our sense of specialness? There are many forces out there operating to do just that. These are the forces of homogenization. Some are philosophical, some social, some psychological, and some even physical. Philosophical ideas that have reduced our sense of uniqueness have been Copernicus taking away our central position in the universe, Darwin taking away that we were specially created, modern astronomy scaling us to minuteness, and modern views equating us to animals, mechanisms, computers. Monopolies and mergers reduce umiqueness; the trend from home town to megopolis to global village has reduced and homogenized us. The ubiquitous action of the second law of thermodynamics is homogenizing the world to one temperature, even gravity can act to homogenize all matter into one singularity.

The great dialectial struggle in the universe then shapes up to be not good against evil, but uniqueness against homogenization.

UNIQUENESS

INDWHITE.P51 DISK:SCRAPS → COSMATE July 13, 1991

KINSHIP ↔

(PHA of Discovering America)

But there is a curious paradox in this. In those aspects where the Indian emphasizes uniqueness, as with individual humans, the white man seeks to garberize* by emphasizing commonalities for the purpose of generalizations. On the other hand where the Indian seeks to bridge differences, as in the concept of universal kinship of all animate (and inanimate) creatures, the white man seeks rigid distinctions as with the scala of rocks, plants, animals, man. When using the scientific approach the white man is concerned with the likeness of chimps and humans, when using the macho approach, the white man wishes no kinship. Superiority is the essence to be preserved. In both cultures there is a blurred line between uniqueness and kinship. In the Indian cultures, the ultimate emphasis is on kinship; In the white cultures, the ultimate emphasis is on elitism.

For Indians the dichotomy is kinship and uniqueness.
For the white man the dichotomy is commonality and elitism. It is the same dichotomy, but the choice of words leads to an entirely different attitudinal approach.

kinship ↔ diversity
commonality ↔ elitism

For the Indian, diversity does not contain the imperative of elitism, of a ladder of superior/inferior, as it does for the white man. For the white man, commonalities do not contain the concept of kinship, as for the Indian.

garberize
~~garberize~~ = remove distinctions + discriminations

SPECIFIC DIALECTICAL PROCESSES

GUPSUB.WP6

PARAGRAPHS ON GUP, A GENERAL UNIQUENESS PRINCIPLE

Date[**02-02-97**] Number[10
Note[The basic Zarathustrian struggle in the universe is between variety and homogenization. The drive for Uniqueness is oftimes thought of as freedom.

Date[**02-02-97**] Number[13
Note[It is important that the preservation and drive for uniqueness be exercised within bounds. That is to say, "Don't be too unique". The metaphor of Toynbee's climbers on the cliff illustrates this. It is dangerous for the entire party when any get too separated.

Date[**02-02-97**] Number[14
Note[Homogenization forces appear to be of two general types.
1) Those that tend to bring all the values of a certain parameter to a single value. Gravity attempts to bring the positions of masses to a single point. The second law of thermodynamics attempts to bring temperature throughout the system to one value. Further, when a parameter contains only one value, then it ceases to be a parameter. Thus if type 1) homogenization succeeds in reducing all values to the same value it then effects the elimination of a parameter.
2) Decay, fragmentation, and the destruction of order are also forms of homogenization.
Extinction is ultimate homogenization. and the ultimate homogenization results in extinction.
It seems paradoxical that the destruction of order and the ordering of, say, position are both forms of homogenization. The ultimate definition of homogenization is the destruction of uniqueness. Thus both --> order and --> disorder are both homogenization!
We may think of there being Yin homogenization, scattering to one condition and Yang homogenization, focusing or gathering to one condition. Gravity is a Yang homogenization, decay is a Yin homogenization.

Date[**02-02-97**] Number[15
\Note[Uniqueness begins after a certain level of complexity is reached.
Every particle of soil is unique, this is what allows life.
Compound things are subject to decay. ----the Buddha

Date[**02-03-97**] Number[16
Note["The fluidity of a liquid is a consequence of its molecular irregularity." --J.D.Bernal
This infers that homogenization moves from gas to liquid to solid. That is to lowering of temperature. Solids consist of identical regular molecules locked into crystalline regularity. The concepts of unique, irregular, irregular, identical, are steps in the scale of homogenization,.
The regular is semi-homogenized. and the irregular is partially homogenized
6 close packs, semi-regular
5 does not close pack, phi, ==> growth, complexity => odd is less homogenized than even.
The highly homogenized resorts to complexity rather than extinction, but in the example of the musical scale being built of odd harmonics, complexity comes from the less homogenized.
Note[Uniqueness begins after a certain level of complexity is reached.

Find other stuff on Vectors

PRODPROC.WPD March 25, 2005

CONCERNING VECTOR DYADS [PART I]

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

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

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

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

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

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

#22

EMERGOl.WP6 APRIL 3, 1997; rev May 1, 1997

ON EMERGENCE

EMERGENCE: THE CREATION OF SOMETHING NEW, IN BOTH ITS TEMPLATE AND ITS MANIFESTATION LEVELS. or THE DESTRUCTION OF INHIBITORS THAT FORBAD SOMETHING THAT ALREADY EXISTED IN ARCHETYPE OR TEMPLATE FORM TO BECOME MANIFEST.

We begin with a set of experiences, say those that are permitted by our biological structure. Soon some of these are emphasized (usually those with a large repetition rate) which results in the negation of others. This is like a rut in the side of a hill. The future flow of water will choose these existing ruts and develop them into gorges. Which is to say that whatever is selected operates through the Principle of Plenitude, confirming itself and blocking other choices. or as the Law of Hardening puts it, whenever information concerning a particular area is extracted this precludes information being extracted from other areas. That is, SELECTION CREATES INHIBITORS, which is to say that selection destroys access to that which is not selected. This process results in an ever narrowing and increasingly static world.

We may paraphrase the Law of Hardening: ACTUALIZATION REDUCES POTENTIAL, this not only in the sense of fulfilling potential, but in actually recucing remaining potential. Ultimately when actualization through successive selections has completely exhausted potential, an extinction occurs. The inhibitors are destroyed and a new potential becomes available. With the slate wiped clean, a new emergence can occur. This is an iterative process: Emergence, Selection, Actualization, Extinction. Thus to keep the world from ossifying, the circumvention of the law of hardening involves the necessity of extinctions, mortality, and death. Something existing must be sacrificed in order that something not yet existing can be born,

WITHOUT AN EXTINCTION THERE CAN BE NO RADIANT. [cf Rubik's CUBE]

The law of hardening and the emergence-selection actualization-extinction cycle also apply to natural selection and bio evolution. Natural selection by itself cannot generate new species. Its ultimate results are to fulfill and exploit the possibilities inherent in what already exists, that is, to fill all the existing niches. of course, it is not quite this simple, since the evolution of species also effects and alters the gestalt context in which the evolution is taking place, which in turn alters the path of evolution. In time the changes reach the boundaries of the potential. Then there is either stasis, no further evolution, (turtles), or an extinction occurs that liberates the configuration allowing for the emergence of new species.

