Scraps

2000

MUSPHERS.WPD
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January 2, 2000

MUSIC OF THE SPHERES PART I

It has been shown that the basic frequency associated with the Hubble universe is given by,

$$\nu_U = (\alpha \mu S)^{-3/2} / t_o$$

where t_o is the Planck time, α is the fine structure constant, μ is the proton/electron mass ratio, and S is the coulomb/gravity force ratio. The wavelength associated with this frequency is

$$\lambda_U = c / \nu_U = (\alpha\mu S)^{3/2} l_o = 10^{27.932889}\ \mathrm{cm}$$

where l_o is the Planck length = $10^{-32.791545}$ cm. The sizes and masses of various objects, from sub-atomic particles to clusters of galaxies, are given as sub-harmonics in the following table. (Values are $\log_{10}$) ; (3m = 2n) cf. Pythagoras $\left(\frac{3}{2}\right)^n$

	#	n	$(\alpha\mu S)^n$	m	$\lambda^m = (\alpha\mu S)^n l_o$ cm	$M = c^2/G\,\lambda^m$ gm	
	1	3/2	60.724434	1	27.932889	56.062236	Fifth
7/5	2	5/4	50.603694	5/6	17.812149	45.941496	Cl Cl
	3	6/5	48.579547	4/5	15.788002	43.917349	Gal
	4	9/8	45.543324	3/4	12.751779	40.881126	whole tone G ☆ Cl
	5	1	40.482955	2/3	7.691410	35.820757	Tone ☆
	6	9/10	36.434660	3/5	3.643115	31.772456	
Third 4/5	7	3/4	30.362217	1/2	-2.429328	25.700019	fourth
	8	3/5	24.289773	2/5	-8.501772	19.627575	
2/5	9	1/2	20.241477	1/3	-12.550068	15.579261	= p
1/5	10	0	0	0	-32.791545	-4.662198	= e

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1 = fundamental	n		
2 = Octave	$2n$	0	
3 = Fifth	$\frac{3}{2}n$	E	
4 = Fourth	$\frac{4}{3}n$	0 - F	$2-\frac{2}{3}$
5 = Third	$\frac{5}{4}n$		
whole tone	$\frac{9}{8}n$		

Notes:

- The values in the mass column are given by two equations,
  $\lambda^m c^2/G$ or $(\alpha\mu S)^n m_o \Rightarrow G m_o/\lambda^m c^2 = (\alpha\mu S)^{-n}$

- As in music, the even harmonics are repetitive while the odd harmonics represent innovations. Thus "octave" frequencies are not likely to manifest, only odd harmonics may support existence.

- Row 1. The values in this row are those of the Hubble universe. The fundamental wave length of 27.932889 cm is based on the characteristic time 17.456057 sec which is corresponds to a value of the Hubble parameter of 71.977 km/sec/mpc.

- Row 2. One light year = 17.975932 cm. This object is close to 1 l.y. in size (all sizes are those of Schwarzschild radii) and has a mass of 12.642 solar masses. (One solar mass = 33.299 gm) This mass suggests a galaxy.

- Row 3. Size is of the order of 100 astronomical units (1 A.U. = 13.174927 cm) Mass is of the order of 10^{10} solar masses. Globular cluster?

- Row 4. This value of λ is close to the minor axis of the orbit of Mercury, which is equal to 12.753373. Apophasis involved here?

- Row 5. The value of λ in this row is of the order of the size of a neutron star. Mass is of the order of 100 solar masses.

  M= 35.820757, 120× $\odot_m$ = 35.378 δ = 0.443

- Row 6. Size < a kilometer, mass ~ earth like. Dark matter candidate?

- Row 7. An "octave"; probably non existant.

- Row 8. This value of λ approximates that of the Bohr radius, a_o=-8.276399

- Row 9. This value of λ is precisely equal to that of the electron radius, r_e. The value of the mass is anomalistic.

- Row 10. This is the Planck particle with $m_o\lambda = \hbar/c$ and $m_o/\lambda = c^2/G$.

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~~CONEXIST.WPD~~

January 9, 2000

THE VARIETIES OF ENERGY

The Planck particle whose properties are defined by the basic physical constants, c, G, ħ, is the "stem cell" of the cosmos. Four basic energies associated with the Planck particle turn out to be identical:

The Hertz wave energy,	$H = \hbar\nu$	=	16.291442 ergs = ϵ_o
The Einstein kinetic energy,	$E = mc^2$	=	16.291442 ergs = ϵ_o
The Volta electric energy,	$V = e^2/\alpha R$	=	16.291442 ergs = ϵ_o
The Newton gravitational energy,	$N = Gm^2/R$	=	16.291442 ergs = ϵ_o
If all are assumed positive, their total is		=	65.165768 ergs = ϵ_o^4

A formula for the product HEVN, using the relation, $e^2 = \hbar\alpha c$, gives,

$$\text{HEVN} = \frac{GM^2}{R} * Mc^2 * \frac{\hbar c}{R} * \frac{e^2}{\alpha R} = \frac{GM^3}{R^3}\hbar^2 c^4$$

Using the definition of the Planck mass, $m_o = \sqrt{(\hbar c/G)}$, we may write,

$$\text{HEVN} = \left(\frac{GM}{R}\right)^3 m_o^4 c^2 = \left(\frac{GM}{c^2 R}\right)^3 m_o^4 c^8 = \left(\frac{GM}{c^2 R}\right)^3 \varepsilon_O^4$$

The quantity GM/c^2R is dimensionless and has the value of unity when N = E. Hence all bodies having N = E will have HEVN = ϵ_o^4 and will be located on the Schwartzschild boundary. In addition to the condition N = E which places a body on the Schwartzschild boundary, we note that if N = V (or N = H since V ≡ H) the mass of the body must be the Planck mass, M = m_o.

$$\frac{N}{V} = \frac{GM^2}{\hbar c} = \frac{M^2}{m_o^2}$$

And if E = V (or E = H), then $MR = m_o l_o = \hbar/c$, which places the body on the Heisenberg boundary.

$$\frac{E}{V} = \frac{Mc^2}{\hbar c / R} = \frac{MR}{m_o l_o}$$

And for a body on the Heisenberg boundary:

$$\text{HEVN} = \left(\frac{GM^2}{c\hbar}\right)^3 \varepsilon_o^4 = \left(\frac{M}{m_o}\right)^6 \varepsilon_o^4$$

$\left[\frac{ML^2}{T^2}\right] \sqrt{\frac{\hbar c^5}{G}} = 16.291442 = m_0 c^2, \cdots$

Note a numerical [but not dimensionally authentic] coincidence

all log 10's $\quad \mathcal{E}_0 = 16.291442$

$\mathcal{E}_0^2 = 32.582884 \quad \left[\frac{M^2 L^4}{T^4}\right]$

$\Phi = 0.618034$

$\log_{10} \Phi = 0.208988$

$l_0 = -32.791545$

$\Phi l_0 = -32.582557 \quad [L]$

$\mathcal{E}_0^2 = 32.582884$

$\delta = 0.000327$

numerically $\boxed{\Phi l_0 = -\mathcal{E}_0^2}$

H and V are the same!

introduce $E = \hbar \Omega$

$\hbar = -26.976924$

$\Omega = +43.268366$

$+16.291442$

$E_U = M_U c^2 = +77.015877 \text{ ergs}$

$\hat{P}ower = \frac{c^5}{G} = 59.559810 \text{ watts}$

$\frac{E_U}{\hat{P}} = T = 17.456065 \text{ sec} \sim$

In summary: For any body on the Schwartzschild boundary, HEVN = ϵ_o^4; For any body on the Heisenberg boundary, HEVN = $(M/m_o)^6\ \epsilon_o^4$. For the Planck particle, which fits both conditions, $M = m_o$ and HEVN = ϵ_o^4.

Conservation of energy requires that the energies of derivative or metamorphosed bodies be the same as those of the Planck particle. If all four energies are taken as positive, then the universe should also exhibit HEVN = ϵ_o^4. For the Hubble universe with mass $M = (\alpha\mu S)^{3/2}\ m_o$ and with radius $R = (\alpha\mu S)^{3/2}\ l_o$:

$H = \hbar c/R = -44.432991$ ergs
$E = M c^2 = +77.015877$ ergs
$V = e^2/\alpha R = -44.432991$ ergs
$N = GM^2/R = +77.015877$ ergs

whose total = $65.165772 = \epsilon_o^4$. This value precisely replicates that of the Planck particle indicating that energy is conserved.

Further, in the case of a neutron star with $M = Sm_o = 34.693681$ and $R = Sl_o = 6.564335$, the four energies are:

$H = -23.064438$ ergs
$E = +55.647322$ ergs
$V = -23.064438$ ergs
$N = +55.647322$ ergs

with a total = $+65.165770 = \epsilon_o^4$, again the same as the Planck particle.

For other standard stars:

For $M = (auS)m_o = 35.820757$ and $R = (auS)l_o = 7.691910$ the energies are:

$H = V = -24.191513$ ergs and
$E = N = +56.774399$ ergs

with a total of $+65.165772 = \epsilon_o^4$

For $M = (S/\alpha\mu)m_o = 33.566607$ and $R = (S/\alpha\mu)l_o = 5.437261$ the energies are:

$H = V = -21.937364$ ergs and
$E = N = +54.520249$ ergs

with a total of $+65.165770$ ergs $= \epsilon_o^4$

In the above examples we see that two of the energies are negative and two positive. In the case of the Planck particle the four energies being equal suggests that if two were taken as negative the Planck energy would be equal to zero. If the Planck particle is indeed a "cosmic stem cell" initial zero energy would support the hypothesis of "creation ex nihilo". If we were to assign N as plus and E as minus and H as plus and V as minus, the Planck total energy would be zero and all of the above objects would also have a total energy of zero, still preserving energy conservation.

PLANCKUN.WPD January 13, 2000

PLANCK UNITS

NAME	DIMENSION	SYMBOL	FORMULA	$\log_{10}$ cgs VALUE
MASS	[M]	m_o	$(c\hbar/G)^{1/2}$	- 4.662199
LENGTH	[L]	l_o	$(\hbar G/c^3)^{1/2}$	- 32.791545
TIME	[T]	t_o	$(\hbar G/c^5)^{1/2}$	- 43.268366
VELOCITY	[L/T]	c	c	10.476821
ACTION	$[ML^2/T]$	$\hbar$	$\hbar$	- 26.976924
G	$[L^3/MT^2]$	G	G	- 7.175704
ENERGY	$[ML^2/T^2]$	ϵ_o	$(\hbar c^5/G)^{1/2}$	16.291442
ENERGY	$[ML^2/T^2]$	ϵ_o^4	$(\hbar c^5/G)^2$	65.165768
FORCE	$[ML/T^2]$	k_o	c^4/G	49.082989
POWER	$[ML^2/T^3]$	w_o	c^5/G	59.559810
DENSITY	$[M/L^3]$	ρ_o	$c^5/G^2\hbar$	93.712439
PRESSURE	$[M/LT^2]$	y_o	$c^7/G^2\hbar$	114.666081 *
electron charge	$[ML^3/T^2]$	e_o^2	$\hbar\alpha c$	- 18.636938
CHARGE	$[ML^3/T^2]$	q_o^2	$\hbar c = e_o^2/\alpha$	- 16.500103
	[M/L]	m_o/l_o	c^2/G	28.129374
	[ML]	$m_o l_o$	$\hbar/c$	- 37.453745
	[M/T]	m_o/t_o	c^3/G	38.606168
	[MT]	$m_o l_o$	$\hbar/c^2$	- 47.930386
	[LT]	$l_o t_o$	$\hbar G/c^4$	- 76.059913
	$[M^3L]$	$m_o^3 l_o$	$\hbar^2/G$	- 46.778144
			c^2	20.953642
			c^3	31.430463
			c^4	41.907284
			c^5	52.384105
$e_o/\sqrt{G}$	[M]	$m_o\sqrt{\alpha}$	$(\hbar\alpha c/G)^{1/2}$	- 5.730617

* $\left(\frac{5}{\alpha\mu}\right)^3 = 114.686418$

$\delta \simeq 0.020337$

$$\tau^2 = \frac{1}{G\rho}, \quad \tau^2 G = \frac{1}{\rho} = \frac{G^3\hbar}{c^5}$$

$$\rho = \frac{c^5}{G^2\hbar} \qquad \rho = \frac{1}{G\tau^2}$$

COSMPYTH.WPD January 16, 2000, revised January 31, 2000

A PYTHAGOREAN COSMOLOGICAL MODEL

The Pythagorean approach is an attempt to construct a template which fits the observed universe rather than to describe the detailed physical steps by which the universe evolved. Its goal is to build a consistent net of nodes and links demonstrating how the various parts fit together. Recognition of the basic role that particle physics played in cosmology brought with it inferences of symmetries between the large and small, symmetries involving baryons and stars, the Hubble universe and the Planck particle. Hence it appears useful to explore the several symmetries and their implications by placing in juxtaposition the dimensions and magnitudes of the particles and constants of physics with those of various astronomical aggregates.

At the outset there is the difficulty of a basic asymmetry between the preciseness of the measurements in particle physics and of those in astrophysics. Whereas the former may in many cases reach accuracies exceeding eight significant figures, at present the latter usually have only order of magnitude accuracy. An exception to this is the recent improvement in the observed value of the Hubble parameter, which measures the rate of expansion of the universe, and can be used in conjunction with various cosmological models to give an age to the universe. The present Pythagorean model is based on this new value and on the best present values for fundamental constants and baryons. We thus have empirical data for the Planck level, the baryon level and the universe or "Hubble" level. There also exist a plethora of less precise measurements of masses and sizes of stars, but of sufficient accuracy to test the model at the stellar level, allowing us a basic four level model. Other aggregate levels exist and can possibly be explored using the best astronomical observations together with interpolations and extrapolations on the basic four level model.

Because of an inverted relation between the Planck particle and baryons, (Planck mass > baryon mass and Planck size < baryon size) we are led to a model consisting of two parts. The first part is constructed on size relations, the second on mass relations. Both parts are used to establish the basic frequencies that provide the resonances from which it is assumed all material bodies emerge. [It will be shown that resonances are alternatives to equilibria of forces.]

Before constructing any model it is important to note some properties of the Planck particle: The following six times (or alternately, frequencies) are all equal at the Planck level but diverge at other levels of size and mass. [All values are cgs given in $\log_{10}$ format]

TABLE 1

t	τ	T	Z	ζ	Φ
L/c	$(L^3/GM)^{1/2}$	GM/c^3	$\hbar/Mc^2$	$\hbar L/GM^2$	$(ML^3\alpha/e^2)^{1/2}$
−43.268366	−43.268366	−43.268366	−43.268366	−43.268366	−43.268366

THE SIZE RELATIONS

TABLE 2. Gives the sizes of the four levels based on an extrapolation of the ratio of the baryon size to the Planck size. $r_e / l_o = (\alpha\mu S)^{1/2}$, where α is the fine structure constant, μ is the proton/electron mass ratio, and S is the coulomb/gravitation force ratio, explicitly, $L_n = (\alpha\mu S)^n l_o$

TABLE 2.

OBJECT	PLANCK	BARYON	STAR	UNIVERSE
FORMULA	$l_o = (G\hbar/c^3)^{1/2}$	$r_e = (\alpha\mu S)^{1/2} l_o$	$L_* = (\alpha\mu S)\, l_o$	$L_U = (\alpha\mu S)^{3/2} l_o$
VALUE	−32.791545	−12.550068	7.691409	27.932886

THE MASS RELATIONS

TABLE 3. Gives the masses of the four levels based on the formula, $M_n = (\alpha\mu S)^n m_o$, analogous to the size formulae, where m_o is the Planck mass $(c\hbar/G)^{1/2}$.

TABLE 3.

OBJECT	PLANCK	BARYON	STAR	UNIVERSE
FORMULA	$m_o = (c\hbar/G)^{1/2}$	$m_b = (\alpha\mu S)^{1/2} m_o$	$M_* = (\alpha\mu S)\, m_o$	$M_U = (\alpha\mu S)^{3/2} m_o$
VALUE	−4.662199	15.579278	35.820755	56.062232

While the star and universe values fit with other measurements and estimates, the baryon value derived from this formula is totally incorrect. The interpolative use of the $M_n = (\alpha\mu S)^n m_o$ formula, however, suggests the existence of a massive particle of minute size that could be a possible candidate for dark matter.

TABLE 4. Gives the masses of the four levels by extrapolating the correct ratio of the baryon mass to the Planck mass, $m_p/m_o = (\alpha\mu)^{1/2} S^{-1/2}$, explicitly, $M_n = (\alpha\mu)^n S^{-n} m_o$.

TABLE 4.

OBJECT	PLANCK	BARYON	STAR	UNIVERSE
FORMULA	$m_o = (c\hbar/G)^{1/2}$	$(\alpha\mu)^{1/2} S^{-1/2} m_o$	$(\alpha\mu)\, S^{-1} m_o$	$(\alpha\mu)^{3/2} S^{-3/2} m_o$
VALUE	−4.662199	−23.776602	−42.891005	−62.005328

Here while the baryon [proton] mass is correct, the values for star and universe are out of bounds but provide clues to additional frequencies. do $(\alpha\mu)^{-1} S$ $(\alpha\mu)^{-3/2} S^{3/2}$

THE FREQUENCIES

There are six combinations of the fundamental constants that when combined with L and M have time dimensionality. These combinations were given in TABLE 1 along with their values at the Planck level. The values of these six time/frequencies for the baryon, star, and universe levels are given in Table 5. The values for L and M in Tables 5 and 6 are the observed values for the baryon level and the $(\alpha\mu S)^n$ values at the star and universe levels, [sizes from Table 2, masses from Table 3]

TABLE 5.

Object	t	τ	T	Z	ζ	Φ
baryon	−23.026889	−3.348949	−62.382770	−24.153964	+15.201917	−22.463352
star	-2.785412	-2.785412	-2.785412	-83.751321	-83.751321	37.697542
universe	17.456067	17.456067	17.456067	−103.992798	−103.992798	78.180497

The values of these time/frequencies when expressed in terms of Planck units are given in Table 6:

TABLE 6.

Object	t	τ	T	Z	ζ	Φ
baryon	$(\alpha\mu S)^{1/2}$	$(\alpha\mu)^{1/2}S$	$(\alpha\mu)^{1/2}S^{-1/2}$	$(\alpha\mu)^{-1/2}S^{1/2}$	$(\alpha\mu)^{-1/2}S^{3/2}$	$\alpha\mu\ S^{1/2}$
star	$\alpha\mu S$	$\alpha\mu S$	$\alpha\mu S$	$(\alpha\mu S)^{-1}$	$(\alpha\mu S)^{-1}$	$(\alpha\mu S)^2$
universe	$(\alpha\mu S)^{3/2}$	$(\alpha\mu S)^{3/2}$	$(\alpha\mu S)^{3/2}$	$(\alpha\mu S)^{-3/2}$	$(\alpha\mu S)^{-3/2}$	$(\alpha\mu S)^3$

In Table 7 the values of size employed are those given by the $L_n = (\alpha\mu S)^n l_o$ formula, [Table 2], but the mass values are those given by the baryon mass formula, $M_n = (\alpha\mu)^n S^{-n} m_o$, [Table 4].

TABLE 7.

Object	t	τ	T	Z	ζ	Φ
baryon	−23.026889	−3.348949	−62.382770	−24.153964	+15.201917	−22.463352
star	−2.785412	36.570468	−81.497172	−5.039561	73.672200	−1.658338
universe	17.456067	76.489888	−100.611575	14.074842	132.142484	19.146679

TABLE 8. Gives the values of the TABLE 7. time/frequencies when expressed in terms of Planck units

TABLE 8.

OBJECT	t	τ	T	Z	ζ	Φ
baryon	$(\alpha\mu S)^{1/2}$	$(\alpha\mu)^{1/2}S$	$(\alpha\mu)^{1/2}S^{-1/2}$	$(\alpha\mu)^{-1/2}S^{1/2}$	$(\alpha\mu)^{-1/2}S^{3/2}$	$\alpha\mu\ S^{1/2}$
star	$\alpha\mu S$	$\alpha\mu\ S^2$	$\alpha\mu\ S^{-1}$	$(\alpha\mu)^{-1}\ S$	$(\alpha\mu)^{-1}\ S^3$	$(\alpha\mu)^2\ S$
universe	$(\alpha\mu S)^{3/2}$	$(\alpha\mu)^{3/2}\ S^3$	$(\alpha\mu)^{3/2}S^{-3/2}$	$(\alpha\mu)^{-3/2}S^{3/2}$	$(\alpha\mu)^{-3/2}S^{9/2}$	$(\alpha\mu)^3\ S^{3/2}$

Some conclusions:

1) The t, τ, and T time/frequency values for the universe in Table 5 (as well as the t and τ values in Table 7) are all equal to 17.456067 seconds, which is $(\alpha\mu S)^{3/2} = 60.724431$ Planck time units. [One Planck time unit = $(\hbar G/c^5)^{1/2} = -43.268366$ seconds]. The value of 10^17.456067 sec is equal to 9.056387 billion years or a Hubble time of 13.584581 billion years. This age reduces to a value of the Hubble parameter of $H_o = 71.977$ km/sec/mpc. This is in excellent agreement with Freedman et al's 1999 value of 71 $\pm$ 7 km/sec/mpc determined from observations of 800 cepheids in 18 galaxies out to a distance of 25 megaparsecs. [Physics Today, Aug 1999, page 19]. If the final observed value of H_o does converge to 71.977 km/sec/mpc, then the fact that this quantity is tied to the values of the fundamental constants, G, c, and $\hbar$, forces us to conclude that either the Hubble parameter is itself unvarying, in which case the expansion rate of the universe is constant, [cf the Steady State cosmological model], or that the fundamental "constants" vary with time.

2) Resonance and equilibrium of forces lead to the same results and are distinct ways of representing the same phenomenon. For resonance, we see that in Table 6. for the universe and star levels:

$$t = \tau = T = Z^{-1} = \zeta^{-1} = \Phi^{1/2}$$

The implication of t = T , for example, is

$$R/c = GM/c^3 \quad \text{or} \quad GM = Rc^2 \quad \text{[the Schwartzschild bound]}$$

For balance of forces, on the other hand, we note that: Pressure is force per unit area or energy per unit volume. Taking Mc^2/R^3 as an "inertial" energy per unit volume that exerts an outward or expansive pressure, and $(GM^2/R)/R^3$ as a "gravitational" energy per unit volume that exerts an inward or contractive pressure, when these are placed in equilibrium we have:

$$Mc^2/R^3 = GM^2/R^4 \quad \text{or} \quad GM = Rc^2 \quad \text{[again the Schwartzschild bound]}$$

DRAFT

ZERONE01.WPD February 12, 2000

MODES, VALUES, AND EXISTENCE

There is a control in many new automobiles that gives us an excellent metaphor for Pythagoras' reasoning for the nothingness of one. This is a knob for audio control that changes **mode** when you press it, and changes the **value** of the mode when your turn it. For example, **mode 1** has to do with the relative volume of the speakers in the front and rear. This mode is called "fade" and turning the knob when it is in **mode 1** increases or decreases the volume of the rear speakers relative to the front speakers. Next is **mode 2** which controls the "balance" between speakers on the left and those on the right. Turning the knob in this mode adjusts the relative volume of right and left. There is also a mode for base volume, one for middle volume, and one for treble volume. And finally a mode for overall system volume, and an on/off switch.

Pythagoras maintained that unless a parameter had at least two values it did not exist. In our example, Pythagoras would say that if a mode did not have more than one value it would be useless and not be there. If there were only front speakers, no rear speakers, then the **value**, ratio of front/rear volume, is meaningless, so mode 1 would not be on the knob. With only one speaker, mode 2 would be meaningless and would not be there. If there were only one bass value for volume, that mode would be gone, and so on. Finally we are left with only one mode, the system volume mode. If only one volume is possible, then that mode is meaningless and removed and all that is left is the on/off switch. So a mode or parameter is present only if it can assume multiple, that is at least two, values.

Another example of mode and value is the so called place system for the representation of numbers. In a base ten or decimal system numbers are expressed by the various powers of ten involved. For example, the number 14027 means,

$$1x10^4 + 4x10^3 + 0x10^2 + 2x10^1 + 7x10^0$$

Each place occupied by a different power of ten is a **mode**. The factors multiplying the powers of ten are **values.** In the third place, where the power of ten is equal to 2, the factor is zero. This value of zero does not extinguish the power-of-two mode because that mode has multiple values ranging from 0 to 9. The mode still exists not only because it has multiple values, but because its existence is required by the **modal set**. If the mode were dropped because its value was zero, we would have 1427, not 14027. The modal set contains all positive powers of ten to the left of the decimal point and all negative powers of ten to the right of the decimal point, but we write only those modes included between the highest positive power of ten with a non zero value and the highest negative power of ten with non zero value, e.g. 14027 not .....0000014027.00000.....

The question arises, does the rule for the existence of a mode, that it possess at least two values, apply to modes themselves? That is, does a system have to have at least two modes in

order to exist? In the case of number representation, we would argue that one mode can exist alone. Say the number 8. It needs only the single 10^0 mode. In the case of the reduced audio system there are no volume or speaker selection modes. We have left only an on/off switch. Our question comes down to "is on/off a proper mode?" Since on/off has two values, it must be a mode. We would consequently conclude that a system with a single mode can exist.

But Pythagoras objects. He would hold it an error to consider on/off a two valued mode possessed by the system. On/off is in reference to a meta-system in which the system is imbedded. On/off only appear to be properties of the system itself, but are in reality properties of the containing meta-system, (the automobile, for example). On/off is a two value mode belonging to a super-system (the automobile for example). In the number place case, the argument is even clearer. The single mode 10^0 exists because it is a mode belonging to the meta-system of all powers of ten. The ontological conclusion is that existence is not a property of any system or entity itself. Existence is a mode belonging to some meta-system such as the set of all numbers. If there were but one number instead of the set of all numbers, that single number would not exist. And without there being multiple modes there would be no audio system, (or no chariot in Nagarjuna's historical example). Is it then tautological to say, that all that exists or does not exist depends on the settings of on/off switches in some ultimate meta-system, such as the cosmos, each switch being a mode of the cosmos?

The ultimate ontological question will have to do with "non-imbedded" systems. The only such system we have conceived is the Universe itself. We believe it exists and this is evidently because it has many modes. It would cease to exist if all values were homogenized, and their modes vanish. Hence it is diversity and variety, deviation and variation, the combinations and permutations of modes and values, that are the root of all existence.

Questions:

Differentiate mode-set and meta-system

Compare containment in a meta-system with Platonic archetypes as roots for existence.

Discuss levels of zero. Zero as a value vs Zero as nothingness or non existence.

on/off ~ exist/ not-exist

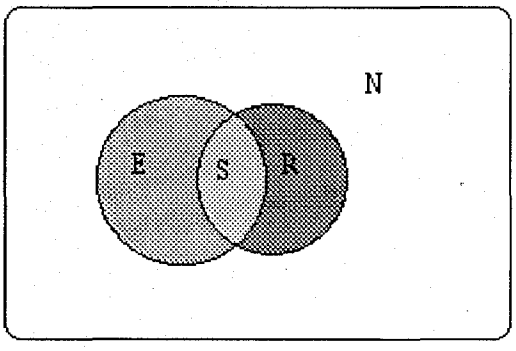
NOTHINTR.WPD February 17, 2000

DRAFT

NOTHINGNESS: THE HIDDEN QUADRANT

The door to NOTHINGNESS is open, but looking through and seeing nothing there we never enter. Instead we toss through the door those perplexing things which we do not wish to encounter. We use NOTHINGNESS as a trash bin for those contradictions and paradoxes we label too absurd to be taken seriously. Yet, paradoxically, NOTHINGNESS hangs albatross like on the necks of all our logics and reasoning. Null sets, apophatic definitions, falsification, "none of the above", and many more concepts reside on the verge between somethingness and nothingness. In the West we have taken refuge in Fortress Aristotle, secure within the walls of the law of excluded middle, allowing us to create the insulated categories of sense and nonsense. But in the East a logic that supports statements that are simultaneously true and false has permitted nonsense to be considered as sense resulting in a penetrating and critical worldview.