#29

PERCON01.WP6 May 12, 1997

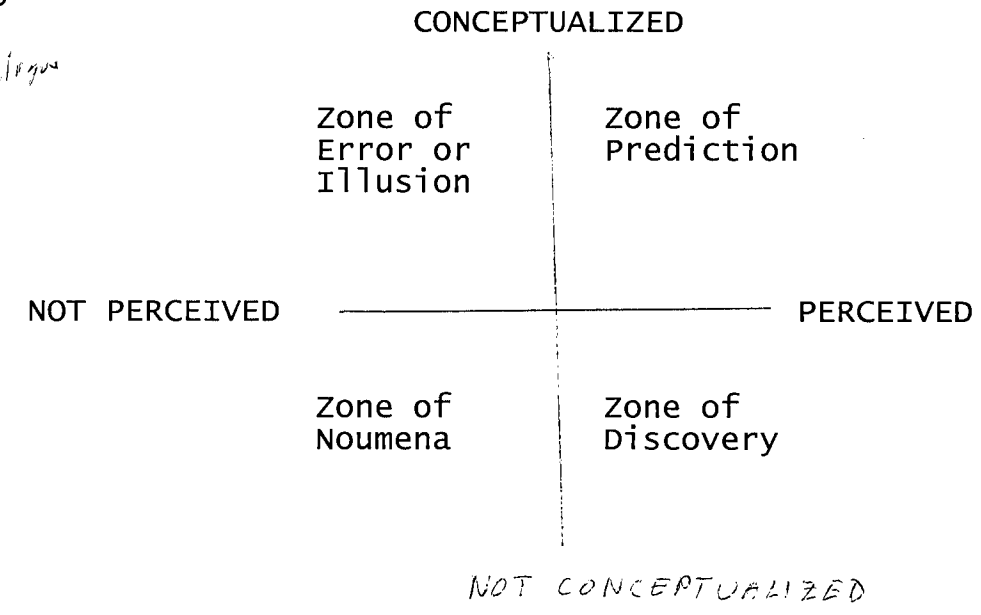
CONCEPTION AND PERCEPTION

Which came first, the perception or the conception, the chicken or egg? In our century we have in the theory of general relativity an example of a conception coming first. This conception leads us to see things like black holes which very likely would not be perceived without their having been predicted by the conception. We also have the Hubble space telescope which is showing us objects like the birth nests of stars, cosmic forms that we did not know existed, that were not predicted by any conception. Mostly perception and conception are like the two snakes on the caduceus, they intertwine and lead to new knowledge. However, as perceptions collect, their usefullness requires cataloging, requires a conceptualization. And after a formal conceptualization has been made the trouble starts.

The old adage, "Seeing is believing", governs the epistemological zone where concepts are open ended, and everything perceived contributes to the formation of the concept 'catalog'. If something is not in the catalog, it can be added provided the catalog can subsume it. But the "Law of Hardening" says that it will become increasingly difficult to add items as their number mounts. In time things perceived that have no alloted conceptual space will not be granted admission. We become restricted to the epistemological zone where the adage, "Believing is seeing" dominates. What is not believed, i.e. not in the catalog, will not be seen.

It is interesting to look at this in the form of a quadric diagram:

place in th concept catalogue



A CONCEPTION FIRST DIAGRAM

#33

3ONTOL01.WP6 May 24, 1997

MORE ONTOLOGIES

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

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

How best to describe a SELECTION ontology?

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

and exploring mandates freedom to survey every portion of the terrain.

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

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

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

OBJECTIVE
CONTEXTUAL
SELECTION

NEWTON
WHEELER
SZILARD

EXPLORE
CREATE

SELECT

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

DIALECT2.WP6 June 29, 1997

DIALECTICS from BRAHM01.WP6

These are the forces of change, oftimes being adversarial pairs obeying Newton's Third Law, "to every force there is an equal and opposite reaction". At other times dialectical forces may be mutually supportive in which case they are temporally multiplexed thus avoiding Newton's third law. In the case of opposing forces novelty occurs at the interface, in the case of supportive forces, the action is in effect an "engine" producing some form of change. (from Brahm01.wp6)

FROM DIAL01.WP6 June 19, 1997

Dialectics are a sub-class of dyads. In particular those dyads that consist of forces or principles that operate to effect change. They manifest either as trends or sudden leaps. They may be classified according to the following parameters:

- Adversarial or cooperative
- Time multiplexed
- Driven or passive (McShea)

Among the most important dialectics are those effecting the increase of variation and uniqueness opposed by those effecting homogenization.

FROM DIALSUB.WP6

PARAGRAPHS FROM SUBSCRAPS ON DIALECTICS

TDMA DIALECTICS NUMBER 18 02-03-97

Note[The species of departure and return:

The two levels of an epistemology, the infra structure and the experiences
that is, address and content
Vertical mitosis. Split to find union
Genotype, and Phenotype
Template and Manifestation or realization
Wave and Particle (this may not be a temporal dyad)
Crossing the determinator
Freezing
Exist and Non-exist
Sound and Silence in music
Isolation and Cosmopolitanism (The original Chamberlain departure and return)

Is there a basic pulse between some + and - that underlies all in the universe? Is there a fundamental metronome mother of all departure and return with a frequency of ten to the 42 power hertz?

From which no longer exists

DIALECT1.WP6 APRIL 3, 1997; REV MAY 1, 1997

DIALECTICS:
Forces, energies, or principles that work with or against one another. The interaction of these 'opposites' effects emergence, i.e. creation, either at an interface or through synthesis. Or the result may be obliteration or extinction. Or inhibitors may be destroyed, releasing energy and increasing potential. A new level emerges, or a new world created. Dialectics are 'engines' that generate complexity.

Some references:

EXTINCTION/RADIANT, FORMING/DISOLVING
1996#63,1996#52,1997#21,1997#22

SPLITTING/BRIDGING, DEPARTURE/RETURN
1994#40,1993#26,1993#49,1991#13 also material in travel books

STANDARDIZING/COMPETITION
1996#66

ORDER/FREEDOM
1991#109

ETHERIALIZATION/MATERIALIZATION
1994#26,1991#63,1993#15,1993#49,1991#13

ACTUALIZING/POTENTIALIZING

NOTES:
STABILITY: MINIMIZATION OF TRAFFIC FLOW ACROSS BOUNDARIES
CURVATURE: K=0,FLAT;K>0, CLOSED ELLIPSOIDAL;
K<0 OPEN,HYPERBOLIC
FLAT SPACE HAS THE PROPERTY THAT SCALE AND FORM ARE INDEPENDENT. ALSO GEODESICS NEED NOT INTERSECT.
MULTIPLEX: PARALLEL/SERIES FDMA~PARALLEL? TDMA~SERIES?
REPETITION: CYCLICAL, ITERATIVE, RECURSIVE, REGRESSIVE
CYCLES,ITERATION,RECURSION,REGRESSION
CIRCLES,SPIRALS,HOLOGRAMS,FRACTALS,
TWO SPECIES OF RECURSION: WHOLE --> PART ~ FRACTAL
PART --> WHOLE ~ EXTRACTION,DISTILLATION, CANCER

DIALSUB.WP6

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Variety/homogenization
Variety/complexity
2 principles of plenitude: 1) Lovejoy's (Great Chain of Being) → variety
create + fill every niche
2) Cancer cell → homogenization
Continuous/Discrete
Order/freedom
Unity/Fragmentation
homogenization → organism, complexity
or extinction
Order/organization Cosmos B.P. p75
Turbulence/speed p73
Crystalline/Bio p74

Define Complexity!
nodes?
links?
Traffic?