Making sense can mean either fitting empirically with sensory experience or fitting logically with prescribed canons of reason, or sometimes fitting both, which case is labeled scientific. Much lies beyond our sensory limits, and as Gödel has shown, much lies beyond our logical limits. And the domain of science is even more restricted, being the intersect of the sensory and the logical. Beyond the union of the sensory and the rational lies Kant's noumina, which, like Schrödinger's Cat being either alive or dead, may be either something or nothing.



E = Experiencable; R= Rational; S= Scientific; N = Nouminal

Intersect = S; Union = ~N

The sensory may be extended to the experiencable, the logical may be extended to the imaginable, but as before beyond their union lies a domain which may be something or nothing. And as some philosophers (like those from Copenhagen) would have it, what lies beyond the bound is both something and nothing (or perhaps neither something nor nothing) until experienced, observed, measured, or axiomatized.

8TIMES.WPD February 19, 2000

FUNDAMENTAL TIMES

Dimensional considerations lead to the discrimination of ten basic times or frequencies. These are:

1) $t = R/c$
This time is based on motion and change. It involves a linear dimension, R, or distance. It is also radar time. It is the basis of Aristotle's concept of time, so **Aristotle** time.

2) $\tau = \sqrt{(R^3/GM)} = (G\rho)^{-1/2}$
This time is based on density. It involves both a mass, M, and a volume, R^3. This equation is Kepler's third law, so we term it **Kepler** time.

3) $T = GM/c^3 = Mc^2/(c^5/G)$
This time involves only mass, M.. It is equivalent to energy/power. The Energy is Einstein's energy, Mc^2, appropriately, let us call this **Einstein** time.

4) $Z = \hbar/Mc^2$
This time derives from Heisenberg's relation, energy x time = action or $\hbar$ The energy used is Mc^2. We might term this **Heisenberg** time.

5) $\zeta = \hbar R/GM^2$
This time also derives from the Heisenberg relation with the energy being gravitational. In honor of the father of gravity, this might appropriately be called **Newton** time.

6) $\Phi = \sqrt{(MR^3\alpha/e^2)} = \sqrt{(MR^3/\hbar c)}$
This time involves electric charge, as well as mass and volume. Perhaps it could be called **Coulomb** time.

7) $\phi = MR^2/\hbar$
This time also derives from the quantum relations. So to leave no one out, call this **Schrodinger** time.

8) $K = G^2M^2/Rc^5 = GM/c^2R \times T$
This time is also energy/power, gravitational energy this time. Since GM/c^2R defines the Schwarzschild limit, let's call this **Schwarzschild** time

9) $k = G\hbar/Rc^4$
This time derives from the fundamental constants, let's call it **Bohr** time.

10) $t_o = (G\hbar/c^5)$
This is the time associated with the Planck particle. It is the **Planck** time.

When the Planck mass and the Planck time are substituted in the above equations, their value in each case is the same = the planck time = -43.268366 sec

BIONOTE1.WPD February 25, 2000

A PERSONAL NOTE

From time to time I feel the need to insert something personal into these accounts of my struggles with ideas. Just to stand back and try to put myself into the picture. Is this an attempt at meta-objectivity?

My grandfather was an Old Testament, Fundamentalist, Methodist preacher. My father was a conservative, Republican, corporation executive. I am a Buddhist and a Bolshevik. Teenage rebellion never outgrown? I don't think so. What I learned from both of them directed me to my present way of thinking. It was not rebellion, it was eclecticism, a sorting out and a selection from all they stood for.

When a young man my grandfather was a deep lover of nature. He lived close to nature and communed with its spirits. The year after the ~~Souix~~ Sioux terminated Custer, grandfather took a journey, accompanied only with his horse, from Pocatello Idaho to Miles City Montana passing through the Big Horn country. He was at home with the earth and the sky. I think he would have become a shaman had not the family decided to move to Texas about 1880. Somewhere in Texas he came under the influence of prairie protestantism and it changed his life. But he never gave up his love of nature and its spirits. The Old Testament, especially the concepts of punishment and Hell, became an overlay that hid his deep and true spirituality. I believe his salvation came from his early years. They redeemed his later years, not the other way as he would have it. From my grandfather I learned the sacredness of all things, the root of my resonating with Vajrayana Buddhism.

My father lived and worked in the first corporate golden age, the period from the turn of the century to the beginning of the cold war. Corporations at that time were defining themselves, not only legally and economically, but as a life style with a world view. It was policy among many corporations to move employees from place to place for no other reason than to filter out those who were most adaptable [read team players] and hence were candidates for membership in the executive club. Dad went along, following orders and moving up the ladder, manager, general manager, regional manager, assistant vice president, vice president. Then came the opportunity to move to corporate headquarters in New York. Finally, acceptance into the top echelon club. He thought it over and turned it down. In all the years he had gone along, developing the toughness required of executives, but all along there was inner conflict. It grated against his inheritance from the shaman. He developed ulcers and began to question the whole structure. While he was loyal to the end, I heard much at the breakfast and dinner table. I saw a wonderful man tortured by the use of his talents and imprisoned in his job. His career kept us apart. The very few days we shared, the times I really had with him I still hold to be most precious. I admired him. He was my hero. He set high standards but I began to disagree with what he served. My loyalties grew not toward the corporations, but toward that sacredness the shaman had shown me existed in the earth and in all peoples of the earth. Yes, I am a Bolshevik in the sense that I feel the capitalist system, which deifies greed and eulogizes ego, is an abomination. We belong to the earth and to each other, not to some bottom line. But I am grateful to those whose lives were sacrificed that we could climb a bit further. They passed on to us their knowledge, their values, and their visions, but we reject their allegiances. It would be wrong to say we betray them as we continue to cherish visions they had to suppress while we reject the institutions that have betrayed those same visions.

Even when an old man, my grandfather always sought places close to nature, away from man and his works. But he always took the Bible with him when he went away alone.

I think that there was a great transformation in his life at about the age of 20. He was a mystic and on some occasion(s) ~~between~~ in the wilds came face to face with the overwhelming power of spirit. It was frightening — few can meet it face to face. After such an encounter, he fled to the protection of religion, which affirmed the existence of Spirit, but kept us secure from ever encountering it. Therefore, the presence of the Bible as a shield when there was the chance of encountering Spirit.

[This may be entirely unfair and untrue, but I do know that madness is risked when encountering the VOID]

My grandfather would today be called a member of the Christian Right. Most of us have forgotten one of their greatest political triumphs — the passing of the 18th Amendment. My grandfather was a staunch prohibitionist and felt no abuse of liberty to enforce such C.R. views on the country. Fortunately for his peace of mind, he died befor repeal.

Perhaps his great value on punishment derived from shamanistic animism. There were spirit and demons everywhere. And any offense had behind it — a demon. Punishment was not for correction, but to drive out the demon.

ASKETCH1.WPD February 24, 2000

AN ONTOLOGICAL SKETCH

This is an attempt to sketch some ideas concerning the nature of the physical world, and by analogies the nature of some of the other worlds in which we humans have experiences.

The first proposition:
The world is discrete not continuous.

This applies to space, to time, and to almost every parameter. The continuous is an illusion. Given sufficient resolving power, the continuous is seen to be broken. The universe is structured fractally; at the base is Planck's constant, the monad of discreteness. Everywhere thingness is divided by nothingness. Thingnesses are separated by nothingnesses.

> *God divided the light from the darkness. God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters. God called the firmament Heaven.*

So we come to,
The second proposition:
The world consists of thingness and nothingness of something and nothing

Nothingness is as important in the totality of the world as is thingness. Ontology is the study of existence and reality. There must be a symmetric study of "nontology", of non-existeness, emptiness, and nothingness. As there are many varieties of things, there are many varieties of nothingness

Getting more specific,
The third proposition:
Existence occurs at certain singular points in the sea of nothingness

What exists is pre-established by an ontological template consisting of several dimensions and scales. The pattern of the template manifests itself on many scales and each of these manifestations is isomorphic to the others. What is *possible* is determined by the ontological template. What *exists* is determined by additional factors. Many of the possibilities may not be realized at a given time, some may never be realized.

A meta-proposition:
Each universe has its unique template which governs all systems and sub-systems contained in that universe.

The template of the universe in which we live is constructed around the specific values of the fundamental constants, G, c, $\hbar$, α, μ, and S. The set of universes to which ours belongs employs the same parameters in all its templates, but with different values of the parameters. A more general set of universes may use completely different defining parameters.

The true continuity is not in the physical.
The true "time-line" is a net of events in which
we serve (i.e. our physical bodies) serve as links,
or vehicles or cargo

The nodes are events

Immortality is in the net - not the traffic

The human is not a way of organizing
experience - the human is a vehicle for the
experience.

Where is the verge?

The fourth proposition:
The fundamental dynamic in this universe is the homogenization//diversification dialectic.

The dialectic consists of two basic opposing principles, one thrusting to homogenize to consolidate, to standardize, the other seeking to diversify, to fragment, to promote uniqueness. These principles interact with each other in four possible ways: 1) One force or principle completely dominating the other resulting in ever diminishing diversity [eg black hole], or the opposite, resulting in ever increasing diversity. [eg inflationary universe] 2) Alternating dominance resulting in oscillatory periods of decrease and increase [eg big bang, big crunch universe]. 3) No dominance by either force resulting in equilibrium and stasis [steady state universe]. 4) The instance remarked by Hegel, where a synthesis or emergence results from the interaction of the two principles. All change that takes place is the result of this dynamic. It manifests in many forms, such as contraction//expansion, consolidation//fragmentation, uniformity//pluralism, localization//non-localization, synchronization//noise, dogmatism//openness, etc.

The fifth proposition:
The selection of, and movement between, the existential singular points is random.

Release from one singular point permitting movement to another point (as for example a mutation) is random. However, when the random action is iterated, because of the pre-defined fixed positions of the singular points, the result appears as causality, as involving determinism. Nonetheless, the probability of the movement being to a close by singular point is much higher than to a distant point.

The sixth proposition:
Force creates form, form directs force.[1]

Form is created by the action of forces on aggregates of matter. The forms in turn direct the flow of the forces. The forms of clouds are created by the forces of wind and thermodynamics. The clouds in turn affect the flow of air and its thermodynamic properties. The forces of wind and water erode hills and rocks which in turn direct the flow of wind and water. The Chinese have long noted the effect of form on the flow of Ki. This they call ~~this~~ "feng shui" 風水 [wind, water]. We have no word for the creation of form by force. We might well call it "shui feng" 水風

The seventh proposition:
Information like matter may exist in three states: solid, liquid, and nebulous.

Or perhaps more accurately, in stored form, in communicative form, and in generative form. Information is intimately connected to iteration and recursion, to modulation and making macros. It is created and built through self referencing. It has many attributes of energy, such as decaying (cf entropy) unless refreshed. Diversification enhances it, homogenization destroys it.

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[1]In the case of general relativity, J.A.Wheeler puts it: Matter causes space to curve, curvature tells matter how to move.

BARONS01.WPD March 2, 2000

See 2001 #65

POLITICAL EVOLUTION
A BRIEF HISTORY

The four fold structure of societies has been long noted: The four castes in Hinduism, the four social branches in meso-american cultures, the four members of a Kalahari hunting party, etc. [Question: are these intrinsically related to the four psychological types?] In the Western tradition we have the King, the Barons, the Church, and the peasants. These have evolved in modern times respectively into the Government, the Corporations, the Media, and the citizens. I am sure that both the Church and the Media would deny being ancestor and offspring. While there may be no genetic connections, there are certainly functional or role connections. Both stand, or are supposed to stand, apart and independent of the others. As in separation of Church and State, or Freedom of the Press. But there has always been ambiguity concerning the Fourth Estate. The role of both Church and Media has been watch dog on the other three. Keeping them in line through confessionals or making public their privacies;. punishing them by threat of hell fire or editorial crucifixions. [Of course, both the Church and the Media have other aspects. Their overlapping function is the one noted here.]

Through the centuries in the West there has been constant struggle for power between the four groups. Beginning with Constantine, power gradually shifted from the King [or Emperor] to the Church. The decline of Church dominance began after the Crusades. There was a certain resentment of having to take care of Papal policies and pocketbook instead of taking care of home needs. The conflict then became centered on Barons challenging the King. In England the Barons won at Runnymede in 1215, while in Russia the Tsar beat the Boyars. [The difference in this outcome is still reflected in today's political structures.] Shortly after the great plague of the 14th century, disillusioned with the divine claims of the king, the peasants challenged those claiming authority. The Jacquerie in France and the followers of Wat Tyler and Jack Straw in England held peasant pitch fork revolts. Quickly the barons and the king forgot their differences and stamped out the upstarts. But the genii was out of the bottle and a short time later Jan Hus and his followers in Bohemia challenged the other authority, the church. Hus was burned at the stake, but the people were on the march. Hus had prepared the ground for Luther, and a reformation, though partial, occurred. The erosion of both Church and Kingly power was gradual, but over the centuries the Lords and the Commons increased in power. A civil war in England resulted in a quantum leap in curtailment of regal power. A hundred and fifty years later a revolution in the American colonies led to the concept of a government divided against itself, three branches with checks and balances, to limit the concentration of power. But the barons had also been evolving, and a civil war in America transformed the baronial concept from land holding to industrial power. The robber barons of industry fortified their power in legal maneuvering creating entities called corporations. These entities took on the checked and balanced government and took it over branch by branch. Today the peasants may have the vote, but it has been rendered meaningless in a government of the corporations, by the lobbyists, and for the superich.

The four fold struggle continues as a new millennium begins.

Instead of the foregoing, it may be argued that the basic four are the Prince, the Priest, the Warrior, and the Merchant. These would evolve into Government, Science and Technology, the Military, and the Corporations. But either way there is a struggle between them for authority and power. In this quadfurcation the peasants do not appear at all. [In India, the peasants are outside the four castes. They have no caste, they are called "untouchables".] Perhaps it is illusory that peasants have ever had a role. Whenever they raise their pitchforks the others quickly suspend their quarrels and put an end to the threat. [Toward the end of the Franco-Prussian war in 1871, the city of Paris was taken over by Communards, the predecessors of the 20th century's Communists. The warring French and Prussians quickly put their war on hold and formed a front to obliterate the threat of these upstarts.] The barons (corporations) and the king (government) will joust for power but will always unite whenever the peasants mount a protest. Today's struggle between corporate and political power is real [However, the corporations have just about won a complete victory], the fact that the struggle goes on is itself an indication that peasants are too soporific to be any threat. [The media have great expertise in generating opiates for the people]

The new millennium is bringing a novel shift in power. Science and Technology, the branch descended from priests, is creating a new power base and a new priesthood. The esoteric nature of much of the new technology and science is allowing those who master it to accumulate great wealth, authority, and power. Within a decade or so this new elite may be able to call all the signals.

A word must be said about the Military. In many countries the military has been a prime contender, and very frequently winner, for the position of power. This being true particularly of countries with immature democracies. Generals, colonels, juntas, in allegiance with industrialists have set up dictatorships from Germany to Chile. Here the checked and balanced government has so far kept this breed out, but President Eisenhower in a moment of historical perspicacity warned that even here it could happen.

The theme of power is central to human history. Of course there is art, philosophy, knowledge, and other developments that constitute the essence of civilization and culture. Power and its pursuit have little to do with these developments and with what we please to call progress.. Then what is the fascination with power and why do historians consider it to be the central theme of history? Human energy, both material and spiritual, goes for the most part into the struggle for power. The energy consumption of artists, scholars, and researchers, is minute in comparison to that of kings, armies, and the monuments they build to commemorate their conquests. It must be that if our energies go into the struggle for power, they drag with them our perceptions and emphases of what is important. Energy provides power and power draws to itself energy.

OWNERSHIP

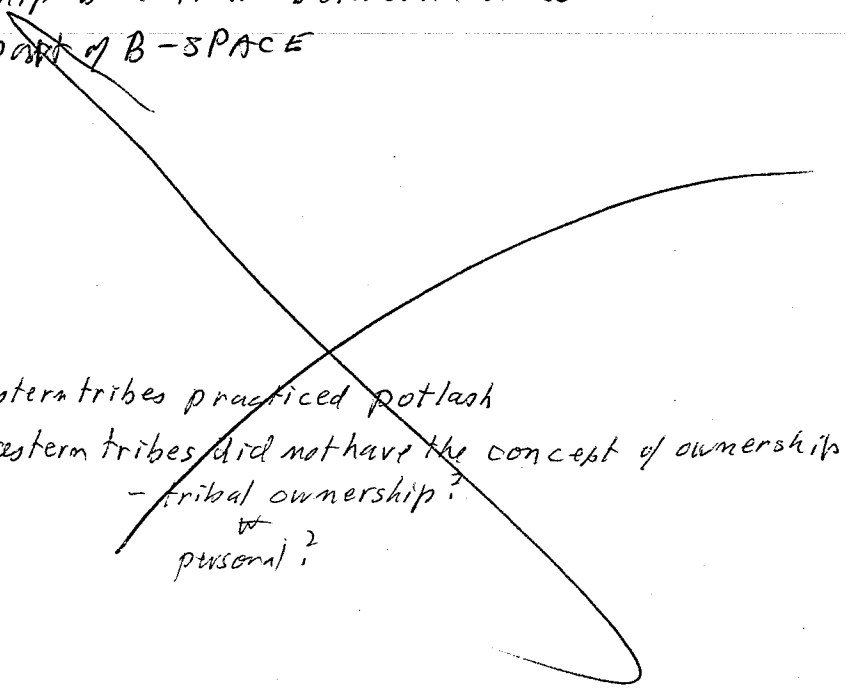
So fundamental that it is invisible is the concept of *ownership*. This concept is not restricted to humans but is possessed by countless other living species. Wolves mark off their turf with their urine, ants and bees stake out territories, plants demand their rights to access of sunlight and soil. Ownership of some context appears to be a basic of survival. Each species demands control over certain aspects of its context in order to survive. And here we might define ownership of a context as a matter of control over, (or at least rights to), that context. But there is an additional ingredient in ownership beyond control, and that is responsibility for maintenance and upkeep of whatever is owned. If survival is the motivation for ownership, then it is apodictic, since survival depends on the condition of the context, that maintenance of the context becomes a a responsibility of ownership.

Ownership then is a matter of both control and responsibility. Humans have learned the advantages of shared ownership, sharing rights and access to a context, along with shared responsibilities of maintenance. While this describes the nature of ownership, it says nothing about who becomes owner of what, nor about what can or cannot be owned. And these are the questions that require rethinking. Native Americans, especially plains tribes, found the concept of ownership of land incomprehensible. Until the industrial revolution, the ownership of humans by humans was a tradition in most cultures. [It was not morality that put an end to slavery, it was the steam engine and subsequent developments in the use of energy.] These examples of specifics that cannot or should not be owned have not been finally settled, but the more pressing question is the perennial question, who owns the "commons", that which must be shared? Indeed, who owns the earth, the ultimate commons that we must share?

The problem of ownership has taken on novel aspects with advances in technology. Who owns the electromagnetic spectrum? Is it part of the commons? Who owns the human genome? Is it part of the commons? What can be patented and by whom? While what is invented can be patented, is it right to allow what is discovered to be patented? What should go into the commons and what should be owned by individuals or corporations? These questions are before the courts and the legislatures but do either possess the criteria needed for decision making in this area? In strict analysis, authority does not rest with the courts or legislative bodies. Authority resides in the criteria. And at present these criteria derive in part from the capitalist system's definitions of a free market. In part from the traditions of ownership by creation, invention, or discovery. In part from the traditions of ownership by seizure and inheritance. In part from Biblical and other religious injunctions. It is here, on the level of the criteria, that our rethinking of ownership must begin.

Today's particular challenge to traditional ownership lies in the concept of "intellectual property". Can the concept of property in its traditional sense be extrapolated to the non-material? In what sense is intellectual property owned? If ownership means control, how is

Ownership is a link between modes
part of B-SPACE



The Western tribes practiced potlash
The Eastern tribes did not have the concept of ownership
- tribal ownership?
or
personal?

intellectual property to be controlled? The facts are, intellectual property cannot be both marketed and controlled. Intellectual property in the nature of a secret process can be controlled but not marketed. Intellectual property that is marketed cannot be controlled, even by licensing. It is becoming clear that traditional views of ownership do not work in the domain of non-material products. You cannot build a fence around and post intellectual property, although fees and patents attempt to do that, but with only limited success. The basics are: **ideas cannot be possessed like things,** information by its very nature must diffuse and inevitably be shared. Ownership is a concept that cannot be adapted to the information world into which we are moving. The electro-magnetic spectrum; plant, animal and human genomes; and the new commons, the internet, belong to all. Attempts to privatize and control them will ultimately fail. .

Politicians are always hunting for new things to tax. CEOs are always looking for new ways to make a buck. Both are looking on the internet, the new commons, as a forest to be harvested or a vein of ore to be mined. But be-the-first-to-grab capitalism will not work in the information world. We must not be worried if someone steals the goose from the commons, gets information without paying for it, but we must be worried about the threats to steal the commons from the goose. It will be painful for a capitalistic society to wake up and see that societies in which information and intellectual material are freely shared, without charges or taxation, leap ahead of the profit driven bottom line societies. The 20th Century saw the triumph of free market systems over party controlled communism, the 21st Century will see the triumph of the free information commons over profit controlled capitalism.

The information age is going to force us into an entirely different world view. If, as has been shown, ownership is intimately associated with survival, then the survival of the largest collective, the zoosphere, the living planet, has the highest priority. The planet itself is the primary commons. Then in order of size and extensiveness of role are the commons of subgroups: ecological complexes, local ecologies, humanity, human societies, ... on down finally to corporations and individuals. While this list is not in the order of the power possessed , it is in the order of the ultimate survivability of all.

Info Copies → multiplicity

Will the internet increase variety
or homogenize?

Exchange tends to homogenize

Isolation required for development of variety

AAS - All journals over 3 years old will be free on internet

" Give up trying to make claims for software features
that are commonplace technology"

The real problem lies in control without responsibility
Power without obligation
Privilege without price

McCain's IRON TRIANGLE: DONATIONS - LOBBYISTS - LEGISLATION
FORCE ⟷ FORM

Property Rights = ?

Ownership is inextricably interlaced with identity
as are guns.

I am what I possess

WATRSHED.WPD MARCH 6, 2000

WATERSHEDS

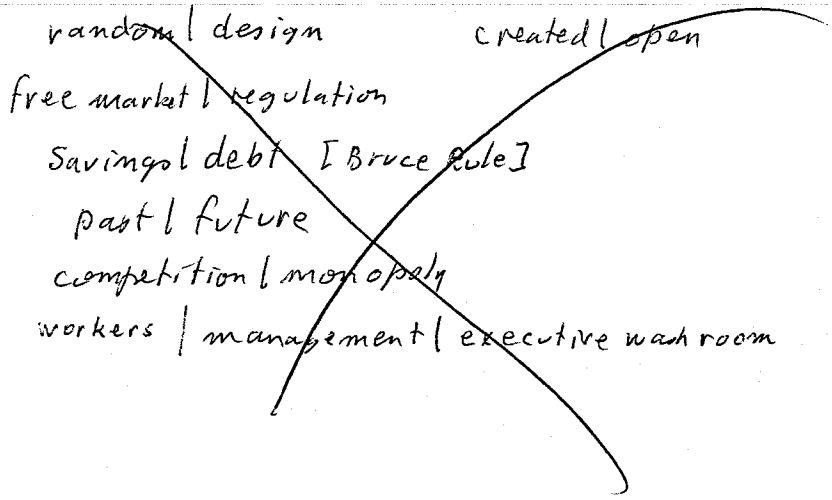
Watersheds are a subclass of dyads, different from opposites or duals, but having a Janus like nature.

When I was about eight years old I remember going with my Dad up to one of the mountain passes in Colorado, where the auto road went to an elevation of over 12,000 feet. We got out of the car and Dad explained to me that rain falling on the east side of the road would sooner or later find its way to the Atlantic ocean, while rain falling on the west side would end in the Pacific. He said we were standing on the continental divide. This was a literal watershed.

My boyhood in Colorado also led me to experience another kind of watershed. In summers my Mother and I would visit her family in Texas. We would get on the Fort Worth and Denver railroad in Denver at 11:00pm on a Monday and arrive in Fort Worth at 7:00 am on the following Wednesday, then on south for a full day on the Santa Fe and Cotton Belt till we reached out destination. In those days somewhere between that Monday evening and Wednesday morning, we passed through a watershed. Colorado and Texas were two distinct worlds. At home in Denver there were several blacks in my school, we were friends and nobody paid too much attention to race difference. But getting off the train in Fort Worth there were two waiting rooms, two kinds of restrooms, separate drinking fountains, one marked White, the other Colored. The watershed we had passed through was at the Texas state line where Jim Crow took over, creating that other watershed: White and Colored. The separate (but equal) facilities were only the surface manifestation of Jim Crow. Its roots went deep into the economy and the culture. I sometimes feel that even today, in the year 2000, vestiges of that watershed persist as expressed by the flag flying over the statehouse in South Carolina, but in the 1920's in the South the civil war was not over. The inability to get back at the Yankees got twisted into taking it out on the blacks.

So what does the continental divide have in common with Jim Crow? Just this. A boundary exists that separates behavior, separates what happens on one side from what happens on the other. Both nature and culture are filled with these watersheds. In nature there is the ferric watershed, the boundary at Iron, atomic number 26, that separates fusion from fission. Elements lighter than iron release energy when merged, those heavier than iron release energy when fragmented. There is the Schwarzschild watershed at $GM/c^2R = 1$, where if > 1 a mass collapses to become a black hole, and if < 1 can exist as a star, planet, nebula, etc. This watershed is like $v = \sqrt{(2GM/R)}$, if velocity is greater than the square root, the object will escape a planet's gravitational pull, if less it remains captive. In human cultures there are also watersheds. Bevelas' research has shown that if there are more than 5 members in a discussion group a chairman is needed, none required for 5 or fewer. In a coctail party, the number 17 present seems to determine whether the decibel level takes off or remains finite. There is the economic watershed of just making ends meet. Above this watershed you can save and continue to move up, below debt amasses and you are driven down. Finally there is the corporate size watershed. Above it is more profitable to split and divest, below it is more profitable to merge and consolidate. These watersheds, visible and invisible, control our destinies.

Additional watersheds:



KOANS01.WPD MARCH 10, 2000

THE SUPREME KOAN

Perhaps the world's most famous koan is: *What is the sound of one hand clapping*? What is the answer? Rather than seeking an answer, we are to inquire what is the purpose in ~~the~~ posing such a question. Such koans illustrate for us that it is easy to fabricate verbal situations that are experientially meaningless. This implies that the intellect, which is constrained by its principle tool, *language,* will inevitably create illusory situations and questions that are meaningless dead ends whose pursuit goes nowhere. It has been said that philosophy, the path of the intellect, is the attempt through the use of words to solve problems which were created by words. And there is basically no assurance that these problems are meaningful. Therefore koans were designed to alert those seeking deeper insight that the path of intellectual reasoning is by itself limited. This was pointed out by the Buddhist master, Kukai, who foresaw that of the ten levels of existence (Shingon), reason could not penetrate beyond the seventh. Similarly, and quite independently, the German philosopher Schőpenhauer noted that in order to reach deeper understanding at some point philosophy as vehicle must be abandoned. And more recently Gődel's incompleteness theorem established that there were limits in axiomatic reasoning, there were truths beyond those which could be logically derived and proved.

Many have been troubled by the Madhyamika doctrines of the Indian teacher Nagarjuna, that independent existence is unreal, and even that both existence and non-existence are illusory. The pursuit of Madhyamika ultimately leads to nihilism and total meaninglessness. If koans are to redirect our path from the confines of rationalism, can we consequently conclude that Nagarjuna was fabricating a koan, indeed **the supreme koan?** If so he has constructed a koan of such complexity that it invites continued intellectual exploration that would defeat its purpose as a koan. The best answer in this case might be found by following the strategy developed by the late Herman Kahn of nuclear war fame.