0 triad
politics
/ \
finance — culture

Music
/ \
Myth — Math

D

• ITERDIAL.WPD JUNE 22, 2000

ITERATED DIALECTICS

The original meaning of the term *dialectics* was the exchange of questions and answers, the method used by Socrates to develop deeper insights and understanding. Plato proposed a similar iterative process for the acquisition of more comprehensive hypotheses for explaining sets of phenomena. Following the Greeks, several centuries elapsed before the idea of iterated exchanges was again taken up. It was revived in a modified form by G. W. F. Hegel (1770-1831) who placed two contrary propositions in juxtaposition to produce a more inclusive proposition. Hegel called these contrary or opposing positions *thesis* and *antithesis* and the resulting product, *synthesis*. Hegel also held to the notion of iteration: a synthesis resulting from an earlier dialectic would become the thesis for a new dialectic. He also evidently subscribed to Newton's third law, that to every action there was an opposite reaction, if so no thesis would ever find itself without an antithesis. But Hegel was careful to discriminate between contraries and contradictions. The dialectic process would only work with contrary or opposing ideas not with contradictory ideas. In other words the ideas had to face each other in the same arena, not walk past each other.

While Hegel's dialectics focused on contrary theses, Karl Marx extended dialectical interactions to struggles between categories, such as the struggle of man against nature. The man <—> nature interaction he named *dialectical materialism*. Marx became fascinated with struggles and with the help of Friedrich Engels focused dialectical materialism on the economic realm and the struggle between social classes. But a prize fight, a war, a class struggle is not a dialectic. There are winners and losers but rarely a synthesis or emergence, and except for revenge no iteration. Marx' ideas when put into practice resulted in dystopias not utopias. But unfortunately the term dialectics became associated with Marx and Communism and has been largely discredited. But if we return to the methods of Socrates, Plato, and Hegel, dialectics needs to be reconsidered.

Confusing dyads with dialectics not only mislead Marx, it has been a trap for many. A dyad is a pair of opposites, (or contraries to use Hegel's term), like male/female, good/evil, yin/yang. That the two components of a dyad engage one another in itself does not effect a synthesis nor constitute the dialectical process. Zarathustra's eternal struggle between Ahura Mazda (good) and Ahriman (evil) has had neither a winner nor loser, much less a synthesis. We have no reason to expect every pair of opposites to enter into a dialectical exchange and effect an emergence. Nor is repetitive engagement the same as iteration. There are, however, different types of dialectics. In the Socratic question <–> answer dialectic, the contraries took turns. The ball went back and forth between the courts. But the thesis and antithesis may not be playing ball. They may achieve their synthesis by being continuously engaged, as are Newton's action and simultaneous reaction. Both kinds, however, are iterative. So, for there to be a dialectic there must be a pair of contraries, they must engage by exchanging, there must result a synthesis or emergence from their engagement, and there must be iteration, the new thesis and antithesis ~~being~~ the synthesis ~~from~~ coming from the previous engagement. of

Hegel's dialectic devours theses and antitheses, replacing a pair with a single synthesis. After multiple iterations, according to Hegel, this process will result in some final or absolute synthesis. But if the thesis is taken as the previous synthesis, we fairly ask, what is the source of the next antithesis? If it is just the *opposite* of the thesis, then the resulting synthesis will be a null. In a meaningful dialectical process the antithesis must be a contrary, not a contradiction, as Hegel points out. But also the contrary must not be an opposite, else the iteration terminate in $T + (-T) = 0$. [Of course zero, nothingness, extinction, is an absolute synthesis. But are there less obvious ones ?] How are useful antitheses selected in order to provide contraries that lead beyond a cipher?

The iterated dialectical process is an homogenizing process, leading to some ultimate monism, be it symbolized by zero or one. [both are species of nothingness] Consequently, we ask, Is there an "*inverse* dialectical process" that leads to the creation of variety and diversity? [Something besides splitting a zero, creation ex nihilo.] In western culture the drive to monism (a theory of everything) has been so great as to preclude our looking for processes leading to the creation of differences. [We have been so involved with the homogenizing cancer cell that we have neglected the wonders of the stem cell. Also, while a converging series goes to single value, like iterated Hegelian dialectics, some diverging series take on multiple values. A possible metaphor for an inverse dialectic?] Stephen J. Gould has claimed that bio-evolution itself is a process that creates diversity. Granting that this is so, the king pin of the process is mutation, and mutation is swept under the rug of randomness, which is about as specific and illuminating an explanation as "God did it". But if the random, or iterated random, can generate diversity, then we have ignored something of basic importance. [1]

THE TYPES OF CONVERGING DIALECTICS

Let us call Socrates' kind, "Type I "; and Newton's kind, "Type II ".
Type I has four kinds of synthesis or outcome:

- I-A Oscillatory equilibrium
- I-B Oscillatory exhaustion leading to extinction (of both contraries)
- I-C Oscillatory escalation leading to break down (of one or both contraries)
- I-D Emergence (This is the special case of Hegel's synthesis)

Type II has two kinds of synthesis or outcome:

- II-A Static equilibrium
- II-B One contrary wins the other loses. $\longrightarrow 0$, $\longrightarrow \infty$

---

[1] It can be shown that white noise modulated by white noise results in a gaussian, and iteration reduces the dispersion, on and on to a dirac function. [cf, the central limit theorem]

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~~Type I has four kinds of synthesis or outcome:~~

I-A Oscillatory equilibrium

I-B Oscillatory exhaustion leading to extinction (of both ~~contraries~~ opponents)

I-C Oscillatory escalation leading to break down (of one or both contraries)

I-D Emergence (This is the special case of Hegel's synthesis)

Type II has two kinds of synthesis or outcome:

II-A Static equilibrium In Newton's balance of force

II-B One contrary wins the other loses. —> 0 , —> ± ∞

If we will agree to restrict the term dialectic to ~~limit~~ interchanges resulting in syntheses or emergence, whatever the frequencies at which they oscillate, ~~we still have many other~~ as seen above in the case of opponents and opponents there are other types of interchanges. If we classify these by outcome, we have: these cases

But we have yet to identify what constitutes a contrary — one that leads to emergence. [which could generate variety]

beginner

→ In order to identify what attributes constitute a contrary the consensus of a interchange → emergence consider other interactions

Notations

<~~~> <···> ~~#~~ ||

<——>

<==> Page 3

THE STEPS TO TRANSFORMATION
(EMERGENT CHANGE)

1) Encounter with a Paradox,(Double Bind, Cognitive Dissonance, Catch-22)
First one must recognize or perceive the paradox situation
Once the paradox is recognized as such, one may
a) Ignore it or deny it
b) Resolve it by discarding one side of it
c) Engage it

2) Engaging the Paradox
In order to engage the paradox, one must contain both sides of it
One must live with the contradiction, sustain the ambiguity.
The paradox must be "worked on". Tools for working on a paradox (or preparing for transformation) include:
a) Disolving one's prejudices, unlearning one's worldview, disbelieving one's belief system, becoming ignorant and childlike.
i. Questioning all assumptions and presuppositions including the obvious, the commonplace, and the widely accepted.
ii. Varying the context in which the paradox is imbedded, Imbedding the paradox in alternate contexts.

Peeling off the layers of enculturation
psychotherapy
self-reflection
Meditation

WV Solvent

b) Develop a transcendental faith beyond the currrent worldview and belief system, recognizing that help from outside is both necessary and available.
c) Sustain the paradox of faith and disbelief (the paradox within the paradox)

3) The "INSIGHT"
The steps 1) and 2) involved the will and effort of the person. Step 3) is neither plannable nor executable. It is only receivable. It is a gift. It is a mystery. It comes from Outside,
It is neither deserved nor undeserved. It can only be said that,
a) Its occurrence cannot be predicted,
It may or may not happen.
b) When it happens, it happens very rapidly, almost instantly.
c) The consequences are irreversable. After the "moment" nothing will be the same and there is no possible return to the situation that existed beforehand.

4) Reintegration
After INSIGHT (Enlightenment, Samadhi, Satori, Revelation) the world must be rebuilt in accordance with the "Gift".
a) All aspects and implications must be pursued.
b) Values must be updated.
c) Contexts must be reassigned.

0) Paths to Paradox

A preliminary step, Step 0), must be included. However this step cannot be overtly discussed until after discussing the subsequent four steps.

The basic question is 'how are we led to paradox?'

Various experiences in life expose us to paradox.

Among these are:

a) A Glimpse of the "Other". To know something exists The realization that things are not as they seem, but that we live in illusions.

b) A crisis of health, estate, loss, failure

c) An experience planned for us by a teacher.

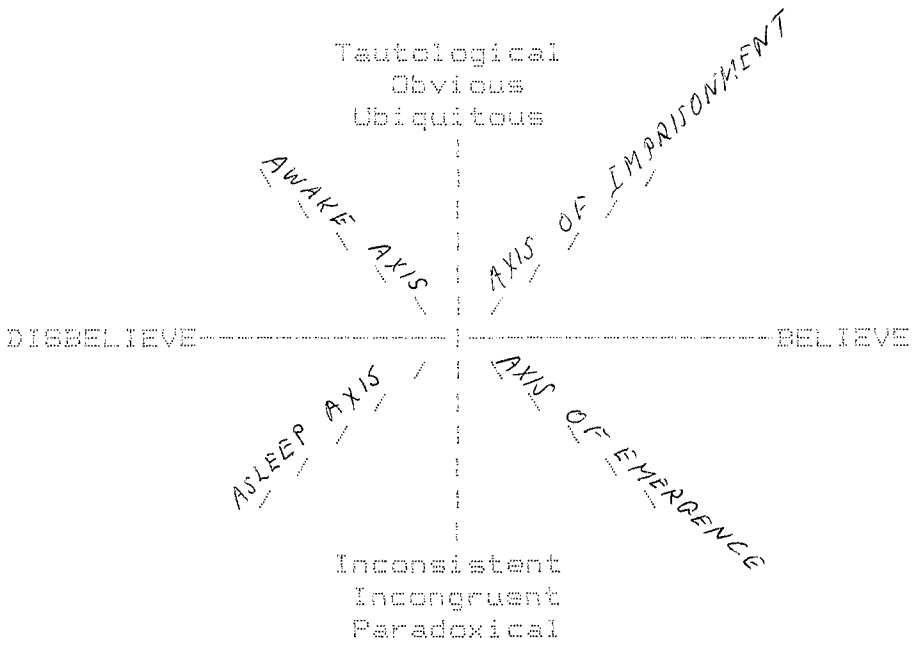
d) Just happens (like step 3) (from outside)

It is seen in the above description of the transformation process that several levels of self-reference may be involved. That is, the process is iterative, paradoxes are nested and the steps 0) and 3) may be like the sam sub-routine. It is the mystery of the nested elements that is the clue to processes of this nature. We possess no logic, no mathematics, no symbolisms for articulating these processes. For this reason among others the subsuming of emergence by humanity has been beyond our capability. And the presence of external elements in the process takes it beyond our usual epistemologies and modes of understanding. We are left with faith--faith as a step in the process, and Faith as our only possible description of the process.

The Cross Dialectic in Transformation

The OHo Cycle in Transformation

QUADRIC MANDALA
for
TRANSFORMATION



THERE ARE TWO KEYS TO OUR PRISON:

1) PURSUE PARADOX (The Unique)
2) TEST TAUTOLOGY (The Commonplace)

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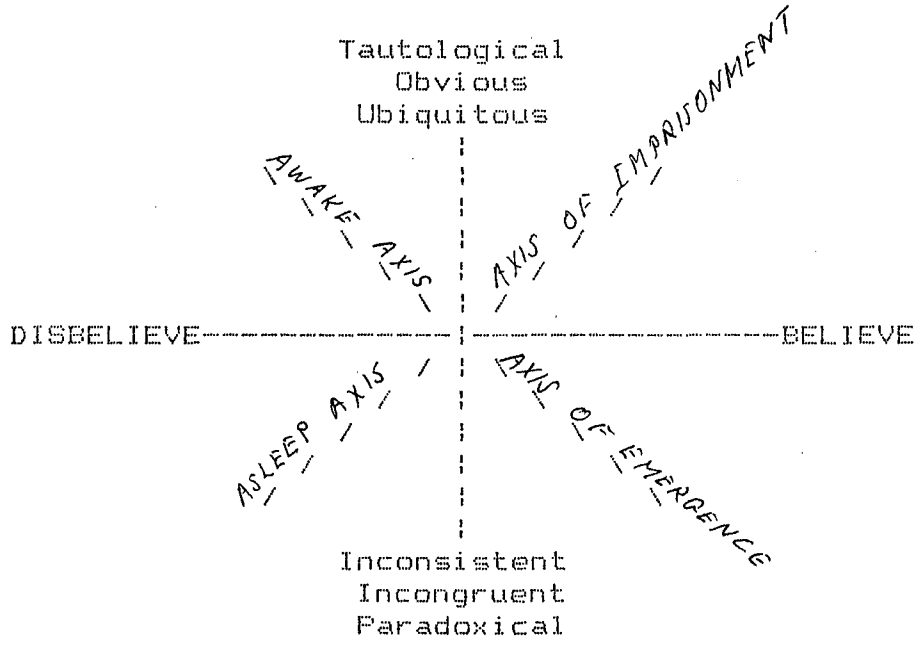
Q U A D R I C M A N D A L A
for
T R A N S F O R M A T I O N



THERE ARE TWO KEYS TO OUR PRISON:
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biology was more in 'balance' with the universe, then our perception of the universe might have been scalewise limited for all time to the narrow neighborhood set by our balanced units.

The units we use to measure the universe of our experience we have derived from our own biological structure: from the length of our fingers, our feet and our arms, and from the rates of our eye movement, our pulse and our breathing. This makes good sense because we wish to relate what we see and experience to that with which we are most familiar--ourselves. We have related ourselves in space and time by comparing the dimensions of our bodies with the dimensions of the objects and phenomena about us, and as our experience extends we multiply and divide our units to give new ones of more convenience.

However the measure of the world in inches (or centimeters) and seconds has shown that that portion of the world we first experienced is spatially and temporally biased with respect to the gestalt ~~the~~ natural order. Our units are quite satisfactory for measuring things of our ~~scale~~ SIZE. But When we consider systems much smaller than the scale of our bodies, our temporal units become too large, and when we consider systems larger than our scale, our temporal units become too small.

Humans operate primarily in a mechanical/acoustical (i.e. in the inertial/gravitational) universe rather than in the electromagnetic/radiative universe and this creates a distinct bias in how we describe and measure the world. We may see this bias in the units we use for measuring the velocity of light. If we were in a 'balanced' position between the e/r and i/g universes, the velocity of light would be a few space units per time unit. Instead, in terms of our common spatial unit of the centimeter and common temporal unit of the second the velocity of light turns out to be 3Ø,ØØØ,ØØØ,ØØØ cm/sec (3 x 1Ø^1Ø cm/sec), indicating a bias toward the spatially small and/or temporally large with respect to the e/r universe. When we measure the universe itself we find that its observable limits are something like 1Ø^27 cm and its age is something like 1Ø^1Ø years or 1Ø^17 seconds, again the ratio of units, space to time, is about 1Ø^1Ø.