"So, Master Nagarjuna, you claim that nothing exists, all is an illusion. OK, we won't dispute that. Let's grant that all you claim is correct, and see where we go from there. We are living in a world, granted that living is an illusion and the world is an illusion, where we must make illusory decisions but still are accountable for these decisions. So it is like being on a movie set, it is all about illusion. But still we have to do the several things required to make this movie, knowing all along that it is not real. But in both real illusion and in movie illusion there is a common ingredient, and that is, we are stuck with roles to play. So in effect the nature of reality, whether it exists or is illusory makes no difference, it is the script that counts. It follows that choices and responsibility do not depend on the ontological nature of our context, but on the structure itself of the context, be it real or be it illusory. The bottom line is, if meaning derives from relation to our context, even nihilism does not obliterate meaning."

A Chela asked the Buddha.

"What is the most important question that we should ask?"

That is it - was the reply

THOUGHTS.WPD MARCH 28, 2000

SOME THOUGHTS ON THE MORNING OF A WESTERN SOLSTICE

November 4, 1998: Today is the day each year that the sun reaches its western most position, a western solstice. After moving to the west since the 29th of July the sun now begins to move eastwardly. This western solstice marks Samhain, the time the ancient Celts felt that our world was in closest proximity to the world of spirits. Indeed, if we stand back, we can feel the "specialness" of these days. Whether their mystique is due to the motion of the sun or to some inner emotion of our psyche, we are free to choose. The Samhain season is marked with days of cyclical origin: Halloween, the Day of the Dead, the Christian All Saints and All Souls. It is also marked with days having historical origin: Guy Fawkes, Soviet Oktyabr, Kristalnacht, and the Armistice of World War I.

Maybe our thoughts during the season of Samhain may also be of some special significance. Certainly mine this morning have been somewhat unusual. I woke up recalling something Fritz Zwicky said after one of his meetings with Einstein. He said that Einstein had the most remarkable talent of seeing the implications of any physical proposition in all its contexts. Tell him of a research result and he could immediately point out its affirmations or contradictions in other areas of physics, and suggest its implied hypotheses. What kind of different thinking did Einstein use? This same man who called for us to find a new way of thinking or risk extinction. If we look for some commonalities between this thinking mode of Einstein and the thinking of Newton, we note in both thinkers the imaginative ability to put normally unassociated events in juxtaposition: The falling of an apple and the path of the moon; the force of gravity and the geometry of space. Certainly to escape from our conditioned associations is one key to seeing the world in a new way, the way it might really be instead of the way we habitually think it to be. And the method of systematic juxtaposition is a powerful tool for this escape.

> A paradox is when your idea of how the world is differs from how the world really is – Richard Feynman

We particularly need to escape from the notion that a temporal sequence is a causal sequence. Linear time is a framework by which experience is organized by humans. The order in which events are experienced by human beings may have little to do with causality. Archetypes, for example, may manifest themselves as events in an order that has little or nothing to do with temporal sequence. "Camelots", for example, may appear at various intervals in historic time, caused by a "Camelot Archetype", not by a sequence of intervening temporal events. An archetype may manifest through of a set of events distributed in time in an apparently unordered way, but organized in some transcendent manner unperceived by humans. The so-called laws of physics may be the manifestations of the most probably occurring archetypes. The high frequency of their occurrence leads to an illusion that they are inviolable laws. The sequences they manifest

> A human being is a method of organizing experience. – Lama Kunga

are contained in the archetype. We impose on the sequences the concepts of temporality and causality.

SAMHAIN.WPD

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

TIME AND REALITY

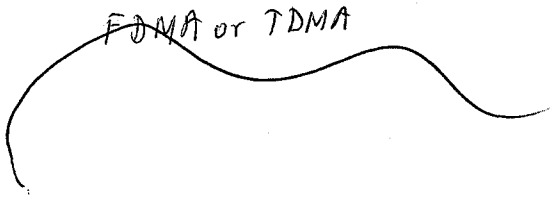
Samhain, in today's calendar, November 4th, when the passage between realities is most facile, when the sun is at its western most solstice, when the solar motion is purely southward. The time when beings from other realities come into our reality and we may go to theirs.

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.


FDMA or TDMA

Our Epistemologies

We discover what is real,

When we
Contemplate the majesty of mountains or
the protean forms of the clouds
When we
Ski down a steep slope or
soar up into the sky
When we
Watch children explore the newness of their world or
Newborn lambs nuzzling their ewe
When we
Hear the fugal power of a great organ or
the timeless call of ancient pipes
When we
Measure the forces within atoms or
analyze light from the stars
When we
Penetrate meanings of mathematical formulae or
view anomies of artists' creations
When we
Meditate in the stillness of a Zen garden or
return to the time of an ancient ruin
When we
Gaze into the sleeping face of a loved one or
weep with friends at a passing

We discover who we are.

These are our epistemologies,
Our ways of knowing the world and ourselves.
Each reveals to us a facet of ourselves
Each reveasl to us a facet of reality,
And each gives us a glimpse into those realities that lie beyond.

PREDICT1.WPD March 5, 1999; August 4, 1999; March 28, 2000

REPETITION, DETERMINISM, AND PREDICTABILITY

Whitehead proposed that only those phenomena that repeat are assimilated by human experience. The epistemology of science in particular is based on repeatability and requires all results to be reproducible. In addition to reproducibility science requires that its models and theories have the ability to predict. This requirement forces science to assume a deterministic world, since philosophically prediction hinges on some form of causal determinism. The portion of the world amenable to scientific epistemology is thus limited to those phenomena that repeat and are causally determined. With the recent advent of chaos theory a difficulty arose. Causal determinism was still held to be the fundamental mechanism of the universe, but predictability had been lost. Determinism and predictability were no longer an inseparable pair. Why? Did the difficulty lie in the nature of predictability or in the nature of determinism? Were there too many variables rendering systems too complex for current means of prediction, or were our notions of causality too simplistic? While the complexity of chaotic (that is non-linear) systems challenges classical modes of prediction, is it to be concluded that such systems are not deterministic? The answer seems to lie in the principle that chaotic systems, while deterministic, are not repeating. And since our modes of prediction rest on repetition, chaotic systems may be deterministic and yet be unpredictable. Hence the "paradox" of non-predictable deterministic systems.

Chaos also involves branching. Small variations at different points of the path lead to totally different attractors or outcomes. Determinism has traditionally been considered to be linear, with there being but a single possible outcome. But this is not true of chaotic or non-linear systems. So how must our concept of determinism be modified to account for plural outcomes? Is it possible, as Maxwell thought, that there are singular points in the paths of systems at which determinism relaxes, and the system becomes open? Then what operates to select an option at a singular point? And how dense along the path might singular points be? The classical option to necessity has been chance. So if those are the options, at a singular point chance or the random takes over. Afterwards the path is conventionally deterministic until the next singular point is encountered.

Maxwell's idea of singular points affords us a broader approach to characterizing systems. A system that is classically deterministic would have no singular points. Chaotic systems of different types would have from one to some finite number of singular points. The path of an random or "existential" system would consist of nothing but singular points. Such a system would be totally open and entirely free of its past.

Finally, we may ask, is it possible to predict by other algorithms than those based on repetitive and cyclical patterns? There has been fair success with certain statistical forecasting methods, and analogy and metaphor have often proved useful. But certainty is not to be had. Perhaps an obscure talent of our evolving brains will someday find full utility when we begin to understand the operations of "precognition".

Or if repeating, the complexity of a non-linear system is so great that the cycle(s) of repetition are not perceivable.

f^n

$n=0$ The spectrum of White Noise is $=1$ i.e. non-existent

(pink) $n=-1$ The spectrum of $\frac{1}{f}$ noise, the high frequency portion (frequently occuring) becom unnoticeable on the rate, intervals are remarked

∴ Whitehead must be modified. He is correct for high frequencies but not low

0	Random	free of history	(= white noise)
1	Markovian	last value only	(= brown noise)
2	Fibonaccian	last two values	
	⋮		
	Deterministic	subject to entire history	

Date: 3/21/2000 6:46:13 PM Pacific Standard Time
From: AlW1871
To: H Pollock

Dear Helen,

I have not seen "5/5/2000", but my friend Don tells me there is a great deal of discussion of it on the late night talk shows which he monitors. It seems that it may have something to do with an alignment of planets. It is evidently creating the same kind of excitement that Jose Arguelles aroused with his "Harmonic Convergence" back about 1987. Predictions may be valid, but when a specific date is included and it does not happen, the prediction is discounted. Predictions of what are very frequently valid, but no one seems very good at predictions of when. I might even quote Dan Quayle here "Prediction is risky, especially of the future."

Another predicition, again from the Mayans, is the end of the present era in December of 2012. We seem to be living in times having a high density of endings and beginnings.

Personally, I do not put precognitions (as from dreams or visions) in the same class as predictions. Predictions are left brain rational operations, (like predicting an eclipse), while precognitions are more whole brain non-rational operations. I very frequently have dreams that are realized within a day or two, such as hearing from someone I haven't seen or thought about in years, and sure enough a letter from them shows up in a day or so. I am sure you have often had this experiece too. Nostradamus seems to have been the foremost adept at precognition, even discounting interpretative spins given some of his verses.

And now comes Chaos Theory with the system being deterministic but unpredictable (even by big computers). Where does that leave us? Probably with prediction being phased out and precognition phased in.

I hope we can discuss these things and others real soon. Let me know more about the 5/5/2000 event.

Best to you and Tom,

PRECOG, WPD

NUMBNOTH.WPD APRIL 4, 2000 rev February 12, 2007

NUMBER AND NOTHINGNESS

When millennia ago it was found that there was no number that could represent the diagonal of a square, whatever the number that represented the side, a crisis in human cognition occurred. Evidently, number was more than could be represented by integers. The quantity that we represent today by $\sqrt{2}$ was a bill of divorcement, between the continuous and the discrete, between geometry and arithmetic, even between quality and quantity. The inferences that there were gaps between the numbers were overwhelming. Gaps? Gaps, so what? Gaps are nothing, we can ignore them. We don't ignore anything when we ignore nothing, do we? However in the centuries since the crisis at Croton, we have found what we discover in the gaps repeatedly liberates us from both our dogmas of perception and reason.

Continuity and contiguity are the illusions we embrace to enable us to ignore the gaps and relegate to meaninglessness the domains of Nagarjuna: shunyata, nothingness, emptiness, void. It has always proved easier to banish from thought something without a name than something with a name. But nothingness proved too powerful to ignore so it was finally felt better to corral it than to let it run namelessly wild. To facilitate our stance against nothingness, we finally found it useful to give it a symbol, "0" , zero. But along with the symbol came walls and fences to enclose it. Since "0" was really not a number like the others, to dignify this "no-thing" as a number was totally inappropriate. So there were rules to be strictly followed in handling this deformed alien, such as never allow it to be a divisor! But it turned out, once this no–thing was safely confined, it proved useful in our synchronic pursuits. It became a 'place holder' allowing us to design a system for representing numbers of all sizes. It became a watershed for our bottom lines discriminating profit from loss. But don't be fooled. Never let this no-thing out of its cage.

But Zero still leers at us threateningly from the bars of its cage. We know its power since it can send any quantity directly to an arithmetic trash bin, by a simple multiplicative operation,

$$0 \times A = 0.$$

It challenges us with examples like this: "What is the solution of the equation,"

$$1) \quad X + 1 = 1$$

No problem, that's were we will let you temporarily out of your cage, answer $X = 0$.
"OK, what then is the solution of the equation,"

$$2) \quad X + 1 = X$$

There is no solution, stay in your cage, there is no answer.
Oh? Alright, what is the difference between the nothing "0" in equation 1) and the 'no-solution' in equation 2)? Both are a form of nothing.
Hey, you try to squeeze all my meanings into one symbol. Look at it this way: $\aleph_0 + 1 = \aleph_0$ an equation you accept. Is this not a solution to 2)?" "Well, yes."
"Then why not allow $A/0 = \aleph_0$? Or better $A/0_0 = \aleph_0$, $A/0_1 = \aleph_1$, ... $A/0_n = \aleph_n$?
You see, there are as many species of nothingness as there are of thingness, or everythingness.
Yeah, but if we went along with this nonsense we would have to revise all our concepts from the law of the excluded middle to null sets. No way. Get back in your cage.

VERITAS1.WPD APRIL 4, 2000

TRUTH AND AUTHORITY

What is truth? --Pontius Pilate John 18:38

Is there *truth* apart from authority? Is what we call *truth* only the pronouncement of some teacher, judge, scripture, or process? Or is there something meant by *truth* that transcends all human claims, and if so can it be known? When examined, what we mean by *truth* is a concept endowed with the attributes of universal and eternal validity. But whenever some specific is given us proposing to fit that concept, it always comes through the claim of some authority. But all authority and authorities are ephemeral so there is nothing claimed by any authority on the basis of authority that can fit the concept of *truth* in having universal and eternal validity.

> ...they believe the writings and neglect the truth. Regiomontanus

Who and what are the authorities that have been endowed with the power of proclaiming truth? These fall into two classes: those set up by another authority, and those who self pro-claim their authority. In the first class are judges and juries appointed or elected by some second authority. In a democracy the second authority is the people. And the people's authority is in turn determined by the authority of majority. Then there are those who like Pope Pius IX in 1870 who proclaimed his own authority, the validity of his claim resting on the circular argument that he prepossessed the authority to make such a proclamation.

> And they asked Jesus: By what authority are you doing these things, and who gave you authority to do this. Mark 11:28

Next we come to scientific truth and the authority of science. Science delegates authority to a process, the so-called scientific method, which includes the inductive testing of hypotheses. But since an inductively established "truth" may at any time be falsified, science rejects the notion of *truth* in the sense of having ubiquitous validity. Instead science maintains that truth must be replaced by that which has been shown to be valid over some limited region of space and time. [But this is violated in cosmology by scientists assuming the "Cosmological Principle" which says that the laws observed to hold locally are valid everywhere.] Of course science too has its authorities, the Newtons, Darwins, and Einsteins who hold sway over scientific thinking for generations. But the ultimate authority resides in empiricism not in a publication.

Finally there is *recognition*, the learning of something new that you realize you had known all along. If there is anything that would approach a methodology leading to the ascertainment of *truth* it would be recognition. And recognition is not opinion. Opinion arises from the authority of ego; recognition arises from an invisible ineffable source shared by many. It is the test we each possess for discerning the validity of the claims of all the authorities. But it is not the source of our foible of projecting authority on "authorities".

ELIAN.WPD

April 7, 2000

See also 1998 #37

THE CURIOUS CASE OF ELIAN GONZALES

Since the arrival in Florida of the shipwrecked Elian last December the unfolding of events which have occurred in the United States invite comparison to a portion of the myth of Jason and his quest for the Golden Fleece. In the myth a dragon was slain and Jason was to plough a field and sow the teeth of the dragon. As soon as sown, the teeth quickly sprouted into armed warriors who rushed on Jason to seize him. But Jason had a magic rock which he threw into the midst of the warriors, one of whom thought a nearby warrior had assaulted him and began a fight. This fight spread among the warriors, who forgot Jason, and who in the end all slew one another.

The dragon of communism was slain, and the teeth were sown in the collective unconscious, but only with the coming of Elian-Jason, did the agenda-warriors spring forth. The magic rock was the innocence of a child, it brought forth a divisiveness among the warriors that revealed the depths of their uncertainties and the shallowness of their commitments. While all of this has provided a media circus, opportunities for political posturing and publicity, the basics that drive the story lie in the mythic archetype. Something present, but asleep in each of us, has been tapped.

As each agenda emerges it is attacked and slain. There is no complete case pro or con regarding what is to be done with or for Elian. The universal importance of family, the comparison of life styles, the rule of law and which law, the fulfillment of the intent of a tragic voyage, the fitness or unfitness of various parties, all encased in a container created by the dragon's teeth.

What has been brought to light is the great variance in our values. While pluralism in the ordaining and ordering of values must be standardized by a rule of law, we find that underneath we are living in an axiological disorder fabricated on inconsistencies, contradictions, and hypocrisies. The test of interchange has shown this clearly. Interchange the US with Cuba, interchange father with mother, interchange child first with family first. With every interchange an advocacy collapses. What is revealed is that we support one set of rules for me, a different set for you. This is at the level of organisms that have not succeeded in fabricating a social order. Frankly it is frightening to look into this mirror. It appears that good and evil are only magnetic poles to which to attach my opinion and your opinion. Reality is created by labeling. And how do we solve equal justice under law, the same set of rules for all of us, against the fact that each person and every event is unique. Without this uniqueness being taken into consideration, law and justice are incompatible.

The Jason-Dragon Seed archetype, (which elsewhere is called a cross-dialectic) destroyed the monopoly of the Papacy in the 16th century, destroyed the Soviet Union in the 20th century, and may destroy the illusions of the United States in the 21st century. In the gift of this small boy, our search for the Golden Fleece may have been rendered successful, but only after ~~we can slay~~ the agenda-warriors. are slain.

April 22, 2000

THE CASE OF ELIAN PART II

This morning at 5:00 am federal marshals broke into the Miami home of Elian's uncle and took the boy and flew him to Andrew's Air Force Base in Washington where he was to be reunited with his Father. The crowds were hostile and angry shouting that they never expected to see this kind of activity in the United States. It was just like Castro's Cuba.

It is time to remind these refugees from a Communist tyranny that their actions are very much like Communist Party tactics in France, Italy, and other countries. These Cubans, while having a different ideology, have adopted Communist tactics. After all, in this country it is primarily this kind of tactics we oppose rather than particular abstractions of social and political ideologies. In the United States ideologies win or lose in the market place of ideas, in their acceptance or rejection by the people, not in their being forced on us by street battles. [As in the original communist take over in Petrograd in 1917] Communism has a record of prevailing through violence, never in winning through legal processes. [Allende in Chile was one exception] These Cubans chose to oppose the law of their adopted land and import the tactics that they claim to be refugees from. They would prevail by setting up a situation of black mail forcing the government to use force. They fled Cuban Communism but brought with them its methods, and project onto the Government of the United States the lawlessness that is in reality their own doing.

Not only these people, but all of us need to differentiate the necessity of law, legal process and order from whatever our political and ideological preference. This is what America is about: Open ended in ideas, restrained in process; Respect for minorities, but not to be defied ~~by~~ and assaulted by a wild hooligan minorities. Here even process may be amended, but again only by process, not by disobedience. This may be too slow for some, but it avoids impulsive emotional actions to be regretted later. Ultimately what is involved is the selection of the right rate of change for what is to be changed.

My final conclusion is that most people, Americans, Cubans, those living whererer, place family above politics.

Finders Keepers
Losers Weepers

The relatives actions in effect became kidnapping including ransom

> And some accuse the government of kidnapping. When does reclaiming a hostage held by kidnappers become kidnapping.[2]

The struggle was over how to frame the issue [create a package]
The result was most feel family takes precedence over politics

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The Case has opened eyes: revealed the fallacies and our illusions:

1) This is a country of law, not of men
   Not true - men interpret the law
   men enforce or do not enforce the law
   reverse appeals
   refuse ~~appeals~~
   The courts are capricious not color blind

   Both law and fact do not exist without interpretation LIK

2) The McLain Triangle:
   Donations - Lobbyists - Legislation

3) The unworthiness of the candidates and the selection process

4) The manipulability of the populace
5) The inhumanness of capitalism
Σ: failure of the system

We must follow the injunction of Jefferson
Reconvene the Founding Fathers, and this time include the mothers
Call a Constitutional Convention

Clean House

CREEDS.WPD April 8, 2000

ON CREEDS

It is noteworthy that Judaism is based on the injunctive, while Christianity is based on the ontological. The basis of Jewish life, the Commandments; the basis of Christian life, the creed. [Apostle's or Nicene]. It is strange that a religion should be centered on ontological assumptions rather than directly on prescriptions and proscriptions on the living of life. Yet each sentence in the creed [with the possible exception of 'the forgiveness of sins'] is an ontological proposition. I do not question that there exists some profound connection between the ontological and the injunctive, but I fail to see any explicit linkage in the creeds.

Also of interest and related to this, is the Declaration of Independence, which is in part a creed.

"We hold these truths to be self-evident that all men are created equal and are endowed by their creator with certain inalienable rights.... "

Is the ontological statement that all are created equal prerequisite to giving all equal rights? Can equal rights not be derived from empirical or axiological considerations?
But the declaration goes on to say,

"..power is derived from the consent of the governed" ontological, no axiological, yes

and

"...the people have the right to alter or abolish the government"

These statements clearly depart from the ontological, and return to the injunctive or imperative.

Next we come to a modern creed used by the Unitarian Universalist Association. We covenant to affirm and promote:

The inherent worth and dignity of every person
Justice, equity, and compassion in human relations
Acceptance of one another and encouragement to spiritual growth in our congregations
A free and responsible search for truth and meaning
The right of conscience and the use of the democratic process within our congregations and in society at large
The goal of world community with peace, liberty, and justice for all
Respect for the interdependent web of all existence of which we are a part.

Here is a creed almost purely injunctive, rendering it open ended but nonetheless contained within the secular wisdom of our times. [We must note, however, that the "interdependent web of all existence" is an ontological proposition]

Saving the question of the interdependence of ontology and axiology for another occasion[1], we note the movement within religious groups to express their beliefs in terms of what to do and how to live rather than in terms of a hypothetical ontology constructed of no longer meaningful symbols.

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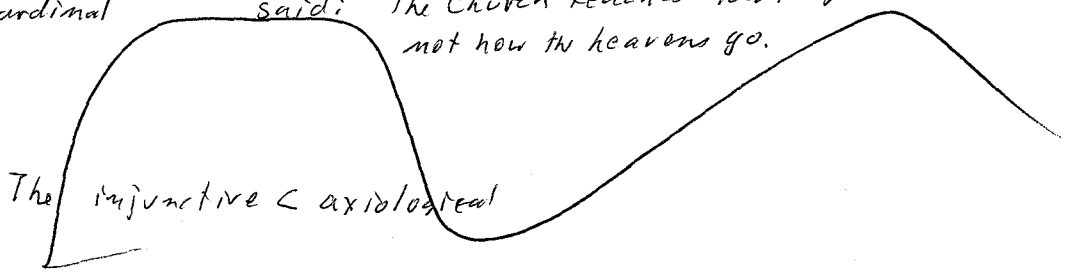
[1]This is an alternate formulation of the question, Given the world as we find it, what is our role in it?

At Galileo's Trial

Cardinal said: The Church teaches how to go to heaven not how the heavens go.



MOREWEEK.WPD APRIL 10, 2000

see also 1991 #88; 1994 #7, #13, #15

STILL MORE ABOUT THE WEEK

It has been noted that in looking for a natural cycle related to the week, that it is the earth itself, not the moon or some other planet, that provides the cycle. Indeed, it is the relation between the day and the earth's Schuster period that gives us a cyclical basis for the week. The Schuster period is related to the mass and size of the earth and is the time period in which a satellite would circle the earth at its surface were there no atmosphere or other obstructions. It is the limiting value of time that Kepler's third law would assume for a minimum orbital radius. In this case the minimum orbital radius being the mean radius of the earth itself. The Schuster time T is given by,

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

where R is the earth's mean radius, G is Newton's constant, and M is the mass of the earth.

		Value in seconds	$\log_{10}$ value in seconds
T	The earth's Schuster Period	5042.51897	3.7026475
S	The earth's sidereal day	86164.09054	4.9353264
D	The mean solar day	86400.	4.9365137

First note the ratios:

$\frac{\log T}{\log S} = 0.7502326$ $\frac{\log T}{\log D} = 0.7500531$

Indicating that to within about 5 parts in 10^5 the ratio of the logarithms of the Schuster period to the day is 3 to 4. An example that many of the astronomical period or frequency ratios are between log values, unlike ratios of frequencies in music.

Next note the following values:

The first solution to the diaphantine equation M x T = N x D gives M = 120 and N = 7.

D/T = 17.134294, 120/7 = 17.142857, with $\delta = 0.009$ or 9 parts in 10^3

Seven days is equal to 604,800 seconds, 120 Schuster periods is equal to 605,102.27 seconds, the difference being 302 seconds or just over five minutes.

302/604,800 = 0.0004993 or 5 parts in 10^4

It is accordingly suggested, without a mythic explanation regarding the origin of the week, that somehow humans tuned in on this basic relation between these two fundamental natural cycles.

The week is the 7th harmonic of the day

The week is the 120th harmonic of the Schuster Period = S

both = 10,080 ~~min~~

$\S = 84m$

$H = 120m$

~~$S \times H = 1 week$~~

$120\S = 84H = 1 week$

log harmonics: S = schuster

$4 \log S = 3 \log D$

A ratio of logarithms is a fractal dimension

The 4th harmonic of $\log S$

= The 3rd harmonic of $\log D$

RELATIONS BETWEEN D & S

$7 \times D = 120 \times S$

$3 \times \log D = 4 \times \log S$

independent of the base of logarithms

$21\, D \log D = 480\, S \log S$

$28\, D \log S = 360\, S \log D$

$\frac{90}{7}$ $A = \frac{360}{28} \frac{S \log D}{D \log S} = 12,857143 \frac{SD}{DS}$

$\frac{22}{12} \cdot = 1.\overline{7} = \left(\frac{4}{3}\right)^2$

$\frac{160}{7}$ $B = \frac{480}{21} \frac{S \log S}{D \log D} = 22,857143 \frac{SS}{DD}$

$\frac{160}{7} \frac{\log S^S}{\log D^D} - \frac{90}{7} \frac{\log D^S}{\log S^D} = \cancel{0}$

$4^2 \frac{\log S^S}{\log D^D} - 3^2 \frac{\log D^S}{\log S^D} = 7$

$\frac{360}{28} + 10 = \frac{480}{21}$

$3^2 + 7 = 4^2$ $\quad 3^2 + 7 = 2^4$

$-3^2 + 5^2 = 4^2$ $\quad 5^2 + 7 = 2^5$

$7 + 5^2 = 2^5$ $\quad 11^2 + 7 = 2^7$

$\frac{A}{B} = \left(\frac{4}{3}\right)^2 \frac{SS}{DD} \cdot \frac{DS}{SD}$

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If $A = \frac{3.4.10}{7} = \frac{120}{7} = 17,142857$, $\log K = 1,2340832$

then $K^{32} = 3,059 \times 10^{39}$

$= 39,490662$

$\S = 0,134781$

$K^{33} = 40,724746$

$aMS = 40,482954$

$S = 0,241792$

$14 \times S = 3,385088$

$(aM)^3 = 3,381222$

PSEPON.WPD APRIL 21, 2000

COGNITION AND REALITY

LEVEL			
IMAGINATIVE	CONCEIVED	NOT CONCEIVED	UNCONCEIVABLE
SENSORY	PERCEIVED	NOT PERCEIVED	UNPERCEIVABLE
EPISTEMOLOGICAL	KNOWN	NOT KNOWN	UNKNOWABLE
ONTOLOGICAL	EXISTING	NOT EXISTING	UNEXISTABLE

PROPOSITIONS and QUESTIONS

1] The PERCEIVED is a subset of the KNOWN
because there are alternative modes of knowing beside perception, eg intuition, logic, etc

2] The KNOWN is a subset of the EXISTING

3] We habitually but erroneously assert that existence is tied to perception or
What is not perceived does not exist

4] Three reasons for non-perception:
   1) Not experienced, i.e. exists but has not been encountered
   2) Beyond the limitations of perception (UNPERCEIVABLE)
      Some limits: Eddington limit, 1/f noise, Weber-Fechner limit,
      Whitehead limit, Pythagoras' limit (some are intrinsic, some escapable)
   3) NON EXISTING

5] Besides the limitations of perception, there are limitations of knowing
These have to do with the limitations of reason and logic (Gődel),
of computability (Turing), and the nature of the random (Chaitin)

6] Is Gődel's incompleteness theorem (cannot be both consistent and complete)
an ontological theorem [cf Ratna Sambhava] as well as an epistemological theorem?
[Note: This theorem puts traditional theistic and monistic notions in question.]