(6)

(7)

our space/time relation becomes biased

(2)

ARCHETYPE

"In former times, despite some dissenting opinion and the influence of Aristotle, it was not too difficult to understand Plato's conception of the Idea (εἶδος) as supraordinate and pre-existent to all phenomena. "Archetype," far from being a modern term, was already in use before the time of St. Augustine, and was synonymous with "Idea" in the Platonic usage. When the *Corpus Hermeticum,* which probably dates from the third century, describes God as the 'archetypal light,' it expresses the idea that he is the prototype of all light; that is to say, pre-existent and supraordinate to the phenomenon "light." Were I a philosopher, I should continue in this Platonic strain and say: Somewhere, in "a place beyond the skies," there is a prototype or primordial image of the mother that is pre-existent and supraordinate to all phenomena in which the "maternal," in the broadest sense of the term, is manifest. But I am an empiricist, not a philosopher;...As an empiricist, I must point out that there is a temperament which regards ideas as real entities and not merely as *nomina*. It so happens...that for the past two hundred years we have been living in an age in which it has become unpopular or even unintelligible to suppose that ideas could be anything but *nomina*. Anyone who continues to think as Plato did must pay for his anachronism by seeing the "supracelestial," i.e., metaphysical, essence of the Idea relegated to the unverifiable realm of faith and superstition, or charitably left to the poet../in the age-old controversy over universals, the nominalistic standpoint has triumphed...by the marked rise of empiricism...Since that time the Idea is no longer something *a priori,* but is secondary and derived.

"Yet every victory contains the germ of future defeat. In our own day, ... the conviction has gradually gained ground that thinking, understanding, and reasoning cannot be regarded as independent processes subject only to the eternal laws of logic, but that they are *psychic functions* co-ordinated with the personality and subordinate to it... we are convinced that in all fields of knowledge psychological premises exist which exert a decisive influence upon the choice of material, the method of investigation, the nature of the conclusions, and the formulation of hypotheses and theories....the criticial standpoint here defined is inescapable. It constitutes the essence, origin, and method of modern

psychology. There *is* an *a priori* factor in all human activities, namely the inborn, preconscious and unconscious individual structure of the psyche. The preconscious psyche, e.g., that of a new-born infant, is not an empty vessel into which, under favourable conditions, practically anything can be poured. On the contrary, it is a tremendously complicated, sharply defined individual entity which appears indeterminate to us only because we cannot see it directly. But the moment the first visible manifestations of psychic life begin to appear, one would have to be blind not to recognize their individual character, that is, the unique personality behind them. It is hardly possible to suppose that all these details come into being only at the moment in which they appear. ...The idea that it is not inherited but comes into being in every child anew would be just as preposterous as the primitive belief that the sun which rises in the morning is a different sun from that which set the evening before.

"Since everything psychic is preformed, this must also be true of the individual functions, expecially those which derive directly from the unconscious predisposition. The most important of these is creative fantasy. In the products of fantasy the primordial images are made visible, and it is here that the concept of the archetype finds its specific application. I do not claim to have been the first to point our this fact. The honour belongs to Plato....If I have any share in these discoveries, it consists in my having shown that archetypes are not desseminated only by tradition, language, and migration, but that they can rearise spontaneously, at any time, at any place, and without any outside influence. The far-reaching implications of this statement must not be overlooked. For it means that there are present in every psyche forms which are unconscious but nonetheless active -- living dispositions, ideas in the Platonic sense, that preform and continually influence our thoughts and feelings and actions.

"...archetypes are not determined as regards their content, but only as regards their form...it is determined as to its content only when it has become conscious and is therefore filled out with the material of conscious experience. Its form...might be compared to the axial system of a crystal which, as it were, preforms the crystalline strucutre in the mother liquid, although it has no material existence of its own. The axial structure of a crystal appears according to the specific way in

which ions and molecules aggregate. The archetype in itself is empty and purely formal, a possibility of representation which is given *a priori*. The representations themselves are not inherited, only the forms, and in that respect they correspond in every way to the instincts, which are also determined in form only. The existence of the instincts can no more be proved that the existence of the archetypes, so long as they do not manifest themselves...our comparison with the crystal is illuminating inasmuch as the axial system determines only the stereometric strucutre but not the concrete form of the individual crystal. This may be either large or small, and it may vary endlessly by reason of the different size of its planes or by the growing together of two crystals. The only thing that remains constant is the axial system, or rather, the invariable geometric proportions underlying it. The same is true of the archetype...it can be named and has an invariable nucleus of meaning, but never as regards its concrete manifestation. In the same way, the specific appearance of the mother-image at any given time cannot be deduced from the mother archetype alone, but depends on innumerable other factors.

("On the Concept of the Archetype," C.G. Jung, Collected Works, Vol 9, Part 1, pp.75-80, New York; Pantheon Books, Bollingen Series XX, 1959.)

CHANGE

1980 PERSPECTIVES

1989 — 1990

THE SPECIES OF DETERMINANCY: A SPECTRUM FROM LINEAR TO RANDOM

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

NOTES:

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

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

PATTERN IN TERMS OF PREVIOUS HISTORY:

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

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

LAW OF HARDENING

THE DEGREE OF ORGANIZATION AXIS

open loose organized locked

chaotic _____ linear

impotent sterile

YIN YANG

THERMO-EQUIL. HARDENED

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

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

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

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

CHANGE3.WS1 BHD:\WS FAST AND SLOW UNIVERSES OCTOBER 26, 1986

Just as spatially, there must be figure and ground, so temporally there must be figure and ground. In temporal patterns this is achieved by a fast time system and a slow time system. In the human body, for example, the fast time system is the nervous system and the slow system is the motor system. In a railroad the fast system is the telegraph system, the slow system is the train system. In an airline the fast system is the radio-radar communication system and the slow system is the aircrraft transportation system. The two systems are linked by schedules and time-tables. In the physical universe the fast system is the electromagnetic/radiative universe and the slow system is the inertial/gravitational universe.

If we feel that 3Ø cm or 1 foot is about the proper scale for our everyday spatial descriptions, then to remove our space-time bias we should select one nanosecond (1Ø^-9 sec) as our unit of time. The velocity of light in terms of a space unit of 3Ø cm and a time unit of 1 nanosecond is approximately equal to unity. On the other hand if we prefer to retain one second as about the proper size for a time unit, then to remove the space-time bias we should select a length of 3ØØ,ØØØ kilometers (which is roughly the distance to the moon) as our basic unit of length. The velocity of light in terms of a space unit of 3ØØ,ØØØ kilometers and a time unit of one second is approximately equal to unity. In either case we see that our local terrestial mechanical/acoustical world is quite skewed with respect to the e/r universe.

It is most interesting that human experience of the last few decades, in moving beyond old frontiers into a more basic interaction with the physical world, has found that our everyday units are not the best ones for measuring the natural order. Take two examples: In the design of advanced integrated circuits, it is found that the velocity of light enters as a design constraint. In order to get operations that can be performed in a nanosecond, the length of the circut links can be but a few centimeters, so the cm/nanosecond system of units becomes a most useful one when considering high speed computer designs. Present and anticipated operations in cislunar space, on the other hand, lead us to thinking about systems whose locations are best described in terms of distance measured in light-seconds. For example, 24 hour satellites are located at a distance of about Ø.1 light-second above the earth and transmission times involved are of the order of a fifth of a second. We are learning that as we extend our domain of operations we must increasingly come into balance with the greater natural order.