7] Is consistency/inconsistency the ontological boundary between existability and non-existability? [again Ratna Sambhava]

8] There must be a sufficient body of consistent {equations-propositions-phenomena} to qualify as {theory-model-reality} ~~ Einstein

9] Kant's *phenomena* belong to the set of KNOWN + EXISTING

10] Kant's *noumena* belong to the set of EXISTING but NOT KNOWN

STARFRM1.WPD APRIL 23, 2000

STAR FRAMES PART I

THE SCHWARZSCHILD FRAME

The values in these tables are the positions allowed for neutron stars .

TABLE I [values are $\log_{10}$]

	maximum	mean	minimum
MASS	$\alpha\mu S\ m_o = 35.820755$	$S\ m_o = 34.693681$	$(S/\alpha\mu)\ m_o = 33.566607$
RADIUS	$\alpha\mu S\ l_o = 7.691409$	$S\ l_o = 6.564335$	$(S/\alpha\mu)\ l_o = 5.437261$

M^* = max mass, $M\sim$ = mean mass, M_* = min mass

R^* = max radius, $R\sim$ = mean radius, R_* = min radius

$m_o/l_o = c^2/G = 28.129346$; $m_o l_o = \hbar/c = -37.453745$; $S^2\hbar/c = 41.258015$

TABLE II

$M^*/R^* = m_o/l_o = c^2/G = 28.129346$	$M^*R^* = (\alpha\mu)^2\ S^2\ \hbar/c = 2.254148\ S^2\ \hbar/c$
on Schwarzschild bound	$= 80.965908\ \hbar/c = 43.512163$
$M^*/R\sim = \alpha\mu\ m_o/l_o = 1.127074\ c^2/G$	$M^*R\sim = \alpha\mu\ S^2\ \hbar/c = 1.127074\ S^2\ \hbar/c$
in 2nd quadrant, $= 29.256420$	$= 79.838835\ \hbar/c = 42.385090$
$M^*/R_* = (\alpha\mu)^2\ m_o/l_o = 2.254148\ c^2/G$	$M^*R_* = S^2\ \hbar/c = 1\ S^2\ \hbar/c$
in 2nd quadrant, $= 30.383495$	$= 78.711760\ \hbar/c = 41.258015$
$M\sim/R^* = (\alpha\mu)^{-1}\ m_o/l_o = -1.127074\ c^2/G$	$M\sim R^* = \alpha\mu\ S^2\ \hbar/c = 1.127074\ S^2\ \hbar/c$
in 1st quadrant, $= 27.002272$	$= 79.838835\ \hbar/c = 42.385090$
$M\sim/R\sim = m_o/l_o = c^2/G = 28.129346$	$M\sim R\sim = S^2\ \hbar/c = 1\ S^2\ \hbar/c$
on Schwarzschild bound	$= 78.711760\ \hbar/c = 41.258015$
$M\sim/R_* = \alpha\mu\ m_o/l_o = 1.127074\ c^2/G$	$M\sim R_* = (\alpha\mu)^{-1}\ S^2\ \hbar/c = -1.127074\ S^2\ \hbar/c$
in 2nd quadrant, $= 29.256420$	$= 77.584687\ \hbar/c = 40.130942$
$M_*/R^* = (\alpha\mu)^{-2}\ m_o/l_o = -2.254148\ c^2/G$	$M_*R^* = S^2\ \hbar/c = 1\ S^2\ \hbar/c$
in 1st quadrant, $= 25.875198$	$= 78.711760\ \hbar/c = 41.258015$
$M_*/R\sim = (\alpha\mu)^{-1}\ m_o/l_o = -1.127074\ c^2/G$	$M_*R\sim = (\alpha\mu)^{-1}\ S^2\ \hbar/c = -1.127074\ S^2\ \hbar/c$
in 1st quadrant, $= 27.002272$	$= 77.584687\ \hbar/c = 40.130942$
$M_*/R_* = m_o/l_o = c^2/G = 28.129346$	$M_*R_* = (\alpha\mu)^{-2}\ S^2\ \hbar/c = -2.254148\ S^2\ \hbar/c$
on Schwarzschild bound	$= 76.457612\ \hbar/c = 39.003867$

STARFRM2.WPD APRIL 23, 2000

STAR FRAMES PART II

THE MAIN SEQUENCE FRAME

The values in these tables are the positions allowed for normal stars .

TABLE I [values are $\log_{10}$] $[\alpha^2 = -4.273670]$

	maximum	mean	minimum
MASS	$\alpha\mu S\ m_o = 35.820755$	$S\ m_o = 34.693681$	$(S/\alpha\mu)\ m_o = 33.566607$
RADIUS	$(\alpha\mu S)\ l_o/\alpha^2 = 11.965079$	$S\ l_o/\alpha^2 = 10.838005$	$(S/\alpha\mu)\ l_o/\alpha^2 = 9.710331$

M^* = max mass, $M\sim$ = mean mass, M_* = min mass

R^* = max radius, $R\sim$ = mean radius, R_* = min radius

$\alpha^2\ m_o/l_o = \alpha^2\ c^2/G = 23.855676$; $m_o l_o/\alpha^2 = \hbar/c\alpha^2 = -33.180075$; $S^2\hbar/c\alpha^2 = 45.531685$

TABLE II

$M^*/R^* = \alpha^2\ m_o/l_o = \alpha^2\ c^2/G = 23.855676$	$M^*R^* = (\alpha\mu)^2\ S^2\ \hbar/c\alpha^2 = 2.254148\ S^2\ \hbar/c\alpha^2$
on the α^2 bound	$80.965909\ \hbar/c\alpha^2 = 47.785834$
$M^*/R\sim = \alpha^2\ \alpha\mu\ m_o/l_o = 1.127074\ \alpha^2\ c^2/G$	$M^*R\sim = \alpha\mu\ S^2\ \hbar/c\alpha^2 = 1.127074\ S^2\ \hbar/c\alpha^2$
above α^2 bound $= 24.982750$	$= 79.838835\ \hbar/c\alpha^2 = 46.658759$
$M^*/R_* = \alpha^2\ (\alpha\mu)^2\ m_o/l_o = 2.254148\ \alpha^2\ c^2/G$	$M^*R_* = S^2\ \hbar/c\alpha^2 = 1\ S^2\ \hbar/c\alpha^2$
above α^2 bound $= 25.728602$	$= 78.711760\ \hbar/c\alpha^2 = 45.531685$
$M\sim/R^* = \alpha^2\ (\alpha\mu)^{-1}\ m_o/l_o = -1.127074\ \alpha^2\ c^2/G$	$M\sim R^* = \alpha\mu\ S^2\ \hbar/c\alpha^2 = 1.127074\ S^2\ \hbar/c\alpha^2$
below α^2 bound $= 22.728602$	$= 79.838835\ \hbar/c\alpha^2 = 46.658759$
$M\sim/R\sim = \alpha^2\ m_o/l_o = \alpha^2\ c^2/G = 23.855676$	$M\sim R\sim = S^2\ \hbar/c\alpha^2 = 1\ S^2\ \hbar/c\alpha^2$
on the α^2 bound	$= 78.711760\ \hbar/c\alpha^2 = 45.531685$
$M\sim/R_* = \alpha^2\ \alpha\mu\ m_o/l_o = 1.127074\ \alpha^2\ c^2/G$	$M\sim R_* = (\alpha\mu)^{-1}\ S^2\ \hbar/c\alpha^2 = -1.127074\ S^2\ \hbar/c\alpha^2$
above α^2 bound $= 24.982750$	$= 77.584687\ \hbar/c\alpha^2 = 44.404611$
$M_*/R^* = \alpha^2\ (\alpha\mu)^{-2}\ m_o/l_o = -2.254148\ \alpha^2\ c^2/G$	$M_*R^* = S^2\ \hbar/c\alpha^2 = 1\ S^2\ \hbar/c\alpha^2$
below α^2 bound $= 21.601528$	$= 78.711760\ \hbar/c\alpha^2 = 45.531685$
$M_*/R\sim = \alpha^2\ (\alpha\mu)^{-1}\ m_o/l_o = -1.127074\ \alpha^2\ c^2/G$	$M_*R\sim = (\alpha\mu)^{-1}\ S^2\ \hbar/c\alpha^2 = -1.127074\ S^2\ \hbar/c\alpha^2$
below α^2 bound $= 22.728602$	$= 77.584687\ \hbar/c\alpha^2 = 44.404611$
$M_*/R_* = \alpha^2\ m_o/l_o = \alpha^2\ c^2/G = 23.855676$	$M_*R_* = (\alpha\mu)^{-2}\ S^2\ \hbar/c\alpha^2 = -2.254148\ S^2\ \hbar/c\alpha^2$
on the α^2 bound	$= 76.457612\ \hbar/c\alpha^2 = 43.277537$

STARFRM3.WPD APRIL 23, 2000

STAR FRAMES PART III

THE SUN

The values in these tables are the observed and frame positions for the sun.

TABLE I [values are $\log_{10}$]

SOLAR	Observed	Frame	Frame Value
MASS 1	33.298657 g	$(S/\alpha\mu)\ m_o$	33.566607 g
MASS 2	33.298657 g	$(S/\alpha\mu)\ \alpha^{1/8}\ m_o$	33.299503 g
RADIUS 1	10.842302 cm	$(\alpha\mu S/\alpha^2)\ l_o$	11.965079 cm
RADIUS 2	10.842302 cm	$(S/\alpha^2)\ l_o$	10.838005 cm

Δ Frame Mass 1 - Frame Mass 2 = 0.267104 = $\alpha^{1/8}$

Δ Frame Mass 1 - Observed Solar Mass = 0.267950

Δ Frame Mass 2 - Observed Solar Mass = 0.000846 ~ antilog 1.0018 or 2 parts per thousand

Δ Frame Radius 1 - Frame Radius 2 = 1.127074 = $\alpha\mu$

Δ Frame Radius 1 - Observed Solar Radius = 1.122777

Δ Frame Radius 2 - Observed Solar Radius = 0.004297 ~ antilog 1.009 or 9 parts per thousand

We conclude the Solar Mass = $(S/\alpha\mu)\ \alpha^{1/8}\ m_o$ and the Solar Radius = $(\alpha\mu)^{-1}/\alpha^2\ (\alpha\mu S)\ l_o$ conforming to $(S/\alpha\mu)^n m_o$ for mass and $(\alpha\mu S)^n l_o$ for size.

TABLE II

Observed Solar	Frame Value
M/R = 22.456355	M/R = 22.461498
MR = 44.140959	MR = 44.137508

The α^2 boundary = $\alpha^2\ m_o/l_o = \alpha^2\ c^2/G = 23.855676$; $S^2\hbar/c\alpha^2 = 45.531685$

Observed differences:

Δ Solar M/R and α^2 boundary = $\log_{10}(1.399321)$ or 25.079623

Δ Solar MR and $S^2\ \hbar/c\alpha^2$ = $\log_{10}(1.390726)$ or 24.588158

The mean density of the sun is: (M/V)

$\rho = \log_{10}(0.149662)$ g/cm^3 or 1.411 g/cm^3

The mass of the sun is given exactly by:

$$M = 1 + (\alpha\mu)^{-17/8}\ S\ m_o = 1 + 32.298648 = 33.298648$$

probably a numerical coincidence.

STARFRM4.WPD APRIL 25, 2000

STAR FRAMES PART IV

FRAME DENSITIES

All values are $\log_{10}$ values. Densities are given as M/R^3;
To convert to Mass/spherical Volume, subtract 0.622089; $[M/R^3 - 0.622089 = M/V]$
Density of the Planck particle: $m_o/l_o^3 = c^5/\hbar G^2 = 93.712439$ g/cm^3
Density of a proton: $m_p/r_e^3 = 13.873602$ g/cm^3

NEUTRON STARS	M^*	$M_\sim$	M_*
R^*	12.746528 SL	11.619454 1Q	10.492380 1Q
$R_\sim$	16.127747 2Q	15.000673 SL	13.873599 1Q
R_*	19.508972 2Q	18.381898 2Q	17.254824 SL

SL = on the Schwarzschild bound; 1Q = in first quadrant; 2Q = in second quadrant
Note: The $M_*/R_\sim^3$ density is identical with that of the proton. This suggests that the proper equations for mass and radius of a neutron star are $(S/\alpha\mu)m_o$ and $S\, l_o$ respectively.
[However, the proton uses $(\alpha\mu/S)^{1/2}\, m_o$ and $(\alpha\mu S)^{1/2}\, l_o$ respectively.]

" α^2 " STARS	M^*	$M_\sim$	M_*
R^*	-0.074482 ON	-1.201556 B	-2.328630 B
$R_\sim$	3.306740 A	2.179666 ON	1.052592 B
R_*	6.689762 A	5.562688 A	4.535077 ON

ON = on the α^2 bound; A = above the α^2 bound; B = below the α^2 bound
Note: For the sun $M/R^3 = 0.771751$, which differs from $M_*/R_\sim^3$ by a factor of about 2.
The solar $M/V = 0.149662$ or antilog 1.411 g/cm^3

UNIVERSE	M^*	$M_\sim$	M_*
R^*	- 27.736426	- 29.427037 X	- 31.117648 X
$R_\sim$	- 22.664593 C	- 24.355204 C	- 26.045815 C
R_*	- 17.592760 C	- 19.283371 C	- 20.973982 C

In an homogeneous isotropic model, the critical density is $\rho_c = 3H_o^2/8\pi G$. If the present density is ρ_o and $\Omega_o = \rho_o/\rho_c$, then the universe will expand forever if $\Omega_o < 1$ or will collapse if $\Omega_o > 1$.
Taking H_o as 71.977 km/s/mpc, $[T_U = 17.456065]$, $\rho_o = -27.736426$ g/cm$^3 \equiv \rho_c$ if the mass of the universe is given by M^* and the radius by R^*. In the above table X means if this is ρ_o, the universe will expand forever, and C means with this value of ρ_o the universe will collapse. If the present density = the critical density $[\Omega_o = 1]$, then the universe is stable.

PHILOS4.WPD APRIL 26, 2000

THE FOUR BRANCHES OF PHILOSOPHY

Names for three of the four basic aspects of philosophy may be taken from tradition:

ONTOLOGY: The nature of existence. The worlds that exists and their properties, Forces, Forms, Energy, Information, Processes, Change, Evolution

EPISTEMOLOGY: The tools and methods of knowing a world: Perception, Logic, Intuition, Recognition, Representations, Language, Symbols

AXIOLOGY: The Free and the Fixed, Options and Selections, Choices and Criteria, Values, Morals, Ethics, and their sources, Risk and Optimization strategies

The fourth basic aspect has to do with modes of escape from the conclusions and limitations of the other three. Perhaps it could be labeled:

METAOLOGY: The search for limits and how to transcend them, the search for alternatives and how to detect and create them, the extension of known differences and commonalities, the search for unknown differences and commonalities, looking beyond differences and commonalities, stepping outside all orthodoxies

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The purpose of an epistemology is to unveil an ontology. The purpose of axiology is to digest the results of epistemology-ontology and provide feedback for epistemological modifications and corrections. Metaology is to remain detached from the other three, yet incorporate whatever is learned in order to perform its mission of liberation.

Ontology subsumes cosmology, physics, and the other branches of science. It seeks to detect the order and structure inherent in the world. Epistemology subsumes the methodology of science and all other modes of knowing. It seeks the ordering and clarification of the isomorphisms between its symbols and their antecedents. Axiology subsumes the ordering and optimization of relations between and within social aggregates. It seeks to create a viable infrastructure for the support and sustainment of its selected paths and goals of human activity and creativity. Metaology subsumes the perceptual, intellectual and feeling realms. It seeks the enhancement of being and its powers and searches for powers and faculties beyond those we now possess. It goes beyond and replaces the role that human religions have attempted to fill in the past.

In what way does metaology differ from axiology? Primarily in that axiology is empirical, based on past experience, while metaology places no limits on the sources of its inputs. It grasps for every glimpse of "other worlds" beyond common experience. Its function is to keep all else open ended. While the first three are consumed with actualizing potential, metaology is dedicated to expanding potential. In this way it supplies the fuel on which the others depend for their respective operations of exploration, creation, and direction.

Metaology is not about the world, knowledge of the world, nor relationships.
Metaology is about the knower.

MEDNAG.WPD APRIL 27, 2000

The Meditations of Nagarjuna

First, if there be but one value of an attribute, then that attribute ceases to exist.
Second, if an entity has but a single attribute, then that entity ceases to exist.

Consider the Planck Particle and its attributes of energy, force, extension, time, and mass.

What are the energies of the Planck particle?

There is $m_o c^2 = 16.291442$
There is $Gm_o^2/l_o = 16.291442$
There is $\hbar\nu = 16.291442$
There is $e^2/\alpha l_o = 16.291442$
There is $(\hbar c^5/G)^{1/2} = 16.291442$

According to the first proposition, since there is but one value for the attribute energy, the Planck particle does not possess energy.

What are the forces of the Planck particle?

There is $m_o c^2/l_o = 49.082989$
There is $Gm_o^2/l_o^2 = 49.082989$
There is $\hbar\nu/l_o = 49.082989$
There is $e^2/\alpha l_o^2 = 49.082989$
There is $c^4/G = 49.082989$

Again, since there is but one value for the attribute force, the Planck particle does not possess the attribute force.

Energy/Force = Extension. For each energy and every force, the quotient is = $-32.791547 = l_o$
It follows from the first proposition that the Planck particle does not possess the attribute size.

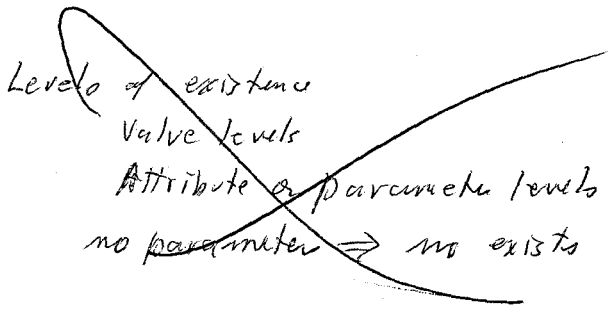
What are the times [or frequencies] of the Planck particle?

There is $l_o/c = -43.268366$ There is $(l_o^3/Gm_o)^{1/2} = -43.268366$
There is $Gm_o/c^3 = -43.268366$ There is $\hbar/m_o c^2 = -43.268366$
There is $\hbar l_o/Gm_o^2 = -43.268366$ There is $(m_o l_o^3/\hbar c)^{1/2} = -43.268366$
There is $m_o l_o/\hbar = -43.268366$ There is $G\hbar/l_o c^4 = -43.268366$
There is $G^2 m_o^2/l_o c^5 = -43.268366$ There is $(G\hbar/c^5)^{1/2} = -43.268366$

By the first proposition, the Planck particle does not possess the attribute time or frequency.

All Forces, ML/T^2, are identical; all extensions, L, are identical; all times, T, are identical; therefore all masses, M, are identical. If all masses are identical then by the first propostition the Planck particle does not possess mass. By similar arguments, the Planck particle does not possess density, power, or charge.

The Planck particle does not possess any of the attributes: Energy, Force, Size, Time, Mass, Density, Power, Charge. What attributes then does it have? If only one attribute, then by the second proposition, the Planck particle does not exist. If no attributes at all, then it "doubly" does not exist!.


Levels of existence
Value levels
Attribute or parameter levels
no parameter ⇒ no exists

See 41

PROJ0400.WPD APRIL 28, 2000

PROJECT UPDATE APRIL 2000

P PYTHAGOREAN COSMOGRAPHY
The existable/non-existable template

Z COGNITIVE STRATEGIES
Emancipation from Aristotle, Occam, and Carnap

D FORCE <--> FORM
The twin dragons of creation

D THE DIVERSIFICATION//HOMOGENIZATION DIALECTIC
Zarathustra demythologized

N THE VARIETIES OF NOTHINGNESS
Nagarjuna vindicated

E EPIONTOLOGY
The world you get is the world you ask for

T METAOLOGY
An axiology for the inner world

M BUNDLING AND DEPACKAGING
How to frame and deframe an issue

W A PILGRIMAGE INTO H-SPACE
The benedictions of forms

P ITERATION OF THE RANDOM
The determinism that is begat by chance

W ATHROISMATICS
The mathematics of ≠

Z FOUR
The quadfurcated world

COSMFRM1.WPD APRIL 28, 2000

COSMIC FRAME PART I

THE HUBBLE UNIVERSE FRAME The values in these tables are the allowed positions.

TABLE I [values are $\log_{10}$] [$\alpha^2 = -4.273670$]

	maximum	mean	minimum
MASS	$(\alpha\mu S)^{3/2}\, m_o = 56.062232$	$S^{3/2}\, m_o = 54.371621$	$(S/\alpha\mu)^{3/2}\, m_o = 52.681010$
RADIUS	$(\alpha\mu S)^{3/2}\, l_o = 27.932886$	$S^{3/2}\, l_o = 26.242275$	$(S/\alpha\mu)^{3/2}\, l_o = 24.551664$
TIME	$(\alpha\mu S)^{3/2}\, t_o = 17.456065$	$S^{3/2}\, t_o = 15.765454$	$(S/\alpha\mu)^{3/2}\, t_o = 14.074843$

M^* = max mass, $M\sim$ = mean mass, M_* = min mass

R^* = max radius, $R\sim$ = mean radius, R_* = min radius

TABLE II [$S^3\, m_o l_o = 80.613896$]

$M^*/R^* = m_o/l_o = c^2/G = 28.129346$	$M^*R^* = (\alpha\mu)^3\, S^3\, m_o l_o = (\alpha\mu)^3\, S^3\, \hbar/c =$
on the Schwarzschild bound	$= 83.995118$
$M^*/R\sim = (\alpha\mu)^{3/2}\, m_o/l_o = 29.819957$	$M^*R\sim = (\alpha\mu)^{3/2}\, S^3\, m_o l_o = 82.304507$
in the second quadrant	
$M^*/R_* = (\alpha\mu)^3\, m_o/l_o = 31.510568$	$M^*R_* = S^3\, m_o l_o = 80.613896$
in the second quadrant	
$M\sim/R^* = (\alpha\mu)^{-3/2}\, m_o/l_o = 26.438735$	$M\sim R^* = (\alpha\mu)^{3/2}\, S^3\, m_o l_o = 82.304507$
in the first quadrant	
$M\sim/R\sim = m_o/l_o = c^2/G = 28.129346$	$M\sim R\sim = S^3\, m_o l_o = 80.613896$
on the Schwarzschild bound	
$M\sim/R_* = (\alpha\mu)^{3/2}\, m_o/l_o = 29.819957$	$M\sim R_* = (\alpha\mu)^{-3/2}\, S^3\, m_o l_o = 78.923285$
in the second quadrant	
$M_*/R^* = (\alpha\mu)^{-3}\, m_o/l_o = 24.748124$	$M_*R^* = S^3\, m_o l_o = 80.613896$
in the first quadrant	
$M_*/R\sim = (\alpha\mu)^{-3/2}\, m_o/l_o = 26.438735$	$M_*R\sim = (\alpha\mu)^{-3/2}\, S^3\, m_o l_o = 78.923285$
in the first quadrant	
$M_*/R_* = m_o/l_o = c^2/G = 28.129346$	$M_*R_* = (\alpha\mu)^{-3}\, S^3\, m_o l_o = 77.232674$
on the Schwarzschild bound	

COGSTRAT.WPD MAY 5, 2000

NEW COGNITIVE STRATEGIES

We Shall Require a Substantially New Manner
Of Thinking If Mankind Is to Survive.
– Einstein

In 1967 a conference was held to explore new ways of thinking that go beyond such traditional approaches as axiomatics, deductive and inductive logic. This conference was summarized in a book "New Methods of Thought and Procedure" [F. Zwicky, A. G. Wilson, ed; Springer-Verlag NY]. In the Prologue, Zwicky notes that there were several previous attempts to find better ways of utilizing rational thought such as: Aristotle's Organon, Francis Bacon's Novum Organum, Descartes' Discours de la Methode. This conference was held to determine if the scientific and technological experience of the last three centuries had suggested any significantly new methodologies that could increase human cognitive powers.[1] The candidate methodologies contributed to the conference included: Operations Research, Systems Engineering, Dynamic Programing, Information Theory, Game Theory, and Morphological Research. [Why General Systems Theory was omitted, I believe, was either that no one was available to or able to summarize it.] Subsequently the computer has devoured parts of each of these methodologies and adapted them to its routines. But that does not obviate the need for humans to explore methodologies independently of whether they are useful to computers.

Of the methodologies of systematic thought discussed at the 1967 conference I feel that Zwicky's Morphological Research was the most innovative and profound. In one sense the other methodologies streamlined existing procedures, while the morphological method challenged them. At the heart of the morphological method was the concept of *pluralism of solutions*. The task was not to find a solution, it was to generate as many alternate solutions as possible, and to postpone evaluation until the generation phase had been completed. Zwicky outlined the method listing the following procedures:

> The measure of our wealth is in the number and variety of alternatives available to us.
> – Li Kiang

1) Systematic field coverage: Existing objects may be expected to form families whose members exhibit continuous sequences of characteristics. The task is to extrapolate and interpolate the sequences.

2) Flexibility of truth: Any communicable statement which of necessity must be formulated in finite terms cannot be absolute. The task is to suspend belief in any proposition no matter how well established.

3) Limits to the range of validity: Theories can only 'osculate' with reality over a small range of a parameter. The task is to quantify the limits.

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[1] It should be noted that 1967 was at the very end of the pre-computer era, marking about the last date before computer based algorithmic methodolgies became important.

NEW COGNITIVE STRATEGIES

4) The value of error and imperfection: Imperfection gives a distorted but useful alternative view. While it might be labeled 'wrong', it nonetheless affords a profitable input. The task is to escape the practice of equating dogma with perfection.

> Perception does not give a homomorphic representation of the universe, but a distorted isomorphic representation. –R.W. Gerard

5) The systemization of values: The construction of alternatives requires a set of values to facilitate their selection or rejection. The task is to find criteria for establishing such values, and meta-criteria for establishing the criteria, ...

> A theory is the more impressive the greater the simplicity of its premises, the more different are the kinds of things it relates, and the more extended its range of applicability.
> – Einstein

This sketch of Zwicky's morphological analysis presents the case that before we can construct a really new methodology we must challenge, disbelieve and set aside what we have so far found. Instead of building on the past we must liberate ourselves from the past. This does not mean that in the end we shall not come again into agreement with what the past has found, but it promises that if we do we shall see it with greater understanding.

Besides Zwicky and Einstein's proposals for values, Boorstin has proposed: 1) Accuracy, 2) Simplicity, 3) Comprehensiveness, 4) Explanation, 5) Prediction, 6) Economy, 7) Usefulness, 8) Stepping Stone. Or as some others have proposed: Fruitfulness for future models, Precision, Consistency, and Elegance. Now what is needed are criteria for selecting and ordering these and other values.