Our mechanical/acoustical history has thus resulted in a bias that may be represented by a very much spatially elongated ellipsoid in space-time. However this very bias in our space-time descriptions of our experience-event region may be just the circumstance that has permitted us an awareness of the very large and very small in the universe. Had we been creatures whose

ON PATTERNS OF CHANGE

Human awareness is rooted in the detection of change, for change is essential to the stimulation and continuing operation of our senses. Not only is it through change that we perceive the world, but there must be change within change in order to sustain awareness. A drone of unvarying repetitiveness fades from our consciousness, endless repetition puts us to sleep. But fortunately we seem constructed to detect and interact with change on many levels and information is transferred to us in the hierarchy of modulations of the carrier wave and not in the ~~wave~~ carrier alone.

One of the first philosophical generalizations made concerning the nature of the world was the remarking of the ubiquity of change. Herakleidos of Miletus (c.544-484 B.C.) at the beginning of the Greek age of rational thought stressed that the general law of the universe is incessant change. Everything is flux, nothing is permanent, one can never step twice into the same river. While this is so, it was also recognized that the detection and awareness of change depended on the presence of something that was changeless. Or as we might say, a changing figure can only be perceived against a relatively changeless ground. Parmenides of Elea, a contemporary and antagonist of Herakleidos argued for the primacy of changelessness. The universe really could not change for there then would be nothing to supply the changelessness. Further, change from non-existence to existence or from existence to non-existence was impossible. In these purely rational arguments of the Ionians and Eleatics we can detect the embryonic notions of relativity and the conservation of matter and energy struggling for articuation long before physical experiments gave them sharper formulation. We may well suspect that what we see in the world today is only that which has previously been present in our thought.

Einstein: We cannot establish absolute rest
Thus Heraclides change can
only be with regard to/from other
which replaces Parmenidean
absolutism
Thus Tu Other becomes a necessary ground
for any figure to be perceived or experienced
Keshoba finds the "unified ground" i.e. the
ground to give existence to experience

CHANGE2.WS1 BHD:\WS ON PATTERNS OF CHANGE OCTOBER 23, 1986

FAST AND SLOW COMPONENTS OF SYSTEMS:

Just as spatial patterns require an extensive uniform ground as a backdrop against which to detect figures, and temporal patterns require a relatively changeless ground as backdrop for detection of changing figures, systems require the two levels of ground and figure in order to function. These are usually a fast component and a slow component, the fast component forming the ground for the slow component. (which seems backwards).

As with many figure/ground combinations, figure may be perceived as ground and v.v.

How is it that the fast system is the ground for the slow?

The two energies

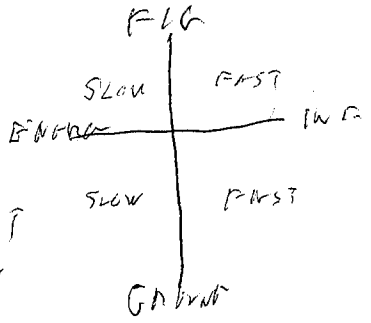
$h\nu$ Fast - radiation

$\frac{1}{2}mv^2$ Slow - gravitational/inertial

In the environment N/S → radiation light & darkness

E/W → mechanical E/G inertial & gravitational acceleration & deceleration

expect pull up at noon but pull up is late



INFORMATIO LEVEL FAST

ENERGY LEVEL SLOW

GROUND

OVERVIEW

GENERAL TOPICS UNDER THE MORPHOLOGY OF CHANGE

THE MORPHOLOGY OF CHANGE

The list of the various types and categories of change.
The parameterization of the categories
The morphological matrix

Classes of Change

continuous/discontinuous
- o relative characteristic times fast/slow
- o innovation/intervention

deterministic-causalistic/finalistic/probabilistic
- o causal-determined is representable by a trajectory.

cybernetic/one-level

process/goal
- o process governed is representable by a differential equation

archetypal

intentional
- o optioned

evolution
- o adaptation
- o emergence

purposeful

subject to an extremum principle

OVERVIEW

APPROACHES TO CHANGE:

STOCHASTIC APPROACH

A kinematic ensemble is regarded as a representation of a stable entity. The details and elements may fluctuate but the ensemble is in-the-large unvarying. A dynamic ensemble is a kinematic ensemble that changes in-the-large. An example is a gene pool. The k.e. changes either due to the operation of an external force (e.g. environmental changes) or to the development of internal imbalances in the k.e. (e.g. mutations). Both of these changes are of the nature of adaptive changes, not emergent changes.

CYBERNETIC APPROACH

GENERAL SYSTEMS APPROACH

ARCHETYPAL APPROACH

GEOMETRIC APPROACH

The observation of nature shows the presence of certain patterns or structures in widely diverse instances. For example, the presence of logarithmic spirals in certain types of galaxies and in the structure of pine cones, sea shells and foliations; the presence of fibonacci sequences in foliations, and patterns of growth; the presence of sigmoidal curves in bio, economic, societal, and technological growth. In addition certain special numerical values occur in ratios of measurements made in widely diverse areas of nature. Most commonly found are pi and e, and more restrictedly the golden ratio. These observations and their geometric abstractions have been studied for centuries and have been a source of fascination to researchers and speculators almost becoming a branch of pure mathematics like number theory.

An open question is: Can these ubiquitous phenomena, represented by the above abstractions, be explained by some sort of variational principle? For example, what extremal path is represented by the logarithmic spiral, if any? A second question is: Are certain functions, curves and ratios characteristic of certain levels of organization? While pi and e occur on all phenomenological levels, does the presence of the golden ratio indicate a level of organization at least that of plant life? In general, what can be learned of the processes of evolution through the study of the properties of this "number theory of nature"?

GSTCHNGE

GENERAL SYSTEMS THEORY APPROACH TO CHANGE

The First or Horizontal Dichotomy

Intra-level proliferation of types (differentiation)

The primaries are patterns in space-time: **structure** and **change.**

A table of analogues of the dichotomy:

PATTERN	CHANGE
SPACE-LIKE	TIME-LIKE
INFORMATION-LIKE	ENERGY-LIKE
STRUCTURED	FLUID
SLOW	FAST
NODE-LIKE	LINK-LIKE
ADAPTIVE	EMERGENT
PARMENIDES	HERAKLEIDOS
DISCRETE	CONTINUOUS
STABLE	UNSTABLE
PERSIST	EXIST
EIGEN	ERGODIC
FORM	FIELD/FORCE
STRUCTURE	PROCESS

The division between the domains is analogous to the Balmer jump in the spectrum of hydrogen--a watershed between the discrete and the continuous portion of the spectrum. In relativity, the watershed is between time-like trajectories and space-like trajectories divided by the velocity of light. In evolution, the domains are divided between the adaptive and the emergent. And there is the timelessness of Parmenides and the ubiquity of change of Herakleidos.

We see that this representation is both binary and polar. It is binary because there exists a watershed, it is polar because of the state possibilities on each side of the watershed. That is, there is the possibility of any angle between the horizontal and the vertical as in the relativistic representation, with a continuum on one side of the demarcation line and a set of eigen values on the other side.

The above is the nature of the spectrum of systems, but it refers to only one level. In cybernetic systems, requiring at least two levels, each level contains such a spectrum.

The Second or Vertical Dichotomy

Inter-level emergence of new phenomena

A Table of Analogues of the Dichotomy:

SIZE/No. OF ELEMENTS	VARIETY/No. OF SPECIES
COMPLEXITY	VARIETY
FOOD/INPUT	SYSTEM
SYSTEM	ENVIRONMENT
STABLE PART	MODIFIABLE PART
KINEMATIC	DYNAMIC
CENTRAL STABILITY	PERIPHERAL INSTABILITY
SATISFIED CNTRPARITIES	UNSATISFIED CNTRPARITIES

OTHER DICHOTOMIES:

In the characterization of systems, it next becomes important to describe the degrees of freedom in a pattern-in-time, the energy/information ratio in the system, the degree of or size of the domain of determinism, i.e. the fluidity or modifiability of the structure. The role of such dichotomies as genotype and phenotype, etc.

~~GSTCHNGE~~

~~GENERAL SYSTEMS THEORY APPROACH TO CHANGE~~

~~The First or Horizontal Dichotomy~~

ARCHCHNG

THE ARCHETYPAL THEORY OF CHANGE

All change consists of deterministic patterns in time--a railroad track along which a train runs between two places. Causality is a blown-up piecemeal view of a short portion of the track. Archetypes may or may not have in their length "breakpoints" or "singular points" of exit and/or entry. Their length may be finite or global (an example of a global archetype is a so-called natural law). Some archetypes may loop.

It is useful to divide all systems into the classes:
ENERGY SYSTEMS and INFORMATION SYSTEMS
An energy system is characterized by the level of "rawness" or unstructuredness of energy. Energy itself is Newton's Vis Viva, the 'thing' that effects motion and change.

The <u>pattern</u> of change, on the other hand, is set by the informational structure or channel in which the energy flows or is processed. Such informational structures in the abstract (independent of the substance by which the pattern is preserved or stored) are called archetypes. Archetypes are <u>pure</u> informational systems.

Most systems are mixes of energy and information. At one end of the spectrum are the archetypes, at the other end is raw energy. Every system is characterized by the 'food' it consumes as input. where 'food' is the structured energy which the system is capable of processing. There must be an hierarchy of foods, a food chain in a very general sense, before sophisticated informational systems may be fed.

food - system - environment
subsystem - " - Super system
input)

EVOLUTION

BC600
DECEMBER 9, 1980

Some 60 million years ago an event of overwhelming impact occured on earth. This is referred to by geologists and paleontologists as the "Cretacious-Tertiary Event". The fossil records show that scores of species suddenly became extinct, including the families of the great dinosaurs. Following this catastrophy occurred what evolutionists call a "radiant"--the appearance simultaneously of a great number of new species. The Cretacious-Tertiary Event constituted a major discontinuity in the evolutionary patterns of the biological history of the earth. Recently a plausable explanation of the C-T event has been forthcoming. Based upon the anomolous presence of a thin layer of iridium at the cretaceous-tertiary interface, and the rarity of this element on earth and its greater abundance in meteorites, it has been surmised that the C-T event might possibly have been caused by a collision between the earth and a small asteroid. If this indeed be the case, then extraterrestial interventions may have played as significant a role in bio-evolution as have the continuous processes of natural selection and adaptation.

But the records show that there have been other radiants in paleo-history. We do not know whether they also were caused by asteroidal collisions or whether any of a large class of global catastrophies could effect a radiant. What is significant, whatever the cause, is the simultaneous multi-appearance of new species during a relatively short moment of history. These species may subsequently be gradually modified through various kinds of interactions over millions of years. They may even become extinct. Evolution thus appears to involve two distinct processes: Emergence of new species, a rapidly occuring short time span phenomenon; and modification of species through selection and adaptation, a slow long time span process.

When we turn from paleo-history to cultural history, we, not surprisingly, again find the phenomenon of the radiant. Ideas and artifacts, like bio-species, suddenly become extinct, to be replaced shortly later by a new set of ideas. Some old ideas may survive through the event, to take their place alongside the new ideas in the new order. Then all of the ideas--old and new--are gradually modified and refined until their usefulness in the new order is firmly established.

A cultural radiant, like the cretacious-tertiary bio-radiant, seems to have occurred in the sixth century before the present era. There does not seem to have been any cosmic catastrophy associated with this incidence of cultural emergence, but some event of great psychological impact undoubtedly occurred between 600 and 500 B.C. We need look only at the spectrum of great innovative thinkers that lived in this age to validate this point.

In China we have Lao Tze (6xx-5xx), and Confucius (x); in India there was Mahavira (x), and Siddhartha Gautama who became the Buddha (x), in Persia there was Zarathrustra (x), among the Hebrews there was the second Isaaih, and finally in the West, there was Thales, Pythagoras, ... No period of equal time since has produced so many great germinal thinkers.

THE RITUALS OF CHANGE

There are two streams of change—an outer stream and an inner stream. The outer is governed by geophysical processes, cultural processes and organic evolution. The inner is governed by psychic forces, individual, collective and "other". The processes of intentional change are inner initiated processes that affect the outer. The inverse is related to what Toffler calls "future shock". For the most part inner change has not kept pace with outer change, hence the future shock. We rely largely on a process like bio-evolution to effect inner change. If the genotype in cultural evolution is the child in school and the phenotype is the adult, thn we use our educational system as a DNA replicative device. We seed to replicate our cultural genes in the young. What modifications that take place are gradual and are mitigated by the clashes that must take place between the modified young and the unmodified adults.

A significant measure in cultural evolution is the portion of development in the genotype that is replicated vs. the portion that is modifies. We may write,

$$m \frac{\dot{}}{\dot{}} r = 1$$

This ratio is never infinite since there must always be some replication.

While outer change is well discussed and well descrived as for example, forecasting, planning, etc. perhaps because it is similar to the objectifiyng type of fiewpont developed yb science and this focus on the outer is natural in a scientific age. Inner change has been relatively ignored and its importance, even for the realization of much of outer is not recognized. We cannot achieve many of the goals purely by outer change. We ourselves will have to change to reach these goals. e.g. disarmament, peace and an ecologically sound world

AR-10-M
10/11

Morphology of Change

THE PRINCIPLE OF PLENITUDE

THE Principle of plenitude states that all things possible in nature are actualized and that in the process of actualization new potentialities are created. It is not part of the principle, however, that all that is actualized must persist. Much that is actualized may disappear either through instability or through serving to effect further actualization. Nor does the principle insist that new potentialities must come about only through processes of actualization. New potentialities may also arise through chance or through intervention by extra-systemic processes.

Origin of Potentialities
1) Per process of actualization
2) Chance
3) Extra-Systemic

Growth is the process by which that which is potential becomes actual.

Aristotle

Exponential curves grow to infinity only in mathematics. In the physical world they either turn around and saturate or they break down catastrophically.

Dennis Gabor

It is only through the conversation of man with man that ideas come into existence. Two human beings are as necessary for generation of the human mind as they are for the generation of the human body.

Feuerbach

EVOLUTION--EMERGENCE--ENTELECHY

There is a curious paradox in our attitudes toward random origin of structure. We have a great affinity for explaining origins in terms of random fluctuations. This concept in one form or another is used by cosmololgists, biologists, and others who wish an explanation of how order and structure emerged from chaos and basic matter. While we are unable to specify the details as to how a galaxy or other cosmic form originated, we take as an article of faith that when we can explain it the process will depend on a significant role played by chance, a random fluctuation in density of the gas cloud etc. Similarly, in explaining the origin of life, intelligence, or any system having sophisticated characteristics, we like to fall back on the concept of chance. The origin of life is like Eddington's monkeys writing Shakespear on typewriters. Given enough time, the random banging on the keys will produce Hamlet's soliliquy, sooner or later we must expect that something typed will make sense. Given enough time the random building and fracturing of molecules will end in one that is able to replicate itself, sooner or later we must expect the appearance of something that is alive. The relation between probability and inevitability is strained by the allowed time interval. The inevitability of a low probability occurrence requires unlimited time, which as great as it is the age of the universe does not afford.