MASSRADS.WPD MAY 8, 2000

MASSES AND RADII

The values in this table are for baryons.

	minimum mass	mean	maximum mass
MASS	$(\alpha\mu S)^{-1/2} m_o$=-24.903676	$S^{-1/2}\, m_o$ = -24.340139	$(S/\alpha\mu)^{-1/2}\, m_o$=-23.776602
RADIUS	$(S/\alpha\mu)^{1/2}\, l_o$= –13.677142	$S^{1/2}\, l_o$ = -13.113605	$(\alpha\mu S)^{1/2} l_o$= -12.550068

The values in this table are for quasi dark matter

	maximum	mean	minimum
MASS	$(\alpha\mu S)^{1/2} m_o$= 15.579278	$S^{1/2}\, m_o$ = 15.015741	$(S/\alpha\mu)^{1/2}\, m_o$= 14.452204
RADIUS	$(\alpha\mu S)^{1/2} l_o$=-12.550068	$S^{1/2}\, l_o$ = -13.113605	$(S/\alpha\mu)^{1/2}\, l_o$=-13.677142

The values in this table are for neutron stars .

	maximum	mean	minimum
MASS	$\alpha\mu S\, m_o$ = 35.820755	$S\, m_o$ = 34.693681	$(S/\alpha\mu)\, m_o$= 33.566607
RADIUS	$\alpha\mu S\, l_o$ = 7.691409	$S\, l_o$ = 6.564335	$(S/\alpha\mu)\, l_o$ = 5.437261

M^* = max mass, M~ = mean mass, M_* = min mass
R^* = max radius, R~ = mean radius, R_* = min radius

The values in this table are for normal stars . [α^2 = - 4.273670]

	maximum	mean	minimum
MASS	$\alpha\mu S\, m_o$ = 35.820755	$S\, m_o$ = 34.693681	$(S/\alpha\mu)\, m_o$= 33.566607
RADIUS	$(\alpha\mu S)\, l_o/\alpha^2$ = 11.965079	$S\, l_o/\alpha^2$ = 10.838005	$(S/\alpha\mu)\, l_o/\alpha^2$ = 9.710331

The values in this table are for the Hubble universe.

	maximum	mean	minimum
MASS	$(\alpha\mu S)^{3/2}\, m_o$= 56.062232	$S^{3/2}\, m_o$ = 54.371621	$(S/\alpha\mu)^{3/2}\, m_o$= 52.681010
RADIUS	$(\alpha\mu S)^{3/2}\, l_o$ = 27.932886	$S^{3/2}\, l_o$ = 26.242275	$(S/\alpha\mu)^{3/2}\, l_o$ = 24.551664
TIME	$(\alpha\mu S)^{3/2}\, t_o$ = 17.456065	$S^{3/2}\, t_o$ = 15.765454	$(S/\alpha\mu)^{3/2}\, t_o$ = 14.074843

KRASNIK1.WPD MAY 23, 2000

THOUGHTS ON THE 66TH ANNIVERSARY OF KRASNIK

It has been said that no one epistemology will ever produce a complete ontology. This appears to be some sort of a generalization of Gödel's incompleteness theorem that no axiomatic system or system based on a fixed set of pre-assumptions can access all propositions that are valid within that system. (Much less those outside the system). This places a double limit on Science. First, that the scientific method will never be able to discover or exposit all facts that are within its presumed domain of inquiry. And second, that the domain of scientific inquiry in no way exhausts the ontological domains of existence in the universe. However, even the application of all conceivable epistemological approaches, much less just the epistemology of Science, would not reveal the totality of ontological existence.

One primary obstacle implicit in most of our epistemological approaches is our requirement for internal consistency. This is permissible, but to project this same requirement onto the *product* of an epistemology, that is onto ontology, is to bring us into an immediate violation of the incompleteness theorem. So long as we demand consistency in any of its forms, conformity, political correctness, monism, monotheism,... we truncate reality. We must allow not only for variety (which we have learned to do), and for diversity (which we will tolerate), but also for disparity (which we have yet to accept). These are levels of being that cannot be forced into any axiomatic, axiological, or legalistic system of choice. As paradoxical as this may sound, we even need a mathematics of or for inconsistency.

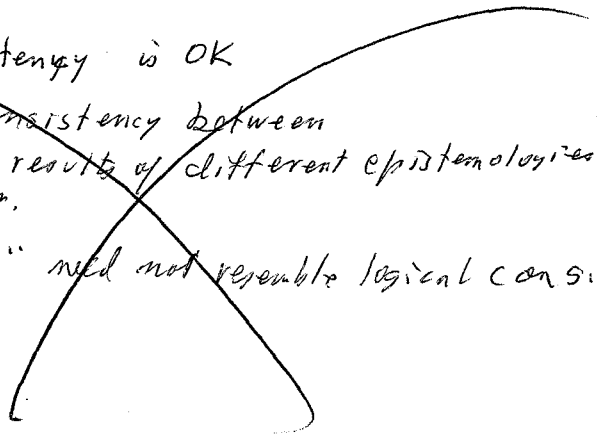
The call is not to abandon our systems because they are limited, but to recognize and admit their limitations and reject the pretense of their omnipotence. This holds for all human endeavors and institutions be they political, scientific, commercial, religious, whatever. All of this is a call for courage! The courage to question and re-examine all that is past. The courage to abandon the security blanket and live at risk. The problem is to maintain the protocols of order as we destructure and restructure our thinking, our knowledge, and even our wisdom. To continue meaningful living as we release ourselves from traditional meanings. If this can be done, in its very doing we shall discover the "meta-meaning" in past truths. Capital T Truth will always be again and again rediscovered.

No stone is to be rejected, no idea deemed to absurd, no hypothesis too imaginary, until new criteria that transcend consistency, and redefine a deeper meaning of "critical" be found. Then selection may proceed and the collection <~~>selection dialectic take its new course.

Internal Consistency is OK

But to require consistency between epistemolical results of different epistemologies is out of order.

"Meta-consistency" need not resemble logical consistency [if it exists]



SHARING4.WPD MAY 23, 2000

FOUR MODES OF SHARING

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

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

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

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

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

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

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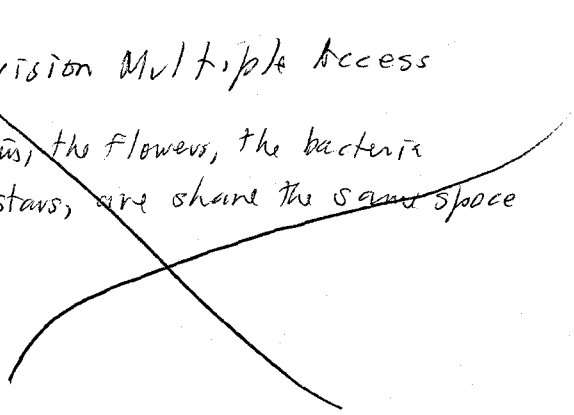
[1] For a technical description of each of these modes see Scrap 19xx #yy.

SDMA

Scale Division Multiple Access

The Mountains, the flowers, the bacteria
the stars, are share the same space



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

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

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

Standing back, we can see that humans share the world through FDMA. The universe

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

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

itself seems to operate at several frequencies. Here on earth the clouds come and go in a few hours, they are transient phenomena to humans, just as we humans are transient phenomena to the mountains. And thankfully the furniture in our homes does not move about with the same frequency that we do. All of these differences of frequency permit sharing.
Fourth, CDMA: Here the mode of sharing takes us beyond everyday experience and introduces us to non-localism. In separating our identity from possession, position, location, and rank, we are well on the way to becoming what we essentially are. Our essence can be simultaneously in many places and taking many paths. We are held together not by space and time, but by a label or code that identifies each part of who we are and enables the parts to be reconstructed into the whole when the destination is reached. Ego is gone, but self remains. If what can be presently accomplished with messages on networks could also be done with humans in societies, an unimaginable transformation would occur. Is CDMA a metaphor for how we really share the world?

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

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

MDMA = methylene dioxy methamphetamine
M D M A
This drug induces memory loss.

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

also see 1998 #43

STANUNIT.WPD JUNE 6, 2000

STANDARDIZATION OF UNITS

While the scientific world has long since discovered the value of standardization of units, it is surprising that it still tolerates a bog of diverse units among and within its various disciplines. As much as the cgs and SI systems were improvements over furlongs and rods, grains and drams, matins and complines, there still exist disparate units obtained with diverse apparati and various theoretical assumptions needing to be linked. While the history and evolution of measurements, including the methods and apparatus used in their determination, is important, we have reached a level when additional convergence of units is possible. Now that the values of the fundamental constants are known with improved accuracy, it would seem feasible that a system of units based on the Planck mass, length, and time could be adopted by all the physical sciences and for parts of biology and possibly even some aspect of the social sciences.

PART I. UNITS OF CHARGE:

The dimensionality of charge is $[ML^3/T^2]$

Four units of charge:

The Coulomb, C, = an ampere-second

The electrostatic unit, q, esu = equal charges separated by 1 cm, force = 1 dyne

The charge on electron = e, $\log_{10} e = -9.318469$ esu

$\log_{10} e^2 = -18.636938 = \hbar\alpha c = Gm_o^2\alpha$

The planck unit of charge = e_p, $\log_{10} e_p = -8.250052$ esu

$\log_{10} e_p^2 = -16.500103 = m_o l_o^3/t_o^2 = e^2/\alpha = \hbar c$

Conversion factors FROM ROW TO COLUMN

	COULOMB C	esu q	electron e	PLANCK P
C	1	2.998141E+9	6.241506E+18	5.331777E+17
q	3.333540E-10	1	2.081944E+9	1.778492E+8
e	1.602177E-19	4.803203E-10	1	11.706228
P	1.875547E-18	5.622740E-9	0.085425	1

Conversion factors Log_{10} values

	COULOMB C	esu q	electron e	PLANCK P
C	0	9.476852	18.795289	17.726872
q	-9.476852	0	9.318469	8.250052
e	-18.795289	-9.318469	0	1.068417
P	-17.726872	-8.250052	-1.068417	0

$\log_{10}(\alpha^{1/2}) = 1.068417$

Some of these numbers are based on Most $\frac{^{12}C}{12}$ ∴ different

where $m_p = -23.779751$

rather than -23.776602

α arises in the difference
between the Planck charge $\sqrt{\hbar c}$
and the electron charge $\sqrt{\hbar \alpha c}$

A FARADAY = 96,500 Coulombs = 1 mol of electrons

$\log_{10} F = 4.9845273$

with $m_p = -23.776602$

Coulomb = 18.792074 e where e = charge on electron

and 17.723657 for planck charge

LARGNUMB.WPD JUNE 11, 2000

KALPAS AS UNITS OF TIME

While we know that the ancients developed systems for expressing large numbers, we are ignorant of any practical applications for which they needed large numbers. Particularly, we recognize the creativity of Archimedes in his "Sand Reckoner" and of unknown Hindu mathematicians in their development of the system of yugas and kalpas. Today we have many uses for large numbers to express social, economic, and scientific quantities and have developed a convenient representation by expressing them as powers of ten. For example, one billion = 1,000,000,000 = 10^9. In our culture, astronomy has long been the cradle of large numbers, for distances, numbers of stars and other objects, and for their ages. With recent focus on the cosmological importance of the age of the universe, (derived from its rate of expansion), it is of interest to see what modern age numbers might look like when expressed in terms of ancient units like yugas and kalpas, which were used to represent great lengths of time.

THE HINDU TIME SYSTEM

Brahma, the creator of the universe, is supposed to have a lifetime of 100 Brahma Years, each of 360 Brahma Days. The length of one Brahma Day is called a kalpa and is 4.32×10^9 earth years. This would make Brahma's lifetime equal to about 156×10^{12} earth years. It is held that at the end of such a period the world disappears to be replaced by a new world with a new Brahma. But there are subdivisions to the kalpa or Day of Brahma. One kalpa is equal to 1000 mahayugas, each of which would be of length 4.32×10^6 earth years or of 12,000 so-called Divine Years. This works out to one Divine Year = 360 earth years, [$360 \times 12{,}000 = 4.32 \times 10^6$] Each mahayuga consists of four yugas, each successive yuga is of decreasing length, containing increasing strife and conflict. The first yuga is the Krta Yuga whose length is 4000 Divine Years, [1,440,000 earth years]; the second is the Treta Yuga of 3000 Divine Years, [1,080,000 years]; the third is the Dvapara Yuga of 2000 Divine Years, [720,000 years]; and the last is the Kali Yuga of 1000 Divine Years, [360,000 years]. These add up not to 12,000 Divine Years, but to only 10,000 Divine years. The discrepancy is explained in terms of "yuga dawns and twilights".

THE 20TH CENTURY COSMOLOGICAL SYSTEM

For most of the 20th century, cosmologists have been using a model based on a "critical density"; critical in the sense that if exceeded, the universe will oscillate between a series of big bangs and big crunches, and if deficient, will expand forever. The jury is still out, but at the beginning of the 21st century, the smart money is on insufficient matter and eternal expansion. In this model we are concerned with three quantities:

1) An observable: the Hubble parameter, H_o measured in kilometers/second/megaparsec.
2) An interval of time called the Hubble Age, A, the time from the present back to an origin assuming constant rate of expansion at the present rate, measured in billions of years.
3) The so-called age of the universe, T, the time from the present back to the big bang, measured in billions of years.

These quantities are related as follows:

(H_o in km/sec/mpc) x (A in billions of years) = 978; and $T = 2/3\ A$

Page 2

KALPAS AS UNITS OF TIME

The table shows the relations between the Hubble parameter, H_o; the Hubble time or age, A ; the time since the big bang, the so-called age of the universe, T; with $\log_{10}$ values.

H_o km/sec/mpc	A Gyr	T Gyr	log T years	log T seconds
1) 550	1.8	1.2	9.079	16.578
2) 71.99	13.58	9.056	9.956955	17.456067
3) 75.46	12.96	8.64	9.936514	17.435626
4) 150.93	6.48	4.32	9.635484	17.134596
5) 4.1924×10^{-3}	233,280	155,520	14.191786	21.690898

1) Hubble's first value [Realm of the Nebulae p168, 1936]
2) Current value based on Cepheids [Friedman et al, 1999] This value = $(\alpha\mu S)^{3/2}\, t_o$
3) Value corresponding to 2 kalpas
4) Value corresponding to 1 kalpa
5) Value corresponding to "Lifetime of Brahma" 10^5 billion years
[log number of seconds in year = 7.499112]

Notes: The age of the earth is estimated to be about 4.5 Gyr which is close to one kalpa, which means the earth was born toward the end of the first Day. The sun is estimated to be about 4.7 Gyr, though a second generation star, it was still born in the first Day. The age of the universe 2) is "slightly" over two kalpas. Meaning we have been in the third Day of Brahma for 0.42/4.32 = 0.097 Day, that is for about 420 million years. This means the third Day of Brahma began 420 million years ago in the Silurian period, the age of first appearance of vertebrates, the fishes, and the first seedless land plants and ferns. Since the beginning of the third Day, there have been 97 mahayugas (out of 1000 per Day). The 98th mahayuga of the third day began 960,000 years ago in the Pleistocene epoch. This was the time of homo erectus well before homo neanderthalensis and homo sapiens. But since 960,000 years is less than 1,440,000 years of a Krta Yuga, we are still in a Krta Yuga, with 680,000 years to go. That should be good news for all of us.

If we define the Planck Age, P_A, as +43.268366 seconds, and take the total number of Brahmas, past, present, and future, B_N, as having the same numerical value as the lifetime of Brahma, B_L, in seconds = 21.690898, then $B_N \times B_L = +43.381796, \sim P_A$. [$\log_{10}$ values]

[The difference must lie in the yuga dawns and twilights]

While the use of kalpas has no advantage over our powers of ten notation, it does help to put relative lengths of time into perspective by reducing billions and millions of years to days and hours. Since the big bang we are now only two hours and 20 minutes into the third Day of Brahma.

HSPACE1.WPD JUNE 14, 2000

See 00/#50
#87
#91
01/#33
#43

A JOURNEY INTO H SPACE

We live in a world consisting of several superimposed spaces. Some of these spaces are shared by all, some are shared only by those who have found the paths that access them, and some spaces are individual, personal and private. But all spaces, public and private, are interconnected, and through our physical, mental, and spiritual experiences we live simultaneously in each of them. The most widely shared space is the physical space of position and movement, which all material beings and things share. We shall designate this physical space, P–SPACE. A second important widely shared space is the space of shapes and forms. We shall call this space of patterns, H–SPACE. If P–SPACE has been most intently explored by physicists, then H–SPACE has been most intently explored by artists. But these spaces are not independent. They interact and interplay on many levels. Forces from P–SPACE create forms in H–SPACE, and the forms of H–SPACE in turn direct and order the forces of P–SPACE. [1] However, though not independent, each space has its own attributes and rules, and each plays a distinct role in the whole.

Our active lives are focused predominately in P–SPACE, and this has conditioned us in such a way that we project the attributes and laws of P–SPACE onto the other spaces. This has made it difficult to recognize the different attributes and properties of other spaces. It is difficult, for example, to understand that such concepts as dimension, frequency, power, and force must be redefined in H–SPACE. And the overriding problem is to find how these concepts alter their function within each space. In H–SPACE, the world of form, shape, and pattern, geometry is only the surface portion of reality. Underneath, forms and patterns possess dynamics of divers powers. These powers have been studied by the masters of *feng shui,*. They are hinted at in western architecture's "form follows function", and are considered by some biologists even to be one basis of life. While our P–SPACE experience trains us to accept that form creates force in such examples as airfoils creating lift in the wings of airplanes, we hesitate to accept that crystals and pyramids are forms that also could generate some kind of force. In order to enter the world of forms, to venture into H–SPACE, we must suspend our disbeliefs, put aside the rules of P–SPACE, and be open to a world that may prove to operate differently.

To begin, some artists tell us that we must learn anew how to *experience* form. This goes beyond receiving and processing the stimuli of sight, sound, and touch. A set of different perceptions is required. Imagination must be employed. [This doesn't sound totally strange. Einstein, the master shaman of P–SPACE, often said that imagination is more important than knowledge.] We first learn that an encounter with form not only results in ascertaining a fact, it also results in evoking a feeling. And feelings are forces, perhaps not as defined by Newton, but nonetheless in common with Newton's forces, they effect change.

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[1] J.A.Wheeler notes in connection with the general theory of relativity that, "Matter tells space how to curve, curvature tells matter how to move."

MELTPOT.WPD JUNE 19, 2000; AUGUST 19, 2000

THE MELTINGS IN THE MELTING POT

Whatever the causes of the rudeness, vulgarity, and aggression in today's society, the results manifest an excess of wealth and power in the hands of novices, adolescents, and ignoramuses. The undisciplined and irresponsible actions range from drivers having no understanding of the dynamics of auto traffic and the underlying laws of physics, to media giants whose only criteria for choosing what TV shows and movies to produce is the bottom line. And not to forget politicians who use weapons of mass destruction as cards in a global game of political one upmanship. All speak to an immature society possessing far more power than intelligence to use it. It is useful here to remind ourselves of one of Beard's truths of history: "Whom the gods would destroy, they first make mad with power".

Within the United States one possible contributing cause to our regression to immaturity is the melting pot. The price of cultural co-existence is superficiality. This trade-off is seen as true from the level of chat at a cocktail party to the level of difficulties encountered at international negotiations. Globally we share only the most basic emotions and values: security, control, esteem, greed, sexuality. Our visions and ideals may be so different from others as to not be mutually communicable nor understandable. Achievement of understanding requires suspension of our cultural prejudices and transcending our cultural memes. It requires we explore the identity bases of others. But to do this, we must first discover our own identity--and here we face a paradox. The understanding of others begins with understanding of self, and the understanding of self only comes from interactions with what is different from self. A melting pot becomes both a challenge to understand others and an opportunity to understand ourselves. And from these explorations of self and others through an increasing interaction with what is different, an emergence occurs. Something that is neither self nor other is born out of what was both self and other. Maybe this is what a true melting pot is about. And the shadows implicit in today's behavior presage an era of tolerance and respect for tomorrow.

We do not fear the different.
We fear the unfamiliar
∴ We can rid ourselves of fear
by becoming familiar with what is different

ITERDIAL.WPD JUNE 22, 2000; JUNE 26, 2000

ON DIALECTICS

The original meaning of the term *dialectics* was an iterative exchange of questions and answers, the method used by Socrates to develop deeper insights and understanding. We are not quite sure whether Socrates already had in mind an answer he wanted to reach or he was using the method as an exploratory device to enhance his own enlightenment. Plato proposed a similar iterative process for the acquisition of more comprehensive hypotheses for explaining increasingly inclusive sets of phenomena. The basic ideas involved in dialectics were exchanges and iteration.

Several centuries after the Greeks, the idea of iterated exchanges was again taken up by G. W. F. Hegel (1770-1831). He used the term dialectics for the placing of 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 included the operation of iteration: the synthesis resulting from the preceding dialectic would become the thesis for the next dialectic. And if the process were iterated a sufficient number of times, Hegel felt that the final synthesis would be an *absolute idea*. While Hegel did not specify the source of the subsequent antitheses, he was careful to discriminate between contraries and contradictions. The dialectic process would only work with contrary 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 general categories, such as the struggle of man against nature. He called the man vs. nature interaction *dialectical materialism*. Marx became fascinated with interpreting dialectical synthesis as resulting from a struggle between the components. With the help of Friedrich Engels, he 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 any 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 largely associated with Marx and Communism and has been challenged and discredited. But if we return to the methodology described by Socrates, Plato, and Hegel, dialectics need to be reconsidered.

The key to dialectics is in Hegel's term *contraries*. Warring nations, prize fighters, economic classes may be opponents, but they become contraries only when their interactions and exchanges result in a synthesis. Confusing opponents with contraries not only mislead Marx, it has been a trap for many. In addition to opponents another pair not to be confused with contraries is *opposites*, such as male/female, good/evil, yin/yang. That two opposites engage one another does not necessarily effect a synthesis nor constitute a 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 opposites entering an exchange to

emergence of polarization

effect an emergence. Indeed, if the antithesis is the complete *opposite* of the thesis, then the resulting synthesis will turn out to be a null, that is,

$$T + (-T) = 0.$$

Of course zero or nothingness is an absolute idea, but when does the synthesis of opposites result in anything beyond a cipher?

Another discrimination that must be taken into account is that between repetition and iteration. The ball going back and forth from court to court is repetitive exchange. But for there to be iteration there must result a change in the overall situation as a consequence of the exchange. If one player faults, there is a change in the score. The court to court exchange resumes until again there is a change in the score. In this example, repetition is the court to court exchange, iteration is the step wise change in the score. Confusion between repetition and iteration also results from the fact that different dialectical processes operate at a different frequencies. [Even a single dialectic process may operate at several frequencies.] At low frequencies we can follow Socrates question and answer exchanges, and perceive the emerging syntheses. But at high frequencies, in Newton's third law, action and reaction appear to be acting simultaneously. Repetition and iteration merge and disappear. Recapitulating: 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 employing the synthesis in a new engagement.

INVERSE DIALECTICS

The iterated dialectical process is an homogenizing process, leading to some ultimate single absolute idea, 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 a monistic world view (a theory of everything) has been so great as to preclude 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, like iterated Hegelian dialectics, goes to single value, some diverging series take on multiple values. Divergence 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 been ignoring something of basic importance. [1]

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[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]

see 30

PROJ0627.WPD JUNE 27, 2000

PROJECTS

June 27, 2000

P ▸ **PYTHAGOREAN COSMOGRAPHY**
What can exist and what cannot exist

T ▸ **AXIOLOGY**
The source of values, the great dialectic

D ▸ **DIALECTICS**
Dynamic and static, Inverse dialectics, history

Z ▸ **NOVO COGNITIO**
E
W *Alternate logics, morphology, quadrics, apophasis*

N ▸ **NAGARJUNA**
The levels of nothingness, 0, 1, nihilism

M ▸ **MANIPULATION**
Social coherence, education, thought control

A ▸ **AMERICA**
Independence, melting pots, freedom, justice

X ▸ **AXIAL AGES**
Extinctions, radiants, evolution

Q ▸ **QUOTES**
Aphorisms, adages, apothegms, Li Kiang

L ▸ **THE LAST PISCEAN**
Personal, anecdotes, teachers, travels, testament

LP000728.WPD JULY 28, 2000

SOME REFLECTIONS ON MY 82ND BIRTHDAY

Perhaps there is some wisdom that reduces the acuity of our sensory perceptors as we age. Could this be that we may begin to utilize and sharpen our non-sensory perceptors? It seems as though aging is a process similar to that which takes place in the womb, preparing us for a transition from one domain to another: with birth–into a physical world, with death–into a spiritual world. As we withdraw from the activities and attachments of this world, we begin to dissolve our identification with what we have been in this period of life. Our ego diminishes, but our awareness of who we truly are begins to clarify. The illusions of individuality slowly etherealize. We know that we are part of a different whole than any with which we have identified during life. The meaning which we sought in the physical world was not found there. But our place and role in the plenary cosmos begins to enter our awareness along with the responsibilities that have always been ours. We must. not seek to ***find***, but seek to ***become*** the God we once petitioned and worshiped. During life such a view would be considered hubristic and blasphemous, but when faced with but a glimpse of the tasks and the responsibilities, there is only humility and awesome commitment

While we remain in the domain of physical space and time, it is not possible to conceptualize or articulate in intelligible terms the greater reality within which the physical universe and all its contents lies embedded. We have only briefly glimpsed its scaleless magnificence, but glimpsed it with an assurance that overrules all the illusions and contrived consensuses that have imprisoned us here. T.S. Eliot has said that "Old men should explore". It is absurd for old men to explore the physical universe, that task is for the young. And, for the reasons given above, while here, we cannot explore that which lies beyond. So what is it that old men should explore? We should explore the alternatives that are possible for us here and now. Only those old men [and old crones] who have begun the escape from ego; the escape from their attachment to possession, relationship, and recognition; from their definition of success, pleasure, and happiness; and from their pursuit of wealth, fame, and power, ...can conceive of *real* alternatives to the ruts we have grown to accept as reality.

Old age then is a very special time, not just a time for personal preparation for what is to come, but of equal or greater importance, an opportunity to contribute those alternative possibilities that can best be perceived by those who are in part removed from the place where others must stand.

Without speculations concerning "Hereafter"
Live daily as being Chenrezig

MAYAN.WPD JULY 29, 2000

STILL EVEN MORE ABOUT THE WEEK

see also 1991 #88; 1994 #7, #13, #15; 2000 #22

It was shown in Scrap 2000 #22 that the relation between the earth's rotation period (the 24 hour solar day) and the earth's Schuster period, $T=2\pi\sqrt{(R^3/GM)}$, could be taken as the basis for the seven day week.[1]

		Value in seconds[2]	$\log_{10}$ value in seconds
T	The earth's Schuster Period	5060.24	3.704171
D	The mean solar day	86400.00	4.936514
H	The Hydrogen Period	7239.07	3.859683

First note the ratio:

$$\frac{\log T}{\log D} = 0.750361 \cong 3/4$$

Indicating that to within about 4 parts in 10^4 the ratio of the logarithms of the Schuster period to the day is 3 to 4. In other words, $(5060.24)^{1/3} = 17.168$ and $(86400)^{1/4} = 17.145$, $\Delta = 0.023$ or $(5060.24)^4 = 655{,}668{,}714 \times 10^6$ and $(86400)^3 = 644{,}972{,}544 \times 10^6$; whose ratio is 1.0166 or $(5060{,}24)^{4/3} = 86875$ and $(86400)^{3/4} = 5039.48$; Hence $T^4 \cong D^3$.

For seven days, assuming 120 Schuster periods, 7 x 86400 = 604800 seconds and 120 x 5060.24 = 607229 seconds, an error, Δ = 2429 seconds (48 m 40s) in seven days. Possibly a basis for a seven day week.
However,
For thirteen days, assuming 222 Schuster periods, 13 x 86400 = 1123200 seconds and 222 x 5060.24 = 1123373.28 seconds, an error, Δ = 173 seconds (2 m 53s) in 13 days. A very good case for a thirteen day week.

And where has there been a thirteen day week? The ancient Maya used a basic thirteen day period and from their vigesimal number system of base 20 derived a sacred "year" of 260 days. [TZOLKIN] We know that the Maya were good astronomers deriving a calendric year more accurate than our present Gregorian year. So maybe they were also good geophysicists recognizing the relation between the earth's Schuster period and the earth's solar rotation period.

360 Day = TUN
365 day = haab

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[1]The Schuster period is determined by the mass M and radius R of the earth and is the time period in which a satellite would circle a spherical earth at its surface were there no atmosphere or other obstructions.

[2]These values are derived from a mean earth radius 6.371000 x 10^8 cm and Earth mass of 5.9737 x 10^{27} g [Cox, Astrophysical Quantities 1999] ; and G = 6.674215 x 10^{-8} $cm^3/g\ s^2$ [Physics Today July 2000 p 21]

NIZNAV.WPD JULY 29, 2000

THE NIZAM'S NAVY

Many years ago (1959-1960) I accepted a mission to serve as a consultant to the Government of India to assist in the establishment of a new astronomical observatory in Andra Pradesh in the deccan. Our center of operations was Hyderabad and our initial task was to find the best site in the vicinity for the observatory. Hyderabad was the capital of an Islamic principality which was a Muslim island in the sea of Hindu India. It had been ruled for many generations by Muslim princes bearing the title of Nizam.

Some of the Indian astronomers with whom I was working were friends of the Nizam and had received an invitation to visit his palace. I was included in the invitation and considered myself most lucky to have a rare opportunity to visit this elegant dwelling. ~~palace~~. Indeed, it turned out to be a building right out of the Arabian Nights filled with colorful tapestries, marble screens, thick carpets, and ornate lamps. But one room seemed out of place in all of this magnificence. It was bare except for a solitary chair in the middle. But on the four walls were hung ~~two or three dozen~~ a dozen or so paintings whose subject matter seemed entirely unrelated to the rest of the palace: Paintings of turn of the century pre-dreadnaught warships. No one present had any idea what the paintings were about, but had been told that the father of the present Nizam used to sit for hours in that chair and meditate.

Being an old naval person, I was most interested in inspecting the paintings. They were of a sea battle between vintage ironclad battleships. Some flew the blue cross of St. Andrew indicating their belonging to the Czar's navy, others flew the red rising sun of the Mikado's navy. These were paintings that the Nizam had commissioned that recounted the May 27,1905 battle of Tsushima in the sea of Japan. In this historic battle during the Russo-Japanese war, the Russian Baltic fleet had steamed half way around the world only to be destroyed in the Straits of Tsushima by Admiral Togo's upstart navy. Why did this sea battle intrigue the Nizam whose domain did not possess an inch of sea coast? No one present had ever heard of Tsushima, so there was a puzzle here. Later I tried ~~by myself~~ myself to put the jigsaw pieces together.

The Nizam, though respecting the British, along with most of India wanted them out. But there was a mind set throughout the East that the Western colonial nations were too powerful to be opposed successfully by military force. (The unsuccessful Sepoy mutiny of 1857 had affirmed this mind set in India.) Then came Tsushima. Japan, a nation that had been living at a feudal level for centuries in 40 brief years of modernization could take on and decisively defeat a major colonial power. Here was a revelation of hope, light at the end of colonialism's tunnel. And, indeed, it was Tsushima in 1905 that initiated the subsequent unraveling of colonialism .

The Nizam who sat in the chair and contemplated the implications of Tsushima[1] did not live to see his dream fulfilled, but he had accurately perceived the importance of the event. Of course the end of colonialism was hastened by two world wars which were fought in large part over possession of colonial empires that would shortly be dissolved by other forces. Colony by colony disappeared from the empires of Britain, France, Holland, and Portugal. [Spain had lost her empire in America in the 19th century, Germany lost hers in the first world war.] The final dramatic events marking the end included helicopters removing American officials from roofs in besieged Saigon [Now Ho Chi Minh City], and a simple yacht sailing out of Hong Kong harbor carrying the last British governor and the heir to throne of the empire on which the sun once never set.

Today colonialism is surreptitiously re-emerging under the guise of global trade, (NAFTA, etc.) This neo-colonialism differs from the old in that its base is ~~the corporation~~ corporate instead of ~~the nations~~ national.

[1]Curiously Japan misunderstood the avalanche it had released at Tsushima. It felt that its victory was a matter of its replacing another colonial power, and not until WWII did Japan perceive that colonialism itself was over. But the United States has still to digest Vietnam. It has also misunderstood the message. In deluding itself that it was fighting communism it missed the fact that it was really waging an anachronistic fight to preserve colonialism.

TWOBOOKS.WPD JULY 30, 2000

A FUNDAMENTAL FACT

Years ago when I was a freshman at college, I made an important discovery. I found that when I could not understand something I read in a textbook, having at hand a second textbook covering the same topic would most of the time clarify the subject. The difficulty was not in the subject matter, but in extracting the meaning from the authors' particular sentence structure and word choice. This lead me to believe that important matters should be said in as many ways as possible, for every particular way of representing an idea truncates and distorts the essence of the idea. Even when said in many ways the richness of some concepts can be but partially conveyed.

The story is told that when Umar conquered Egypt in the 7th century, he was asked what should be done with the great library at Alexandria. His reply was if books disagreed with the Koran, then they were heretical and must be burned. If books agreed with the Koran, then they were superfluous, not needed, and also should be burned. So, burn them all. And it was done. Burning and banning books disagreed with is still being done today by Umars in all countries. But excluding the books that might be agreed with is also being done by modern Umars, (commonly known as fundamentalists). For them one book is sufficient. All that is needed is contained in the one *Book* and to look elsewhere is unnecessary. Their fallacy lies in ignoring the fact that every single representation of an idea truncates and limits it.

Do these people believe we should listen only to the music of one composer, read the poetry of but one author, look at the paintings of but one artist? The richness of any composition is enhanced by a context of varied compositions. Only in difference is essence revealed. We cannot understand ourselves until we have many relationships. We cannot understand our own culture until we live in a different culture. We cannot understand our own religion until we study several religions. [And now NASA is pushing for the exploration of Mars in order to better understand the earth. They have it right.]

So I say to the fundamentalists: Even if it is all in one *Book*, you will never begin to understand what it is saying until you put it in juxtaposition with other *Books*.

LMAKUNGA.WPD JULY 30, 2000

LETTER
Hi Ed,

I cannot give you a direct answer to your question. My Bible software does not include the Hebrew, so I am stuck (as you apparently are) with interpretations of the English words, "make man in our **image**, after our **likeness**, in the **image** of God he created him".

We should discriminate homomorphism from isomorphism, a clone from a map, a replica of the whole from a copy of only some facet. The text in Gen 1:26 goes on to say, Let them have dominion over fish, fowl, cattle, and all the earth. It would seem that the writer was limiting the divine attributes that were to be given man to those of physical power and dominion. We were to have only a sub-set of the deity's attributes. This is born out later in the Eden story Gen 3:22, "Behold the man is become as one of us, to know good and evil, and now lest he put forth his hand and take also of the tree of life, and eat, and live forever", let us send them out of the garden. This implies that man was to be restrained from reaching the level of God. If "in the image", then only a faint one.

My own conclusion from the Genesis story is that what man was given was limited domain and conscious choice. While these are isomorphic to certain of God's attributes, man is no homomorphism of God. However, post Judaic theology based on the differences between man and other organisms also allows imagination and creativity as well as dominion and choice as divine attributes possessed by man.

Christian theology may be said to begin with--the Kingdom of God, the divine, the Holy Spirit, Buddha Mind, (whatever label), is already within you. And when Jesus says, "You too can do all that I have done and more too", he put the Genesis story into the category of an explanation of only part of who we are. Jesus' words, like the Buddha's, places no [Old Testament] boundaries on the divinity within each of us. The task is to access what we already have.

Albert

Date: 07/30/2000 9:40:47 AM Pacific Daylight Time
From: grs@ap.net (Edward Kunga Van Tassel)
To: alw1871@aol.com

Hi Albert,

Sorry I have not gotten back to you on the Bible research software. Things are stalled at this end by the need to put a new roof on the kitchen. I do have a question that you might be able to answer with the resources that you have available. In Gen.1:26-27 God resolves to create man in his own image. One must assume that the old patriarchs knew exactly what they were saying and were very precise in their expression. What word did they choose for image? What did it mean to them, in so far as we are able to know? Was it image like the reflection in a mirror or like a photo or like an archetypal imago? A photo, for example, is not the thing itself but an imago is. This statement could be the Christian version of the foundation of the Tantra, the process of entering into awareness of the image of the divine. Any insights into this one?

Thanks,
Ed

Made in the image of God
= co-creators

Is there a single attribute or facility that humans possess that is not possessed by at least one other species? We do seem to have an aggregate of effective attributes.

- is it imagination?

▲▲▲

MEANING0.WPD AUGUST 13, 2000

THE MEANING OF MEANING

In the structuralism view, the ur-meaning of a word is to be found in its **context**, not in its definition. In fact, a definition is but a description of the term's immediate context. But in our customary way of thinking we tend to focus on the immediate context because of the difficulty of visualizing or acquiring access to more inclusive contexts. Meaning thus comes down to determining the specific location of a word in that network of interlinked words called language. The larger this network, the richer the meaning of words. Which implies that the larger a person's vocabulary, the larger the network to which they have access, the more effectively they can both think and communicate.

What may be said about the meaning of a word being determined by its location in a network also applies to the concept of meaning in other usages. For example, the structuralism view as applied to such philosophical questions as 'What is the meaning of life?' or 'What is the role of humanity in the scheme of things?', paraphrases to 'What is our location in the network of that which physically exists? [What is our location in P–Space?] Where the answer must include the *where*, the *when*, the *how*, and the *why* in reference to quarks, atoms, ... stars, galaxies and the multiple patterns through which we and they are interrelated.

A disturbing ontological feature regarding 'meaning networks', such as language or the physical world, is that when larger and more inclusive contexts are explored ultimately the network turns out to be a "loop". The network is free floating, which is to say that its existence appears to be completely independent and self-sustaining. But this is an illusion. The existence of any network depends on there being an isomorphism between it and some other network. The language network, for example, maps a human experiential network, i.e. maps [and hopefully is isomorphic to] a set of experiences taking place in a physical universe. The physical network or universe exists, probably not because we are mapping it with our language network, [although this has been argued] but because there is another network, sometimes called a 'Platonic network', which is isomorphic to the physical network. It is interesting to note that we just may have succeeded in symbolically constructing this network. We call it mathematics.

There are many sub-networks, networks within networks, Russian matroshka dolls. Humans have created trade networks, market networks, and now comes the Web or Internet which, though virtual, is indeed a network in accord with the present usage of the term. On the Internet our physical being becomes a web page, and we are beginning to see, as is predictable, that meaning in this new network also derives from our location in it, on how much we have access to, how many linkages we have, on how many hits are made each day on our web page.

From the above two points seem of primary significance:

1) Meaning in any system or network is a matter of location within that network. This involves primarily the number of links a particular node possesses to the rest of the network. But also involves the amount of energy and information moving through those links.

2) The matter of **access.** Going beyond the number of links and the traffic they carry is the importance of the percent of the total number of nodes in the network that are connected to a given node. Meaning for a node grows with the extent of access the node has to the remainder of the network. However, it is not so much the number of links that a node might possess, rather it is the variety of the nodes accessed by those links that is significant for meaning: Variety not multiplicity.

LI.WPD

AUGUST 20, 2000

2le 99 #31
00 #58
00 #48

THE MEANINGS OF LI

1) LI is the *rational* principle of existence — Contrasted with
CHI the *material* principle of existence. — A vital force

Here we see certain similarities between LI and Plato's noetic level.
LI is to concept as CHI is to percept.
LI is the essence of a thing [HSING]
LI is a unifying force, "The reason of one thing is the reason of all things".
Thus there exists only one reason.
And "There exists only one mind"—Lu Hsiang-Shan (c1193)

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2) Kung Fu Tzu [Confucius] taught
LI means propriety, courtesy, the order of things,
The infrastructure of morals, ethics, and etiquette.
And by extension, ritual, ceremony, and reverence.
LI is the dynamic for self-mastery.

MUSIC	RITUAL
unifies	differentiates
calm	formal
principle of harmony	principle of distinction
harmony	order
all are influenced	all have a place

---

3) The I Ching tells that LI
Is the will of Heaven [T'ien]
interpreted and made to prevail on earth.
LI stands for the radiance that is in nature.

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4) LI is the principle of gain.
Profit
Benefit for all

"The principle of gain is obverse to the principle of righteousness" —Mencius

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References: Dictionary of Philosophy p168
I Ching p4, p126

FOUR COGNITIVE OPERATIONS

1) The first cognitive operation is the perception of difference. Indeed, without difference there would be no perception of existence. Difference is the sine qua non of existence.
"Uniform sameness is the perceptual equivalence of non-existence". [Eddington]

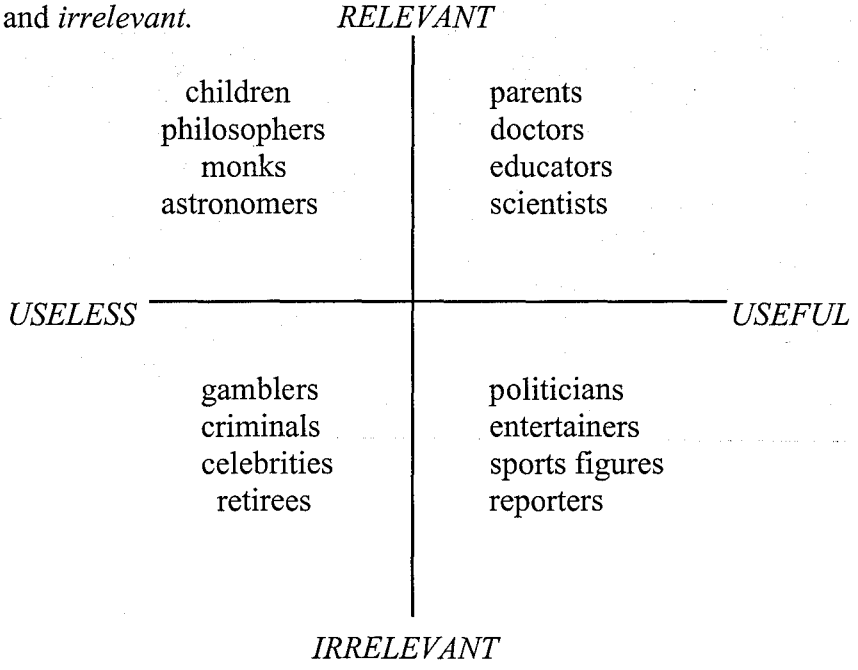
2) The second cognitive operation is the noting of similarities among the different things.

3) The third cognitive operation, (that of Structuralism), is to note the resemblances in the differences themselves.
"It is not the resemblances, but the differences which resemble each other"
—Claude Levi-Strauss

4) The fourth cognitive operation is to note the differences in the resemblances themselves..
"It is not the differences, but how the resemblances differ from each other."

— —

The fourth operation inspects those concepts and ideas that the second operation has tended to render equivalent. Linguistically, this requires the inspection of synonyms, such as freedom and liberty, true and valid, isomorphic and homeomorphic. Frequently an inspection of synonyms leads us to see that they refer to isomorphic states or levels whose merging because of resemblances obliterates important ontological properties. As an example, consider similar terms: *useless* and *irrelevant.*



Politicians strive to move from the fourth to the first quadrant. [what is called "legacy"] A few, Lincoln, the Roosevelts, achieve it. As we age we all become useless, but it is important that the aged seek ways to stay or become relevant.

SPACES01.WPD AUGUST 23, 2000

See 2000 #38
#87
#91
2001 #33
#42

SPACES

What is meant by *SPACES*?

First, The employment of *SPACES* is to provide us with an alternate way of organizing the experience of ourselves and the world. We customarily think of there being but one space, the space-time in which the earth, planets, galaxies, and the universe all exist. We consider this space-time to be the stage on which the drama of the big bang, evolution, life, history, and our own lives is being acted out. But in the *SPACES* world view it is felt useful to organize the dramas of existence into different plays being enacted on different stages, but all following a unifying script. There will be several kinds of SPACES, each providing an infrastructure for the ordering of some particular type of experience by which we have come to know ourselves and the world. So, instead of our living in only one kind of space, the space-time of the physicists, we must think of ourselves as simultaneously inhabiting several spaces.

How many *SPACES* are there?

The answer depends on how many distinct kinds of experience we have. For one, we experience the inertial, gravitational, and various forces of the physical world, the space-time of mass, momentum, force, position, and movement. This physical space for present purposes will be designated, P–SPACE. A second space we inhabit is the space of shapes and forms. Not only the forms of geometry, circles, triangles, etc., but the myriads of forms that the mineral, vegetable, and animal kingdoms assume. This space of forms will be called, H–SPACE. And here we can see one advantage to looking at the total world in terms of its being partitioned into separate SPACES. The fundamental experiences of P–SPACE are those of position and motion. In P–SPACE it is motion that effects change, and since the concept of time derives from change, in P–SPACE time is "motion-time". In H–Space, on the other hand, change comes not from motion but from morphotropism, [eg a caterpillar becoming butterfly]. And we would expect the concept of "morpho-time" to be different from that of motion-time. While it is primarily physicists and astronomers who have explored P–SPACE, it is primarily mineralogists and botanists who have explored H–SPACE. In addition H–SPACE is of importance because there are reasons for particular forms, why some forms occur but not others. We as humans with two arms, five fingers, two eyes, etc. are as much part of this sub-world of forms, as we are of the P–SPACE sub-world of position and motion. Another important difference between P–SPACE and H–SPACE is that in position space we are not confined to one place but can move about, change our location, while in form space we are restricted to but one form, except for change in size and as noted, the special cases of morphotropism. [eg tadpoles into frogs]

See 00#61

MADNESS

When sent as a gift of the gods, the greatest of blessings come to us through madness. Heaven-sent madness is superior to man-made sanity. –Plato

We make every effort to break out of the prison of our earthly incarnation, trying to see the great reality that lies outside. But when we peer through a crack in the door that we have succeeded in partially opening, we pull back. The view is overwhelming, frightening. To venture outside would be certain madness. Indeed, philosophers who have ventured out became mad (Nietzsche), mathematicians who ventured too far became mad (the Unabomber), and drug users regularly became mad. Realizing this we protect ourselves by emasculating the epistemologies with which we pretend to seek knowledge of the outside greater reality. We insert restraints in them to assure that we shall not be inadvertently exposed to greater Truth. Otherwise we would go mad. Indeed, organized religions do not seek Truth, rather they are designed to protect us from Truth. And science protects itself and us from Truth that it cannot handle by restricting its models to a one level description of the cosmos.

i.e. material

If we were to superimpose the findings of all of our diverse epistemologies, as some have suggested as the only process by which to ascertain Truth, the result would be a level of complexity that would be impossible for us to perceive as order, or even perceive as randomness. Consequently we take refuge in sub-systems, surrogates, that we pretend are the cosmos. We substitute and research cultural representations pretending they are nature itself. We even employ minor madnesses such as wars to divert us from the ultimate madness of confronting Truth. This protects us from the immensity of the Reality in which we are embedded. It has been said that we cannot confront God face to face until we have faces. At present for us to look at God would not only blind us, it would drive us completely mad.

Of course, all of this is from our limited anthropocentric viewpoint. Could it be that it is not we who seek to protect ourselves from Truth, but that it is Truth that protects itself from those who are unworthy by making them mad.

Metametheus said to his lieutenants (cohorts): "To a world where the indigenous lack the wisdom to use knowledge, limit the degree of your manifestation. The only secret is that we exist"

* CANTOR ?
Gödel ?

? MACH
? BOLTZMAN

The Truth will set you free
We seek the freedom of Truth
but the price is Madness

Every epistemology, including reason [logic, deduction] contains implicit inhibitors to protect its users from the "Great Madness"

We reincarnate to escape the "Great Madness"

The GM has been labeled "HELL"
The GM has been labeled "GOD"

We feel safer with several regressions [games] between us and the GM

When our surrogates themselves begin to resemble Madness - then we eschew them
e.g. WWI

WHITECAT.WPD AUGUST 24, 2000

Cf 00 #59

THE CAT AND THE WITCH

Our neighbor's cats like to spend time in our yard. Perhaps because there are cat attractions like birds and gophers. This morning I happened to glance out the window and saw the neighbor's white cat relaxing and sunning itself. As I watched, the cat suddenly became alert and began looking about. It seemed that as soon as I began spying on her out of the closed window she knew something was staring at her. She looked in my direction and stared back. Then after a few moments, feeling no danger, returned to her sunning.

I was reminded of a similar incident that took place decades ago during WWII when I was in naval radar training at a school in Brunswick, Maine. Three or four of us were in a room on the second floor of a dormitory overlooking part of the campus. We casually looked out the window and saw a bent over old woman walking along a path. "That is Mrs. Coffin", said one of the men who was local to the area. "They say she is a witch". As we watched, she suddenly stopped and starred about in all directions. Then she left the path and walked over to a large tree and slowly walked behind it disappearing from our view. When she suddenly re-emerged she was starring directly at our window. We felt some embarrassment and quickly left the window. "You must be right, a witch should be able to do that sort of thing, get a line of sight on us by finding that behind the tree she could not feel our stare.

I remember that our high school physics teacher told us that in ancient times the theory of vision was based on the idea that something emanated from our eyes and "illuminated" what we were viewing allowing us to see it. He laughed and said now we know better, "Nothing goes out of our eyes, it is the photons reflected from an object that enter into our eyes that allow us to see." Today, I would not laugh at an ancient theory. Al Hasan[1] the Arab philosopher who supported that theory, was really describing something near to what we call radar. Seeing by sending out a wave and noting its reflection. Bats and several sea creatures do this with sound waves. With sonar, we use sound to 'see', and with radar we use e.m. waves to 'see'. But this does not tell us what medium cats and witches employ to inform them they are being seen.

Bio-evolution seems to encourage the development of anything that works: sonar for bats and dolphins, acute olfactory sensing for canines, etc. And cultural evolution seems to encourage the development of any theory that explains: space curvature in physics, DNA in genetics, etc. But these are only special cases of what works or explains. There may exist many alternatives some as good, some even better. It seems most likely that cats and other creatures have developed sensory approaches that we have left totally undeveloped. Each organism selects from the totality of possibilities particular solutions that suit their needs. Then their needs in turn are shaped by the selected solutions. If follows that we must respect all creatures for their particular skills, just as we respect the practitioners of different sports for their varying skills. Look on the world as do native Americans. Honor the wolf, the eagle, the buffalo, the coyote. [And include the cat and the witch] In their specializations they make visible to us a spectrum of alternatives that should shame our human chauvinism.

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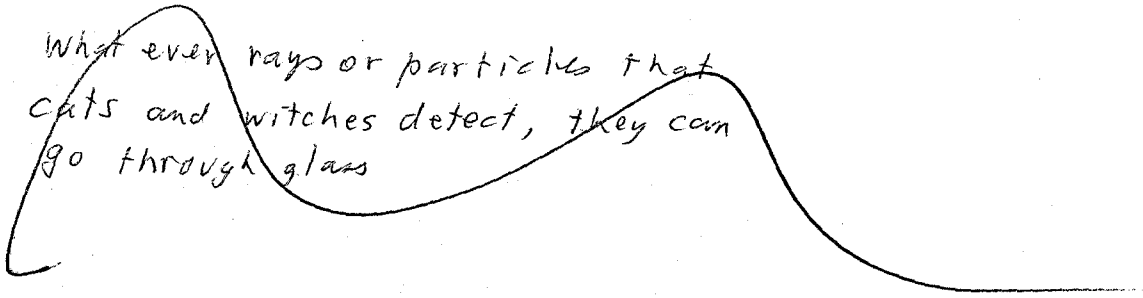
[1]Al Hasan, (965-1039), Kitab al-Manazir, A Treatise on Optics


Whatever rays or particles that
cats and witches detect, they can
go through glass

THE CRISIS IN MEANING

by
Albert G. Wilson
(Presented to Institute on Man and Science, July 4, 1968)

We have been concerned during the past few days here in Rensselaerville with views of some of the critical problems that engage us in the 60's, problems that may overwhelm us in the 70's. We have been reminded of some of the critical imbalances we have created. Imbalances not only in the distribution of sustenance, but in the distribution of hope. We have been reminded that the imbalances man has effected within his social order are now beginning to spill out and create new imbalances in the ecology and even threaten such contexts as the atmospheric balance that keeps this planet habitable.

A picture has been painted for us of a society moving toward robbing increasing numbers of its members of meaningful roles in that society. Fewer people are needed in the economic sector. Old people no longer have a place in the family. Young people find little satisfaction in devoting themselves to learning the techniques of competing for spots in a social order that to many has no apparent meaning. They are finding even less meaning in the role of cannon fodder. Minorities when given ad hoc jobs to make more unneeded consumer goods do not receive a sense of relevance for their toil. Even worse -- the tacit diploma given with each welfare payment reminds the recipient that he has been graduated to the sector of society that no longer possesses social usefulness. However, he knows he will perhaps continue to be supported -- at least until a "pragmatic philosophy" can be derived that will allow society to find a realistic <u>final solution</u> for him. Even the slave had more dignity -- exploited though he was -- at least he was needed by society. In looking for a common ingredient in most of these trends, we see for many individuals the lack of a role, the lack of a needful relationship, the lack of meaning.

But the fact that society no longer perceives a need for a large sub-portion of itself to assure its maintenance and survival is only one phase of the growing crisis in meaning that marks these times. Economic meaning is only the most recent source of meaning to dry up. Other sources such as some religious sources, that have long supplied meaning to many individuals have also dried up.

Before we turn to the broader aspects of the crisis in meaning, let us inquire into what are the sources of meaning for an individual and for mankind as a whole. In fact, What do we mean by meaning? Without going into philosophical depths and details, we may simply say that meaning for an individual, for a society, for mankind as a whole derives from a sense of identity, a sense place, and a sense of belonging. For there to be meaning implies there is a role to be played, a task to be done. For there to be meaning there must exist a relationship between the individual and the other, such as the relationship of need between members of a family. For there to be meaning there must exist a linkage with the environment, or a function in the ecology. In general, meaning implies a connection with context, and a relation to the past and the future.

I am well aware that in making this great leap from the psychological, subjective "sense of meaning" to the structural, objective "relation to context" we have short circuited many steps that require careful discussion. But our purpose here is primarily to illustrate that for humans, individually or in toto, meaning derives from the existence of a set of contextual relationships. It follows that those forces or situations that remove or obscure contextual relationships or that obliterate function in the environment, tend to erode sense of meaning.

We have remarked the destructive effect of many of our economic and social trends on the sense of meaning for the individual, but there is another critical though less visible meaning problem with which all men in the 20th Century are involved. This is the meaning of mankind itself man's cosmic meaning. The role of man in the cosmic order. The relation of man and his works to the cosmos. Men can live without this latter type of meaning for longer periods than they can live without individual meaning but not indefinitely. In fact, one of the principal questions of youth today is concerned with this larger contextual meaning for human society. We may develop elaborate theories of social evolution and historical processes based on our own aspirations or on our interpretations of whatever historical, paleontological, or geophysical records are available to us. But whatever systems we develop, whatever plans we make, or dreams we dream, they must ultimately be tested for consistency with the contextual cosmic processes. The ancients were well aware of the necessity to relate their existence and their affairs to the cosmic context, perhaps because the cosmic context frequently intervened in their affairs in a cataclysmic manner. As an essential ingredient of their religions they introduced what we may call a cosmography, a description of the cosmic environment and man's place in it. In our own time it has become important to distinguish between a religious cosmography and the secular or scientific cosmology of today. These two descriptions of cosmic context are primarily distinguished by the <u>questions</u> to which they address themselves and only secondarily by the <u>answers</u> they supply.

Traditional Religious Cosmography is concerned with questions such as:

What is the Universe?
How did it originate?
What is its destiny?
What is man?
What is man's relationship to the Universe?

We see these are basically "meaning" questions, why" questions.

Scientific cosmology on the other hand is concerned with questions such as:

What material bodies exist in the Universe?
What physical processes govern these bodies?
How did these bodies originate?
What are their evolutionary paths and ultimate destiny?
What is their relationship to one another and to the whole?
These are basically "what" and "how" questions.

Though there is considerable overlap, the questions of Traditional Cosmography are the essential, timeless questions bearing on human meaning. They are found in all primitive cultures, those without what we call scientific experience, and in advancedcultures, those with scientific experience. They do not arise from sense experience or rational thought processes. The questions of traditional cosmography seem to arise from the integration of total experience, directly from the psyche of man in his search for meaning.

In contradistinction to the universal questions of traditional cosmography we find the questions of scientific cosmology to be specific and much more restrictive. The questions of scientific cosmology reflect the emphases that the current age places on the material aspects of the world. The specific questions derive from a long sequence of observations and theories, and are a measure of our level of understanding of the material contents and processes of the universe. But because of overlaps in the questions of traditional cosmography and scientific or physical cosmology, such as origin and destiny questions, the two areas have been confused and have come to be thought of as a single discipline. This has resulted in a peculiar, and in a sense tragic, development in Western thought.