But this has to do with matter. If the same arguments were provided as the process by which the Creator came into being, (where by the creator is meant an organization of thought that reaches a sufficient level of sophistication to order itself and effect reifications), they would be ridiculed. What is permitted for matter is not permitted for thought. Yet the time available for mind or consciousness to evolve by the "monkey method" is far greater than that set by the limits on matter.

cc Stafford Beer's Paper Vol. 5 GS Yearbook p. 99

ADEVEMEN June 8, 1980

ADAPTATION, EVOLUTION, EMERGENCE, AND ENTELECHY?

1.0 Explaining the emergence of a new quality to a skeptic.
- 1.1 Definition: What is meant by "emergence of a new quality".
- 1.2 The history of this debate provides insights and lessons.
  - 1.2.1 Lucretius.
  - 1.2.2 Descartes.
- 1.3 Method of this paper: General Morphology.
- 1.4 Needed changes in perspective.
  - 1.4.1 The importance of viewing the context. (viewing from without)
    - 1.4.1.1 You cannot perceive the emergent quality unless you view the "whole" from its context.
      Specialists and reductionists are trained to ignore the context. The function of the whole, that which confers on it the ability to survive, is not a property of the parts but a property of the whole within its context. Since reductionists disavow the context by necessity to get at immediate cause and effect, they are caught without the tools to see the emergent quality/function.
    - 1.4.1.2 The source of the emergent properties is transferrence from the context to the system.
    - 1.4.1.3 Examples of changes in reference changing reality (eg's from Xeno and Einstein.
  - 1.4.2 The importance of viewing the content. (viewing from within)
    - 1.4.2.1 Innovation of wholes from random rearrangement of parts
      example from astronomy; insufficient time
      example from biology; again insufficient time
      learning (Bateson) and conservation of what has been achieved thus far.
      Systems can make tools.
    - 1.4.2.2 Implicit in the parts, ab initio, are conditions making inevitable the development that follows.
      Laws of thermodynamics
      Principle of plenitude
      Laws of probability
      Prigogine's disequilibria and Thom's discont.
      It is these, acting on large numbers of entities that resolves those multitudinous parts into the same systems patterns or isomorphies (holographic analogy) on new levels.
      Discriminate between origins of isomorphies
    - 1.4.2.3 What is it that makes it possible for an entity to change?
- 1.5 Useful metaphors.
  - 1.5.1 Reductionism versus "facetism".
    Different ways of viewing a whole. dont dissect.
    perceiving different properties in situ
    Implicit in reductionism is destruction of the whole
    C.S. lewis quote
    Facetism is a right hemisphere, form-oriented approach to knowing
    We tend to think we know what we can communicate,but in reality we know much more than we can communicate (note intuition,inspiration, insight) etc. So the obstacle of communication

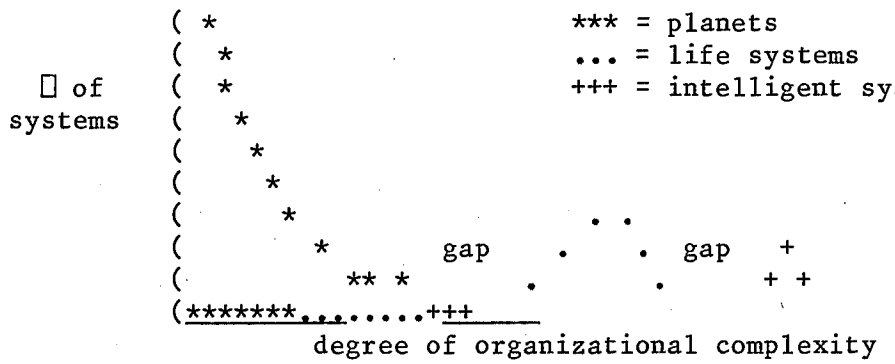
monopolizes our methods of knowing. Facetism could free us from this constraint. Route of communication is from perception of wholeness in right lobe to its communication in left.

Changing a frame of reference changes reality (eg.s both Xeno's parable and Einsteinean relativity

1.6 Mechanisms of Emergence.

1.6.1 Mechanisms of Gap Formation.

The existence of levels is the result of the existence of gaps. Gaps are formed by the disappearance of unstable entities/systems or by "devouring" (restructuring) of the simpler systems by more efficient systems nearby. Use diagram of extraterrestrial intelligence workers here...



Devouring occurs from both the high and low sides of the Gaussian distribution. Usually man would only consider devouring from the low side, for example, more complex cultures devouring more primitive ones. But some highly complex, but as yet unestablished systems, can also be destroyed by established systems because .....

fill this in....

Metaphor: Kronus devouring his children. Kronus as time.

Math: Three types of selection in evolution; stabilizing, diversifying, directional.

At certain stages of this process a Gaussian distribution becomes a bimodal distribution.

eg. at time of business crisis only two types of business survive, the very big and the very small.

eg. same picture emerges in evolutionary fossil record. Large reptiles and small mammals.

Related to devouring on both ends of Gaussian. Big corporations make it impossible for medium size corp. to survive, but do not even compete with the markets of the smaller corp.

caution: in evol. trend for fairly rapid increase in size in a new adaptive trend once it is estab-

TRENDS

MEGATREND, POL

LAWS

January 19, 1993

ON THE BOOK MEGATRENDS 2000
by
John Naisbitt and Patricia Aburdene

Morrow, 1990
ISBN 0-688-07224-0

This is a very upbeat description of ten trends which the authors significate as of central importance in the next decade and on into the 21st century. It is very salubrious to be told that what is going on, the present trends, is right on track for a better world. We have the Reagan years to remind us of how good we feel just being told we are doing everything right. However, such illusory optimism is like being on drugs, it is living in a surrogate reality.

Futurists have long distinguished between trends and normative change, change directed by goal orientation. Naisbitt and Aburdene make us feel good by demolishing the error signal between where we should be headed (the normative) and where the trends appear to be taking us. While they sprinkle the book with minor caveats, in effect they are equating the trend with the normative. This removes correction from the process. Those who want no correction, who want to keep on doing what they are doing will find great satisfaction with the book and its trends. Those with a different normative foresee a bigger bump when the bubble bursts.

Endorsement or confirmation of a trend inhibits correction.

Trends are passive futurism.

Innovation comes from outside the system.* Where does correction come from? There is contextual correction which comes from outside the system, eg ozone holes. And there is internal correction which is usually postponed until a large measure of violence occurs, eg the abolition of slavery in the United States.

We only discover the cliff by falling over it.

"Those who oppose stepwise change make violent change inevitable."
~ JFK

* A contrary view is held by those who subscribe to the notion of "self-organizing systems". What is self and its boundaries?

Innovation ~~vs~~ Correction
Vairachona Ratna Sambhava

protection by correction

LAWS
GUT

85a

DENVER

3MAJTRND.WP6 October 30, 1995

THREE MAJOR TRENDS

fragmentation & 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)]

but themselves

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.

4 Trend → cultural autonomy

Elitism: preservation of uniqueness