We have pointed out a cosmography is an integral part of every religion. The nature of cosmic context supplied by traditional cosmography through myth, through constructs relating heaven and earth, man and gods; through creation stories, have been a most important vehicle for giving a sustaining sense of meaning to man and to mankind. The cosmography explained for man his peculiar relation to the universe, his special role in the universe, and his uniqueness as a creature. So important is its cCosmography to a religion it may be argued that a negation of the cosmographical tenets of a religion results in the loss of the efficacy and usefulness of the religion.

The contradictions in the medieval cosmography that placed God, omniscient and omnipotent, on a throne in Heaven directly over Jerusalem began a crises in meaning that has been troubling Western man ever since. Western religion has retreated to being essentially an ethical system centered in a secular institution, and has abdicated to Science the construction of a cosmography or cosmology. Today's crises in meaning is in part traceable to the divorcement of cosmography from religion and the view that scientific cosmology will in time find the answers that will restore meaning to man.

Where do we go from here? If humanity's cosmic meaning derives from its role and relationships to the cosmos, what does scientific cosmology tell us about such relationships? It has given us a notion of our size relative to planets, stars, and galaxies. But is relative size the all determining factor in relevance? A more important matter is how common is life and intelligence in the universe. Are we unique? Rare? or common place? Are we alone? We are forced to conclude that the present state of scientific knowledge concerning human-cosmic relationships does not provide us with the inputs needed for discerning our cosmic meaning.

We must accept that the path out of our present meaning morass requires us to pursue the unifying principles linking the physical and non-physical worlds that humans bridge. Man cannot exist in part, divided against himself. He must acknowledge and accept his total essence. Nor can the clock be turned back. The ancient cosmographical relations between man and the cosmos that were once taken on faith can never be reposited for 20th century humans short of their scientific verification. Humanity must now seek verifiable relationships and a cosmically defined role. At this particular time, with partial and incomplete knowledge, we may feel cut off from the cosmos and doubtful of possessing any role in the cosmos.

All we can do is continue the search we have begun. It may be a long search; it will certainly be a lonely search. In the end may be the discovery that humanity has no cosmic role and no cosmic meaning. But in the process of the search we will have perfected the tools of search. We will have developed skill as searchers. And paradoxically in searching for a role, we will have developed one. Our cosmic role will be that we shall have become that part of the cosmos through which the cosmos reflects on itself. In searching and in the role of the searcher mankind will have found meaning. Certainly this role is dignified and challenging enough for humanity until some other role might be found. It is dignified and challenging enough for all time if no other role is ever found.

TOTALITY.WPD

SEPTEMBER 3, 2000 See 00 #58
See also 1999 #31

DEDOGMAFYING PHILOSOPHY, RELIGION, AND SCIENCE

The death of dogma is the birth of reality—Kant

Hsün Tzu[1] objected that each philosopher would emphasize some particular facet of a problem and ignore the whole. He felt that any such approach could never arrive at truth. But what Hsün Tzu felt was a meaningless practice has always been the norm, not only in his time but up to the present day. And not only by philosophers, but also of by religious authorities and politicians. Perhaps the main reason for this is that consideration of the whole is overwhelming, and we perforce settle on what we are able to handle. But sometimes there are other reasons than the complexity of the problem. Politicians are especially adept at persuading the public to focus on some particular sub-issue. They do this at times because of a personal investment in the issue, but frequently to keep the people's attention diverted from an agenda they wish to keep hidden. The practice of demanding consideration of the whole would do much to render such manipulations obsolete.

In the 20th Century we have seen many examples of the "facetism" that Hsün Tzu deplored. In the field of science, for example, there were the Logical Positivists, the Vienna Circle, those who possessed and used the only correct methodology, and who dismissed as nonsense all results but those coming from their particular brand of reasoning. (Very reminiscent of the history of religions.) And the persecution by some leading professional astronomers of Velikovsky who derived hypotheses from a study of comparative mythology. That some of his predictions were subsequently observationally validated did not matter, his methodology was out of bounds.

But the 20th Century also brought us disciples of Hsün Tzu (although they probably never heard of him), who challenge methodological dogmas as well as propositional dogmas. Their message is go for **alternatives**, find additional alternatives, find all possible alternatives. No longer one method, one solution, one conclusion, ~~to be~~ owned and supported dogmatically by self anointed authorities. Use the entire spectrum of approaches, develop as many feasible theories and models as possible, and hunt for more. If many turn out to be wrong, they have nonetheless contributed to keeping search going and dialogue open. The disciples of Hsün Tzu are not pursuing "A theory of everything". Rather they are pursuing: "Every thing modeled by all possible theories".

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[1]Hsün Tzu, Chinese philosopher, fl c 250 BCE, Critic of all earlier philosophers, but great admirer of Kung Fu Tzu. (Confucius)

A humorous example of the Hsün Tzu approach is given by the answers one student gave in reply to the exam question: Given a barometer, how would you find the height of a tall building. [The student in this story has frequently been identified as Niels Bohr, the Nobel Laureate in physics. But Bohr is velcro for humorous attributions.]

1) Tie a long string to the barometer, lower it from the top of the building. The height will be the length of the string plus the length of the barometer.

2) Take the barometer to the roof, drop it over the edge, measure the time it takes to reach the ground. The height of the building will be given by $H = \frac{1}{2} gt^2$.

3) If the sun is shining, measure the height of the barometer, set it on end, measure the length of its shadow. Measure the length of the building's shadow. Then

$$\frac{\text{Height of the building}}{\text{Height of barometer}} = \frac{\text{Length of building's shadow}}{\text{Length of barometer shadow}}$$

4) Suspend the barometer from a piece of short string of length l to make it a pendulum. Compare the periods at the base of the building and on the roof. $P = 2\pi\sqrt{(l/g)}$. The difference in periods will give the difference in the value of g from which the height may be derived.

5) Knowing the length of the barometer, if the building has a stairway, it would be possible to measure the height of the building by counting the number of vertical barometer heights in going up the stairs.

6) Of course, you could measure the air pressure in millibars at the base and on the roof and compute the height from the pressure difference.

7) The best way to get an accurate height would be to go to the building's architect and say, "I have a nice barometer I will give you if you will tell me the height of your building."

Hsün Tzu would demand that the student keep looking for further alternatives.

STARS.WPD SEPTEMBER 5, 2000

See Also 1996 #50

THE NIGHT SKY

When we can no longer see the stars, what within us will die?

Today I received a flyer in the mail from the International Dark-Sky Association. This is a non-profit organization dedicated to reducing the amount of nighttime scattered artificial light, which they point out is not only wasteful but threatening to steal from human experience the majesty and mystery of the starry heavens. At the core of this group are astronomers, both professional and amateur, who have correctly analyzed the waste and cost of lighting the night sky. Thirty percent of nighttime artificial light is scattered upward where it provides no utilitarian function for either activity or security. They estimate the annual cost of this wasted light to be in excess of $1.5 billion. But what is the real cost?

THE NIGHT FACE OF NORTH AMERICA
(International Dark Sky Association)

For millennia our ancestors have watched the steadfastness and the movements of the night sky. This continuing spectacle of permanence and change has played an immense role in the intellectual and spiritual development of humanity. The starry sky has been our window onto that which is beyond ourselves, it has been our link to the "Other". At this time we are becoming aware of how many of our activities are eroding and threatening our home, the Earth. But in our narrow obsessions we are also closing the window to the prime source of our being and to the dynamic of our becoming. The receiving into our being of the light of the stars has for ages been a sacrament uniting us with all of which we are a part. Starlight is the stem cell of humanity's spiritual essence. If the window closes, what within us will die?

One of the earliest memories of my childhood was an evening walk with my parents. As I recall we had left the city and were in the country walking along a railroad track. My father took my arm and pointed out to me the stars up in the dark sky. For some reason I became very excited, as though I had just been told I was going to receive a present, a new puppy or even a pony. I just had to look and look and look at the stars. Then my mother taught me the little verse, "Twinkle, twinkle, little star, ..." And I kept saying it over and over all the way home.

Today I sometimes wonder if, with the stars obscured and our eyes constantly trained on ourselves, we inevitably limit our identities to "me and mine". The stars teach us humility, but they also give us a sense of being an important part of an unfathomable profundity. When we look up at the stars we cannot help but feel a oneness with them, we recognize that we are part of them and they are part of us. Our "me" focused identities dissolve. And as we join hands with those we once thought of as "foreigners", and start the human venture into space, we find that our oneness with the stars has brought us a oneness with ourselves.

SIGN0919.WPD SEPTEMBER 19, 2000

SIGNIFICATION UPDATE

From time to time, especially when I reach stone walls in my thinking, I have to back off and attempt to put into perspective the pieces I am trying to assemble into some form of "order". Of course, "put into perspective" is itself a step in ordering. But perspective is not quite the right word. Better than perspective, what I am doing is using a wide angle lens together with a **significance filter** to attempt to include all the salient pieces of the puzzle within some frame. How the pieces fit together, fall in place, will hopefully come later.

I sometimes think that the difficulty resides in the fact that the pieces fit together in many ways. Unlike a jigsaw puzzle that comes together into one picture, this is a puzzle that can produce as many pictures as we can creatively imagine so long as they satisfy some built in subjective criterion we have of what is and what is not a picture. And there is also the question of what is **significant.** This is also a subjective input, playing a major role in determining what pictures will ultimately be possible. And finally, the matter of the frame. What role does the frame play in the ultimate possible set of pictures?

We conclude that at least three subjective elements play a role in the generation of all of our theories, models, and world views. And the role of each is a delimiting role:

First, the subjective notion of what constitutes a **picture**, a model, or a theory.

Second, the subjective notion of what experiences, facts, inputs, are **significant** and to be included, or insignificant and can be ignored.

Third, the subjective selection of the **frame**. While this is in part inclusion/exclusion, as is signification, it is also a matter of the limits of human perception and our limited information processing capacity.

Here it becomes important to consider what we mean by **perceive and perception.** Usually perception refers to what is directly accessible per our physical senses. But in a more general sense, not only physical extensions to our senses, (microscopes, telescopes, ...), but inner psychological, intuitive, meditative access to phenomena must be included. [The latter have links to the outer world as well as links to inner worlds.] Next, comes the trick question: Should our symbolic models, mathematical theories, also be considered as perceptive extensions allowing us to "see" pieces that would not otherwise be accessible, or should they be considered as part of the process of assembling a picture from existing pieces, not as identifying hitherto unperceived pieces?

The history of human knowledge tells us that many pictures or models of "reality" can be and have been constructed. But pervading all is the notion that there is only one correct picture. This notion has been implemented with many disputes and acted out with the shedding of much blood. But, if many pictures are possible, what does the notion of "the right picture" mean? There seem to be two possible meanings: First, the picture that uses the most pieces and has the largest frame is the right picture. Second, any set of pieces that "converges" to an acceptable picture is a correct picture. And "acceptable" goes back to the first criterion re what do we mean by a picture. But to live with a **set** of acceptable pictures seems beyond human capability.

VIRTUAL1.WPD OCTOBER 3, 2000

ILLUSORY vs. VIRTUAL

For many centuries Buddhists have claimed that what we consider to be **reality** is but an illusion. We are deceived by our sensory perceptions, and it is an error to equate a set of perceptions with reality. Twentieth century technology has given us some metaphors that allow us to understand what the Buddhists are saying. A century ago photography was seen as giving us a direct and accurate replication of the world. We enlarged our basic notion that "seeing is believing" from direct vision to includeng photographs. Then we became fascinated with the power of the movies to create illusory realities. But there still was no difficulty in differentiating the synthetic realities within the movie theater from the *real* reality outside. Then came television, and with television the screen reality and the real reality began to be blurred. Part of this blurring was because the locations of the two realities were less distinct and readily going back and forth between the two created a blend. The two were becoming one. And for young children the distinction was elusive.

Next the technology allowed the modification of real events before their display on the TV screen. Sports fans were the first to note this, their experience of the game in the stadium and before the TV was quite different. No longer was that seen on the screen the same as that revealed by direct perception. The camera's focus had replaced the liberty of the eye and ear to chose what it would. The intent of the individual on what to experience had been usurped by the intent of the operator of the camera on what you would be allowed to experience. The media now not only had the power to create a virtual reality, but the viewers retained very little discrimination between virtual and real. Technology marched on. The focus of the camera was supplemented with splicing and taping. Time as well as space was "virtualized". And from the laboratory, complete five sense virtual realities are yet to come. .

No longer can a photograph be accepted as evidence in court. The ability to doctor data has allowed the virtual, the deceptive, and dysinformational to jeopardize our reliance on perceptions to guide our understanding of the world. But the Buddhists say that is how it has always been. Perceptions are the wrong guide to understanding the world. We, of course, are led to ask, "While we can understand why the media and those who control it wish to deceive us to advance their agendas, who or what has set up the illusory *real* world to deceive us? And what is their agenda?" If that is being paranoid, then paranoia is not mental illness, it is our key to meaning and survival.

58
cf also
99 #31
00 #48
00 #54

A LI KIANG PARADOX

李江

The sage Li Kiang lived in the third century B.C.E. near Guilin in southern China. He is best known for proposing that it is better to consider all philosophies as being coins in the treasury of wisdom than to dispute which philosophy or philosopher might be correct. Each philosophy, even when in error, has contributions to make. To propose any single philosophy or view to supercede others is to impede learning and wisdom. Li Kiang felt that error had fewer disadvantages than dogma. While error was correctable, dogma was not. And in the long run tolerance of many flawed views was superior to dogmatic support of a single view, however errorless that view may be perceived. Without alternatives understanding could not grow.

Li Kiang's emphasis on alternatives set him in opposition to those who sought unity whether in philosophy or politics. Any unity that was achieved by discarding the pieces that did not fit, was to Li Kiang less useful than an all inclusive aggregate of pieces that could not fit. He felt that wholeness was to be reached through a multiplicity of alternatives, not through some exclusive singleness. How or whether the alternatives fit together was less important to him than having available an abundance of different perspectives. He is quoted as having said, "Our wealth is measured by the number and variety of options available to us."

Li Kiang was probably a contemporary of Hsün tzu (fl 298-238 B.C.E.), but whether they met is inconclusive. Hsün tzu lived in Chou in the north while Li Kiang lived in the south. What is of interest is that Hsün tzu's denunciation of all philosophers[1] as being obsessed with one viewpoint or aspect, paradoxically included denouncing Li Kiang for being obsessed with alternatives. "Li Kiang is obsessed with alternatives and does not understand the importance of selection. Who thinks only of alternatives renders the Way [Tao] wayless." Perhaps this curious paradox relegated Li Kiang to obscurity.

The paradox centers on whether Heaven [T'ien] rules or Nature [Chi] rules. If it is T'ien, then there is only Tao, The Way. But if the world unfolds unpredetermined, open, and with humans participating in its destiny, then there are multiple ways. But Hsün tzu was right in criticizing Li Kiang for having nothing to say about selection. "Have you no criteria for preferences among the multiple ways?" But maybe Li Kiang thought selection was not necessary, we should pursue all the options. After all Brahma is interested in there being a manifestation of all the possible variations on 'his' theme.

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[1]Hsün Tzu made an exception with Confucius. He felt that only Confucius of all philosophers was free of obsession.

Li Kiang could have said that Hsün Tzu was obsessed with obsession,

Was Li Kiang the "Sage of Guilin"?

BIRDS.WPD OCTOBER 8, 2000

Cf 00 #52

ABOUT DUCKS AND QUACKERY

A few weeks ago, I believe it was September 20, Rupert Sheldrake was in town and we went to hear him review his recent book on Dogs. He related many curious anecdotes regarding the "telepathic" powers of dogs and cats. According to his stories, animals can not only pick up on human thoughts at a distance [eg master's or mistress' intent to return home at an unusual time] but can perceive human intentions [eg we will be going to the vet]. Many of these cases were done under strict controls and could therefore be considered scientific results, some even being repeatable.

Yesterday [October 7] I was in Rohnert Park and driving past a large artificial pond noticed numerous water birds–ducks, geese, even a couple of swans–out on the lawn. They were scattered, but in groups, resting, some sleeping. A great photo-0p! Being about 1:30 pm I guessed they were taking their afternoon siesta. I got my camera and approached carefully. They were unconcerned and indifferent to my wandering among them shooting pictures. I was grateful to all the humans whom they had previously encountered for engendering in them such an attitude of trust. My picture taking didn't disturb them, except here and there one or two would wake up look me over and go back to sleep.

On my way back to the car after taking about a dozen pictures, I felt that I should thank them for being so cooperative. So I stopped a short distance away, turned toward them, stood silently and sent them a mental message, a silent blessing of love and oneness. Almost immediately a great many of them got to their feet craned their necks up and began clucking and quacking. A great chatter seemingly in response to my silent message. After a short time they fell silent but still stood erect as though waiting for me to reply to their response. I left, but later looking back saw that they had settled back to their siestas.

My physical presence did not disturb nor arouse them, but my mental message did. Is there some medium by which living organisms can communicate but is unsuspected by physicists? It is not sonic communication nor is it making use of some part of the electro-magnetic spectrum. Is it possible that there may be some entirely different "spectrum" that emerges only at the level of complexity of life? If so, some animals have developed it far more than have humans. For those who drive on the freeway the coordinated movements of flocks of birds and schools of fish is nothing but awesome. .

Legend has it that at least one human, St Francis of Assisi, mastered this mode of communication. So, with humility perhaps humans can learn from our animal brothers and sisters something about ourselves we have long ignored.[1]

By the way, What is the origin of the term "Quackery"?

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[1]I checked, October 4th, not October 7th, is St. Francis' feast day

SYMBOLS.WPD OCTOBER 11, 2000

GLOSSARY OF SYMBOLS

PART I MONADIC:

A INCREASES	A↑
A DECREASES	A↓
A OSCILLATES	A↕

PART II DYADIC:

A SPLITS FROM B	A∘B
A IS DISTINCT FROM B	A|B
PUT A and B in JUXTAPOSITION	A ₩ B
LINK A to B	A–B
A IS A SPECIAL CASE OF B	A _|< B
A INFERS or IMPLIES B	A ==> B
A LEADS TO or BECOMES B	A —> B
DUPLEX or MUTUAL INFLUENCE BETWEEN A and B	A <—> B
FULL DUPLEX or SIMULTANEOUS INFLUENCE	A <==> B
A OPPOSES B	A/B
AN A versus B DIALECTIC	A//B
A and B ARE DUALS	A ◂▸ B
A and B ARE SYMMETRIC	A‖B
A SUPPORTS B	A\B
A MERGES WITH B	A\\B

Really A monadic

All monadics refer to some ground.

Of course, the past, memory, can function as ground

MADNESS2.WPD OCTOBER 11, 2000

Sep 00 #57
00 #47

THE PATH TO MADNESS

Every attempt I make to bring order and organization to all of the ideas-notes, scraps, essays-only results in their proliferation. Paradoxically, even when filtering, when making selections, the result is proliferation. In my quest for order, organization, unity, convergence, oneness, more disorder results. The amount of entropy created overwhelms any possible structure being created. The contents of my cup defies ordering. Any attempt causes the cup to overflow. At some point, to remain sane, the spigot must be turned off. Ordering requires an infra-structure so that each item will have a place. But ordering is impossible so long as the material accumulated continues to invalidate and render obsolete all the infra-structures.

Must we ultimately choose between closure with order and openness with chaos or is there some middle way? Is incompleteness the price of order [and consistency]? Is disorder [and inconsistency] the price of completeness? It seems that Gödel proved mathematically that such was the case. I can now substantiate his results empirically.

A middle way? We seem to be comfortable only within the castle keep of our representations-our words, images, music, and equations. And we seem doomed to try to represent the universe within the walls of this keep. A few courageous ones-mystics and poets-from time to time venture forth, outside the keep, but then only into the bailey. To venture beyond the outer walls of the bailey in thought or even in imagination is to go mad. The universe protects itself from the unready.

But perhaps in this contest between entropy and ordering, there is a clue to morphogenesis. First we must assure ourselves that there is an important difference between disordering and homogenizing. The act of disordering may play some role in morphogenesis and emergence, so long as the disordering does not turn variety into multiplicity. Certainly adequate variety is essential to emergence, so proliferation leading to an increase in variety, even as it leads to an increase in disorder, should abet morphogenesis. Thus an ecology, which is an organization containing disorder, is a possible source of emergence and morphogenesis. The record shows that radiants of emergence follow on the extinction of an ecology. Here again the increase in disorder seems to play an important role. Paradoxically, randomness may be the seed of emergence.

To claim that the path to higher order is through disorder certainly qualifies as madness.

extending disorder on one level [horizontally]
causes order to move vertically
thereby effecting emergence

On one level information can be destroyed
as it is by the 2° Law
But, like energy, if all levels are included
information can neither be created nor destroyed
If reduced on one level, as by the 2° law
it takes refuge on a different level - effecting
in some cases emergence.

energy operated horizontally
information operates vertically [meta-orthogonal]

Also Bennett
on Hazard

KINGS.WPD OCTOBER 19, 2000

CROWNED AND UNCROWNED HEADS OF STATE

Our last crowned head of state was George III. If we had chosen to designate our presidents as the British designate their kings and queens, we would have:

George I	Washington
John I	Adams
~~8~~ Thomas I	Jefferson
4 James I	Madison
James II	Monroe
John II	Quincy Adams (son of John I)
Andrew I	Jackson
Martin	van Buren
9 William I	Harrison
John III	Tyler
James III	Polk
Zachary	Taylor
Millard	Fillmore
Franklin I	Pierce
James IV	Buchanan
16 Abraham	Lincoln
Andrew II	Johnson
Ulysses	Grant
Rutherford	Hayes
James V	Garfield
Chester	Arthur
Grover (1)	Cleveland
Benjamin	Harrison (grandson of William I)
Grover (2)	Cleveland
25 William II	McKinley
Theodore	Roosevelt
William III	Taft
Woodrow (or Thomas II)	Wilson
Warren	Harding
Calvin	Coolidge
Herbert	Hoover
Franklin II	Roosevelt
Harry	Truman
Dwight	Eisenhower
John IV	Kennedy
36 Lyndon	Johnson
Richard i	Nixon
Gerald	Ford
James VI	Carter
Ronald	Reagan
George II	Bush
William IV	Clinton
George III	Bush (son of George II)

So we are now back where we started.

Jefferson could be Thomas I
and WILSON Thomas II

CLOUDS.WPD OCTOBER 20, 2000

THE FENG SHUI OF CLOUDS

風水

The interface between a human being and the world consists of two principal channels: The channel of perception–the physical senses, sight, sound, smell, taste, touch; and the channel of feeling which delivers to us fear, anger, angst, power, security, peace, humility, love, joy, awe, etc. [Both channels deal with the static and dynamic, the slow and the fast.] In the case of perception the specific sense channels are identified, while the messages may be quite varied. In the case of feelings the specific messages are identified, while the channels are unidentified and may be quite varied. It might be said that perception reveals the visible aspects of the world and feeling reveals the invisible aspects of the world. Perception discloses the forms, feeling discloses the spaces created by those forms. We **see** the forms, we **feel** the spaces they create. Feng Shui relates the two, the feelings to the perceptions, the "empty" spaces to the visible forms. And Feng Shui has catalogued an extensive set of equations between form and feeling. Where to place a wall, a bush, a stone, a pond, a street, etc. to give us secure space, peaceful space, dominating space, euphoric space, etc.

Where I live, in a broad valley rimmed with hills with a single high mountain, feeling is not only tuned to the constant terrain, but varies widely with what is ephemerally present in the sky. In the creation of the "empty" space which governs our feeling, the forms and densities of the clouds overrule the features of the earth. But most powerful of all are the varied effects that the interplay of clouds and mountain produce. The resulting feelings make it easy to understand how the ancients could associate mountains and their cloud garments with the abode of gods. Feelings are the result of forces and forces are unseen, only felt. And what are gods? They are invisible. They are anthropomorphized forces. [Even the physicist with his four physical forces must agree that they are not seen, only felt.] Feng Shui tells us of the many forces, or gods, that can exist in each emptiness.

See also 1999 # 41

ALTERNATIVES

THE FIRST ALTERNATIVE:

The first alternative is to pursue alternatives rather than pursue what has traditionally been called The Truth.

The concept of "Truth" as an obtainable inclusive homomorphic representation of the world formulated in anthropomorphic ~~terminologies~~ symbols derived from anthropocentric viewpoints is a chimera that has directed human intellectual activity throughout history. In one of its latest manifestations it is called "A theory of Everything". The pursuit of Truth makes the assumption that human experience can encompass a sufficient set of phenomenological events that when processed by our particular mode of thinking the product will be a valid model of the universe. But the point to be made here is, not that a valid model is not a desiderata, but that instead of focusing on trying to perfect one model, our pursuit should be to find as many ~~valid~~ models as humanly conceivable, And in the immediate situation, the task is to support ~~this proposition~~ it with as many alternative arguments as possible. –[The heavy prose approach, This could be made even heavier but that would require German.]

ALTERN02.WPD OCTOBER 25, 2000

ABANDONING OUR COCOON

Today is the feast day of Saints Crispin and Crispian who, legend tells us, were humble immigrant shoe makers martyred in Soissons. Curiously, their fame rests not on their piety and saintly service, but that their feast day was immortalized by war and battle, by Henry V and his victory on this day at Agincourt. [1415] Human history is the history of kings and battles, of the conflicts of egos in pursuit of power. We find meaning in the dramatization of our conflicts and project conflict and struggle onto the world to be its very meaning and essential process. But some part of humanity knows better, else there would be no record whatsoever of the likes of Crispin and Crispian and those who could perceive the world differently.

But the projection of conflict and power is not our only projection on the world. We project our logic and way of thinking onto how the world must be. We elevate our rationality to be above all faculties possessed by any other member of the animal, vegetable, or mineral kingdoms. While effective when bent for our purposes, does human rationality really perceive the world correctly? Any faculty developed by a species, while both serving its needs and shaping its evolution, may not necessarily promote that species' overall survivability nor its utility by the whole. Each is a variation on a theme, but do any lead to an understanding of the theme itself? Humans do assume that their prized faculty of reason will allow them to comprehend the theme. But, on the contrary, an alternative assumption may be the key to ultimate grasping of the theme.

Is it possible to look at the set of various faculties developed [or evolved] by the different organisms and detect some ingredient present in each beyond what serves their local and temporal needs? This would be to examine behaviors manifested by phenotypes as being as fundamental as the structures inherent in the genotypes. [I feel a revised Lamarkian view may have some merit.]
Form and function are interrelated but many forms permit a wide spectrum of functions. And certain functions can be carried out by quite diverse forms. Accordingly, let us look at the set of functions as well as the forms.

Another way to put this is to inquire into the trans-metabolic [meta-metabolic?] activities of other species. Just as humans search for the *theme* in their sciences and religions, shouldn't we allow that other species also question and seek beyond food, sex, and survival. We should not arrogantly reject this possibility. There may be some members of each species, like scientists, sages, and saints among humans, who indeed participate in such a search. Let us go forth and meet them and join them. I strongly suspect this to be the case, because we recognize sacred places, groves, stones, and most mysteriously, sacred times, all of which seem also to be recognized by the non-human.

TREES.WPD OCTOBER 25, 2000

THE LANGUAGE OF THE TREES

A few years ago when returning through southern Oregon the road led through a magnificent forest of firs. As I drove south a light rain began to fall and a mist gathered around the tops of the trees. Continuing on I became aware of what seemed like a choir singing, but there was no sound. I felt I was in the presence of a great chorus which was exulting in joyous harmonies. There were definitely no such sounds, but something evoked in me the same feelings that such music would. I began to sing responding to a strange feeling of joy or happiness that I could not explain. The road suddenly left the forest and entered an inhabited area and the feelings shifted from the joyfulness I had been feeling to concerns about traffic. Further south the road again entered the forest and after a few miles I was again caught up in this strange forest euphoria. I decided it was the particular beauty of the forest that was inspiring me. But no, it was more than that. What I was tuning to was the singing of the trees. The forest was rejoicing in and with the rain. There was no doubt in my mind that I was in the presence of something like a psychic field of joy. I could definitely feel it. It is not unusual for the forest to speak to us through its visual beauty, but on this occasion I was somehow able to eavesdrop into the spiritual spectrum with which the trees themselves communicate.

We humans think of ourselves as the most intelligent of all species. Perhaps we are, but there may be attributes, unknown to us, that are equal to or superior to our kind of intelligence. And there may be entities, unknown to us, that possess these superior attributes. For example, it has often been proposed that the earth itself may be an entity possessing such attributes. But our arrogance precludes our seriously considering or investigating such hypotheses. [Confirmation may even lie beyond the limitations of our brand of intelligence.] But the totality of human experience with trees suggests that the hypothesis they possess some form of communicable quasi- or meta-intelligence has merit. The sacred groves of the pagans, the myths describing the spirits that reside in trees, the timeless praise of trees by poets and painters, and the affection sensitive humans today have for trees, all point to some subtle kinship between our two species.

The key to communication may lie in our developing a certain kind of sensitivity we all possess but have allowed to atrophy for lack of use. Trees speak the language of feeling, not our language of symbols. And to the extent we can feel, the trees can speak to us. And how can we speak back to them? I believe we speak to them by not speaking, by simply hearing in silence. Or if we can somehow radiate what we call gratitude, we can join with them. For their message seems to be filled to the brim with feelings of gratitude. And what is gratitude? It is the realization and expression of an inclusive precious oneness that we all share.

ATHROIS0.WPD **August 26, 1998, rev November 7, 2000**

ATHROISMATICS
THE STUDY OF PARTS AND WHOLES

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

A real breakthrough is when somebody has sufficient creative imagination, and courage to follow it up --which may be even more important-- to say, "Let us look at the universe in terms of some new kinds of entities, some new kinds of units, or some new way of combining them." --Ralph Gerard

Parts and wholes have been the subject of scientific, mathematical, and philosophical thought since classical times. Great explanatory progress was made when it was seen that decomposing an entity into parts and investigating the attributes of the parts contributed to the understanding of the whole. The success of this decomposition process and bottom up transmission of attributes became a main stay of scientific investigation under the name *reductionism*. However, for many systems the assumptions of scalar reductionism (small to large) and temporal causality (prior to later) fails to account for emerging properties of the whole.[1] Accordingly, it seems proper at this time to consider alternative approaches to the relationships between parts and wholes, going beyond traditional scale and time decompositions. We here introduce a neologism, *athroismatics*, as a label for the study of the general properties of parts, wholes, and their inter- and intra-relationships. The name is derived from the Greek, *αθροιμα*, meaning a gathering, collection, or aggregate.

In the 20th century a different species of part/whole became apparent with examples of entities possessing the property of "mutual containment", an entity in which the whole not only contains the parts, but the parts also contain the whole. This counter intuitive arrangement was present in the properties of the newly invented hologram, but also in the human body, in which each cell contains the genetic material for replicating the whole. Accompanying mutual containment of certain entities, is the "mutual causality" or duplex nature of certain relationships. Forces create forms and forms in turn direct the forces.[2] Still another species of part/whole which has been explored in the 20th century is "regressive entification", nested sets of Chinese boxes, or Russian matroshka dolls. Structures of this type have been traditionally associated with hierarchies, but are now being seen as objects best explained as having fractional dimension–*Fractals*, self similar sets manifested at different scales. It is indeed time for a re-look at this ancient subject.

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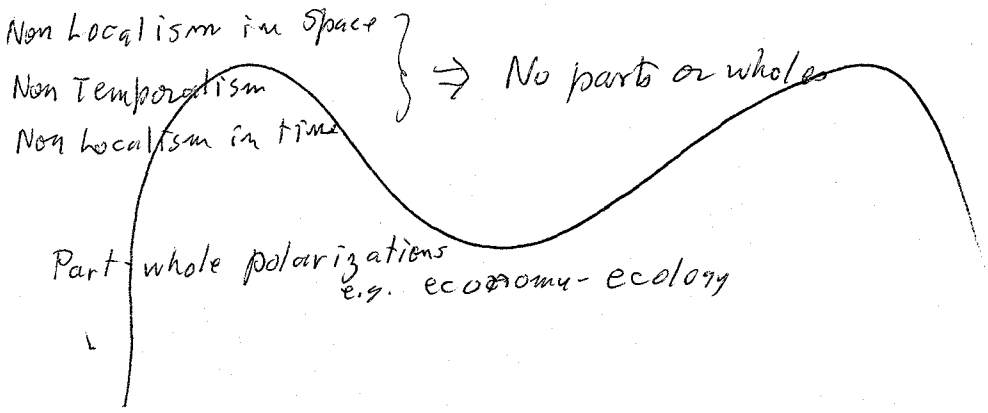
[1]Reductionism was formalized by John Locke, who held that what was smaller in size, was prior in time, and was visible, constituted what was significant.

[2]J.A. Wheeler gives an example from general relativity: "Matter tells space how to curve, space tells matter how to move."


Non Localism in Space
Non Temporalism
Non Localism in time
⇒ No parts or wholes
Part-whole polarizations
e.g. economy - ecology

SANSKRIT	JAPANESE
Aksobya	Ashuku
Amitaba	Amiba, Muryoju Butsu
Amogho Siddi	Fukujoju
atman	ga
Avolokitesvara	Kanjizai
Brahma	Bon-ten
chakra	rinbo
darmakaya	hosshin
deva	ten
dharma	ho
dhyana	zen na
Hinayana	Sho jo
HRIH	KIRIKU
kalpa	ko
kundalini	Gundari Myo-o
Mahavairacona	Dainichi
Mahayana	Dai jo
Maitreya	Miroku
Manjusri	Monju
mudra	ingei
Nagarjuna	Ryuju, Ryumyo
namaste	gassho
nirmanakaya	ojin
nirvana	nehan
prajna	hannyo
puja	kuyo
Ratna Sambhava	
samboghakaya	hojin
sunyata	ku
Tantra	Giki
Tathagata	Nyorai
Vairacona	Birushana
Vajra Sattva	Kongo satta

EXMID.WPD

NOVEMBER 11, 2000
PART I 1999 # 54 NOVEMBER 18, 1999

EXCLUDING THE EXCLUDED MIDDLE[1] PART II

As the year 2000 presidential election in the United States moved toward a fulcrum, a near balance in number of votes between the two contenders, we began to experience the disappearance of the excluded middle. At a fulcrum the option space changes. No longer are the options restricted to those allowed by Aristotle's law of the excluded middle, either [A] or [B], the options suddenly meaningfully include the "illogical" options [both A and B] and [neither A nor B]. The pundits and deans of law schools are calling the vote situation "uncharted territory", and are searching for precedents to guide decisions. It is true that being on a fulcrum is uncharted territory for western logic. But the fulcrum, the place where the interface between contraries is located, is the domain of emergence. At the fulcrum it is possible to transcend Aristotelean polarization. Going beyond [A] and [B] it becomes possible either to synthesize a position from selected components of both A and B, (this means more than negotiation or compromise), or allow the injection of an innovation that completely rejects both A and B. Either of these options lead to emergence. At any fulcrum the choices change from {[A] or [B]} to {[E] or [P]}, where [E] stands for emergence and [P] for continued polarization. Or, put in another way, the choice is to reject or to retain the law of the excluded middle.

From dynastic conflict to business competition human history is centered on an [A] or [B] dyad. Both Zarathustra's theology, the basis of western religions, and Aristotle's logic, the basis of western science, establish a dyadic world view. (Perhaps we should ask, Is a multiplicity of choices beyond two an overload on human information processing capabilities). However, whenever a pair of dyads is put into juxtaposition, (called elsewhere a "cross-dialectic"), the law of the excluded middle is circumvented, and some form of emergence results. (One example is the simultaneous occurrence of the Ptolmaic-Copernican dyad and the Luther-Vatican dyad, resulting in the viability of the reformation, another is the demise of the USSR, destroyed by an economic vs, cultural cross- dialectic). Alternatively, sometimes the positioning of [A] vs. [B] diverts attention from the fact that A contains B or that B contains A. In either of these instances the law of the excluded middle has already disappeared, and some form of emergence is under way. And what emerges in these cases is monopoly, where there is an image of [A] vs. [B] obscuring the reality of A is B. But on a fulcrum this smoke can be seen through.

Conclusion: Business as usual is secure so long as the law of the excluded middle is firmly in place. However, when circumstance leads to a fulcrum, there is a crisis for the [A] vs.[B] dyad. What ensues after encountering a fulcrum is either a revised polarization, between two re-aligned contenders, or an emergence which could be an unpredictable innovation.

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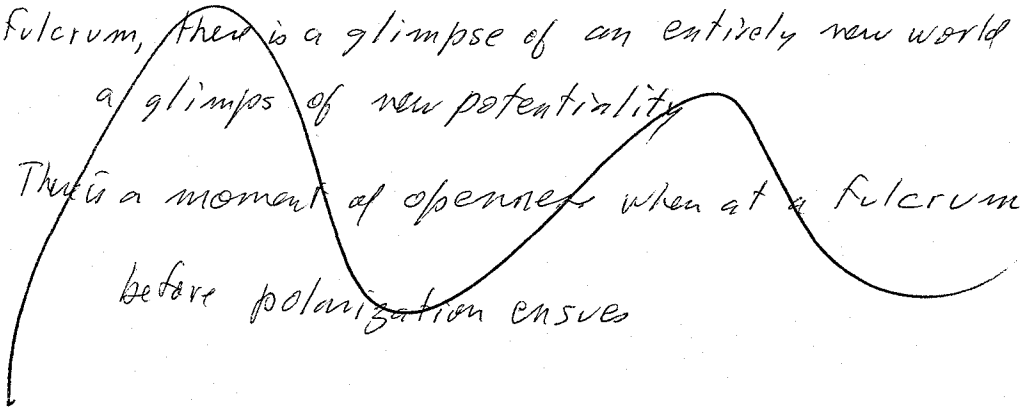
[1]The law of the excluded middle is that of Aristotle's logic, the logic of the western mind. Succinctly, it states that a proposition is either true or false, a person is either guilty or not guilty, an object is either here or there [not here], an event either happened or didn't happen, an entity either exists or does not exist. There is no middle ground. No other alternatives are possible.

At a fulcrum, there is a glimpse of an entirely new world
a glimpse of new potentiality

There is a moment of openness when at a fulcrum
before polarization ensues



R0BIN3.WPD November 11, 2000

Dear Victoria,

No, I have not been to LA since I last saw you. I have not yet received any news concerning a memorial service for Robin. Susan did send me an email about a week ago saying Robin had left me some pictures and a bowl of my mother's that I had given her several years ago. I think Woody, her estate executor, is still there trying to put things in order.

Yes, there are some peculiar happenings. We must get together soon and discuss them. For one, Carl Jung enumerated several anecdotes about flocks of birds gathering just before a death. I recall two days before Donna died seeing scores of crows on the roof of the Ginkgo and in the big tree in the rear. I remarked about it at the time but none of us thought much about it. It was much later that I ran across Jung's material on the mantic gatherings of birds ~~and~~ with death.

I believe I told you the story of what happened when Art and I had brought Donna's ashes here after her death. We independently and simultaneously felt her strong presence. We were each occupied at different tasks, being about 20 feet apart, when we suddenly felt her presence and simultaneously turned to each other and each of us yelled to the other, "did you feel that?" We knew it was Donna's presence.

Susan called me about an hour after Robin's passing. A bit later that night I went outside and saw the new moon, it was exactly as it appeared in Woodland hills as I left the hospital an hour after Donna died. Robin and Donna both chose the same time-of-moon to die!

For several weeks I had been going twice daily or more into the meditation room and meditating for Robin's recovery and freedom from pain. I would touch a special candle dedicated to her while carrying her in my thoughts. But I must mention here that for several months, as far back as February, the fluorescent light in the meditation room had been defunct. It would come on only at a low level when the switch was thrown. On one or two occasions during those months when I was at a deep level of meditation the light would jump to full brightness and remain high. But most of the time it never changed from low. I should have repaired the light, but I felt it unnecessary. Bright light is not really needed in a meditation room.

Early on the morning after Robin had died, I got out of bed and went directly to the meditation room and turned on the switch. the low light came on and I could see my way to the altar where Robin's candle stood. I walked across the room and stood silently before the altar, then reached to touch the candle. At the nanosecond my hand touched the candle the light instantly turned up bright. I then meditated for some time in the brightly lit room. On leaving I turned the light off. About an hour later I went back but the light remained low, and it has not turned bright since. I somehow knew it was Robin and she or someone had devised a physical signal to tell me she was alright and in a place of great joy and happiness. The same message Donna had sent to Art and me.

Jung would explain the significance of this event as residing in the improbability of the precise timing of the light with my touching the candle. Considering the rarity of the light's turning up over a period of months, the probability of this coincidence was infinitesimal. Jung called this kind of event a synchronicity, a term he coined for a meaningful coincidence. A synchronicity is a highly improbable event that occurs at the intersection of the physical and the non physical, and always is the bearer of some important meaning.

It is recorded that when asked whether he believed in a life after death, Jung said "I dont believe, I know" After all that I have witnessed of the transitions from this life of those two most remarkable souls, Donna and Robin, I can now join Jung in his knowing

Much love to you, dear Victoria

AL

The above was my reply to this email received earlier on the same date.

Dear Al November 11, 2000

I am wondering if you are down here in LA. I have not gotten any word about Robin's memorial and I am wondering if that was why you were trying to get a hold of me when my phones were out. I had an interesting experience the other morning when I was meditating. Robin came into my mind but I did not feel her presence then my mind shifted to Donna and I didn't feel her presence either. That day when I left and drove by the Ginkgo Leaf to my surprise and sadness it has been bull dozed down. One week after Robin passed the telephone/fax from the Gingko that Robin gave to me went on the blitz and now the physical form is gone. I know the teachings and the memories are what remains. It all feels very auspicious and is stirring up a lot of thoughts. I hope to hear from you.

love Victoria

00/11/15 70c

Dear Al,

I am sorry I did not respond sooner, I needed some time to think about your last email. In addition I was sick and I was also waiting to find out info on going north. My son accepted a temporary position in Eureka which began last Mon. I looked into taking the train and I wanted to stop and visit you in route but it all turned out to be too complicated and taking much more time than I can take off right now. So here we are. I thank you for sharing your experiences about Donna and Robins death. There are so many coincidences in life that I think about as having meaning. When I try to share them with other people they are not understood and so Inegate the experience. The day I saw the Ginkgo being bull dozed down my heart sank, it felt like the final passing. I thought it so interesting that the building sat empty for all this time and several people tried to take it over myself included and no one was to occupy it. Then approximately 2 weeks after Robin's death it is demolished. That morning I was meditating and had a need to connect with Donna and Robin and I didn't. Just a week before I had a need to connect and went for a walk through and around the grounds just to notice if I could feel anything, I didn't know then it was a last good-bye. Synchronicity, there is a lot of it happening all around us, I think it is a matter of being aware of it. Much to think about. I love talking about these things with you, they are very special conversations, thank you. I hope that we can get together sooner than later, I am going to London 12/26 through 1/10 so I suspect it will be well after that before I could possibly come up that direction. I am also planning to go back to school next semester, now that the studio is well on it's way.

much love Victoria

EL2000.WPD NOVEMBER 14, 2000

ELECTION 2000

Also see 2000 #83

AN INTERPRETATION OF THE RESULTS

When toss of coin end standing on edge message is: not head, not tail. Li Kiang

It has been said that "Emergence is at the verge", meaning that innovation takes place at the interface where opposites meet. So long as the position is on either side of the verge a continuing polarization ensues. Interpreting this in terms of an election, whenever there is a clear "winner" and "loser" business-as-usual polarization with all its paralyzing side effects continues. But when a vote moves to the fulcrum of balance, the verge, with no clear winner, there is opportunity to escape to a new level. However, in order to take advantage of this moment of release, both parties to the contest must be flatly rejected. Instead, the action usually taken is to ignore this special opportunity and seek a decision, find a winner, renew polarization. While many see that the verge calls for termination of the polarization, only a few see the need for rejecting both candidates.

It is interesting that some of the media pundits have tangentially referred to Li Kiang's wisdom of the verge. Here are some media quotes:

> "The will of the people", wrote Thomas Jefferson, "is the only legitimate foundation of any government." **Can it really be just an accident that the people, given two such inadequate choices, have willed to select neither?** Plunging the presidency into a crisis of legitimacy may end up exposing the illegitimacies that lurk beneath the surface of our orderly, prosperous "best of times"
>
> Arianna Huffington, L.A.Times Nov 13, 2000

> Deep in our hearts, there lurks the satisfying feeling that the outcome is what the candidates deserved. The nation may be divided down the middle, but we're all withholding our love. **The 50-50 impasse feels almost like a protest vote.** The American people have a right to fervor in presidential races and Gore and Bush trampled on that right. They were lackluster, so we were lukewarm.
>
> Maureen Dowd, N.Y. Times, Nov 14, 2000

> We are in a "teachable moment"
>
> Ellen Goodman, Boston Globe, Nov 15, 2000

And the opinions of the public:

> "If those two guys can't get together and solve this mess, neither deserves to be president."
>
> Reported by Leon Panetta, Press Democrat, Nov 15, 2000

> In my opinion both candidates should be disqualified.
>
> R. van Bebbes, Press Democrat, Nov 15, 2000

REMEMBERING ROBIN

The time, 1968. The place, Huntington Beach, California. The occasion, an international conference held by the Douglas Aircraft Co, Advanced Research Laboratories on Multilevel Structures. My late wife, Donna Wilson, co-organizer of the conference, was desperate for assistance in putting together the proceedings for a publication. She went to the publications department for help and met **Robin Simpson**. At that moment began a most remarkable friendship that was to last for 30 years. Donna returned to the laboratory, so excited, "I have just met the most wonderful person! She knows exactly how to organize this job, and had so many good suggestions. I am really overwhelmed. But more than that, I think I have found a real friend. We seem to have so much in common." And they did. Donna and Robin recognized each other immediately. They were a remarkable pair, complementary in their differences, affirming in their similarities. And I was lucky to have witnessed and been a part of that long lasting friendship. In fact Robin taught me the meaning of what it was to be a friend.

Robin had an innate integrity that went far beyond what we usually refer to as honesty and reliability. She had an internal compass that served not only to guide herself, but all of us through some difficult times. Her modest wisdom and determined convictions inspired us when we were down. But I regret that we were not always able to give to her in return the measure she always gave to us.

In no contradiction to her integrity, Robin was an optimist and had a wonderful sense of humor. She was great company and fun to be with. I guess her ability to see through life's pretensions and spot its absurdities led her to become, not a cynic, but a philosopher. She taught us how to laugh at things, including ourselves.

Of course, Robin's career centered on publications. Taking ofttimes stubborn material, re-organizing it, making it understandable, and attractive in print was one of her fine skills. Her productions covered a wide range of subjects, from the pelagic ecology of offshore drilling rigs to the lifestyles of the nomads of central Asia. Including the book translated into other languages that came from the afore mentioned 1968 conference at Douglas. (I hope that a complete list of Robin's publications will be made available to us.) In our society authors get the renown while the editors who make their works palatable usually go unheralded. Otherwise hundreds more would have heard of Robin.

Everyone who knew Robin was impressed with her artistic taste. I mention this, though I am not qualified to evaluate it. To visit her home was more than going to an art museum. There was not only a collection of exquisite collections, be they vases, pictures, furniture, or just candles, there was the esthetic arrangement of the collections themselves. Robin's talents not only included a finely developed sensitivity for the artistic, but included the talent of enhancing the pieces through their arrangement. She was a master of the art of arranging art.

If ever there is need for a living definition of loyalty, fairness, dependability, compassion, all the ingredients of friendship, numerous examples could be found in the way Robin lived her life. Why is it that every memory of some people is so powerful? When we recall specific incidents, we pause, puzzled, feeling that it's not over, that it will never be over. For those of us who knew her, she will always be in our hearts. But more than that. We still feel her presence, and know that it is not just in our memories.

–Albert Wilson

REMROBIN.WPD 00/11/18

FOR MEMORIAL SERVICE 02/12/04

Remembering A Friend

By Albert Wilson

The time, 1968. The place, Huntington Beach, California. The occasion, an international conference held by the Douglas Aircraft Co, Advanced Research Laboratories on Multilevel Structures. My late wife, Donna Wilson, co-organizer of the conference, was desperate for assistance in putting together the proceedings for a publication. She went to the publications department for help and met Robin. At that moment began a most remarkable friendship that was to last for 30 years. Donna returned to the laboratory, so excited, "I have just met the most wonderful person! She knows exactly how to organize this job, and had so many good suggestions. I am really overwhelmed. But more than that, I think I have found a real friend. We seem to have so much in common." And they did. Donna and Robin recognized each other immediately. They were a remarkable pair, complementary in their differences, affirming in their similarities. And I was lucky to have witnessed and been a part of that long lasting friendship. In fact Robin taught me the meaning of what it was to be a friend.

Robin had an innate integrity that went far beyond what we usually refer to as honesty and reliability. She had an internal compass that served not only to guide herself, but all of us through some difficult times. Her modest wisdom and determined convictions inspired us when we were down. I regret that we were not always able to give to her in return the measure she always gave to us.

Robin was an optimist and had a wonderful sense of humor. She was great company and fun to be with. Her ability to see through life's pretensions and spot its absurdities led her to become not a cynic, but a philosopher. She taught us how to laugh at things, including ourselves.

She often took on stubborn material in her carreer, making it understandable and attractive in print. Her work covered a wide range of subjects, from the pelagic ecology of offshore drilling rigs to the lifestyles of the nomads of Central Asia.

If there is need for a living definition of loyalty, fairness, dependability, compassion, all the ingredients of friendship, numerous examples could be found in the way Robin lived her life. Why is it that every memory of some people is so powerful? When we recall specific incidents, we pause, puzzled, feeling that it is not over, that it will never be over. For those of us who knew her, she will always be in our hearts. But more than that, we still feel her presence, and know that it is not just in our memories.

James Monday's edited version

THEMES01.WPD NOVEMBER 22, 2000

SOME BASIC PROBLEM AREAS I

I CONTAINMENT

I. <u>The Species of Containment:</u>

SCALAR CONTAINMENT (1)

Open Containment (2)

(3) Euclidean Containment: One parameter containment

(4) Matroshka Containment: Iterated one parameter containment ~ regression?

Closed Containment

One Parameter Mutual Containment: ==> Equality

Cross Parameter Mutual Containment:

Self Containment [Self Reference]

Looped Matroshka Containment: "Strange Loops"

Bi-Cross Parameter Mutual Containment

genealogical containment — Each generation as a dimension in P - B

Ur~~aborus of Blake~~

part-whole polarizations

~~meta-genii~~

NOTES:

(1) *Scalar containment is taken to mean static or time free containment.

(2) *Open containment infers open below and open above, no self imposed bounds

(3) *Euclidean containment is conventional geometric or algebraic containment, A>B

(4) *Matroshka refers to nested Russian dolls. e.g. modular heirarchies, fractal organization

*Closed containment infers self bounding Hofstader's genii meta-genii

*Mathematical equality is meaningful only if a single parameter is involved. If a generalized Pauli Exclusion Principle is valid, [no two entities take on identical values for all parameters], then total equality infers non-existence. In between, equality in more that one parameter ~~leaves~~ exit the mathematical domain of quantity and enters the domain of quality.

*Examples of cross parameter mutual containment would be: genotype containing phenotype and phenotype containing genotype. Holograms, in which the whole contains the parts and each part contains the whole.

*The Pope declaring himself infallible is a self contained or self referential proposition. While such a proposition may have validity within the system, its validity cannot be supported outside the system without additional linkages.

uroborus *The Jeffersonian notion of sovereignty is a closed loop. The executive at the top, below, the levels of national ministers, ...local ministers... down to the people, whose sovereignty loops back over the executive. Time is involved in this loop, and is strictly not scalar. A scalar example is implied in Blake's Augeries of Innocence,

"To see a World in a Grain of Sand and a Heaven in a Wild Flower,

Hold Infinity in the palm of your hand and Eternity in an hour".

~~Hofstadter~~ ~~Godel, Escher, Bach~~

*This is very difficult. Could it be what would be meant if Blake's line were rendered,

Hold Eternity in the palm of your hand and Infinity in an hour ?

STALIN.WPD NOVEMBER 22, 2000

THE POLITICAL PHILOSOPHY OF JOSEPH STALIN

"Those who cast the votes decide nothing;
those who count the votes decide everything". –Stalin

"One death, two deaths, that is a tragedy.
One million deaths, two million deaths, that is a statistic". –Stalin

"Ideas are more powerful than guns.
We would not let our enemies have guns,
why should we let them have ideas? " –Stalin

"History is what I write it to be". –Stalin[1]

While Stalin must be given credit for many important contributions to the Standard Handbook for Dictators, his ability to articulate the essences of political control and his fearlessness in disclosing esoteric spin secrets makes him the 20th Century's outstanding Dictator. Why he should be willing to disclose his tools of spin might seem strange, except that Stalin knew the 'herd' would not believe in their existence nor understand them if they did.

However, Stalin did take several of his ideas from predecessors. For example, the idea of two governments, one visible and nominal, a front and facade for the other that was the real seat of power. For decades the Soviet government was a front for the governing center, the Communist Party. Stalin was the Party's Secretary General, a behind the scenes puppeteer for Kalinin, the Soviet President, and other members of the visible government. But this concept goes back to Ivan the Terrible. Ivan set up a secret parallel government, the Oprichnina, that spied on the open government. But both the government and the Oprichnina reported to Ivan. Stalin updated the idea, making the Communist party the 20th Century version of the Oprichnina.

On closer inspection, even in western democracies, a political party is a parallel government. The essential difference between the Soviet system and the west is that in the west there must be no party monopoly, there must be competitive parties. However, in spite of Constitutions and the "rule of law", a major portion of political power resides in the winning party. But even with competing parties, if both report to Ivan, democracy becomes but a facade and front to deceive the people. The political evolution of democracies, including that of the United States, shows that the ideas of Jefferson and Madison over time are invisibly replaced with those of Ivan and Stalin. Specifically, most of the major corporations in the US contribute to both major parties, and to candidates in both parties, thus assuring whichever side wins an election will be beholden to those who financed their election. A subset of corporate America has become the United States' Ivan, to whom the government reports..

Perhaps, after all, Kruschev was right: Ivan has buried us.

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[1]Stalin must have been part of the inspiration for Orwell's 1984, wherein it says, 'Who controls the past, controls the future. Who controls the present, controls the past.'

TRENDS TOWARD CRISES

1] Continuing to think in the box, decisions based on precedent, business as usual.

We shall require a substantially new manner of thinking
If mankind is to survive. -Einstein

A number of serious adjustments in thought must occur if we are to have something useful to say about the disassembled modern world of restless identities and uncertain connections. -Clifford Geertz

If our societies are to mange their affairs and improve their well being they will need more ingenuity, more ideas for solving their problems. There is often a critical time lag between the recognition of a problem and the delivery of sufficient ingenuity to solve it. -Thomas Homer-Dixon

The world does not obey the 'law of the excluded middle'
It is an erroneous holdover of Western logic. -Li Kiang

2a] Failure to make ~~coherent~~ coherent the patterns of location with those of movement.

General Relativity teaches that matter tells space how to curve and curvature tells matter how to move. -J. A. Wheeler

Force <--> Form

The urban patterns of location direct the movement of traffic, but the patterns of traffic fail to restructure the patterns of location.

Force <-- Form

The varieties of movement are ignored with regard to both their frequencies and velocities
These are:
Primary: Emergencies, Deliveries, Grocery Shopping
Secondary: Health, Education, Other Shopping
Tertiary: Recreation, Entertainment, Visiting, Tourism
Rarely: Pilgrimages, Protests, Trecks

a moving car in effect expands the faster the longer opposite the heavens contraction

2b] Failure to provide sufficient open space to counter the limits imposed by density.

Open space is essential to both nature and humans.
When it is gone great extinction will occur.

The interaction of density and commuting time determine the viability of the city.

2c] Failure to provide affordable housing in proximity to work.

NERDPACK.WPD NOVEMBER 28, 2000

NERD PACKS

In researching the biological and psychological differences between the two genders, our findings lead to the conclusion that the respective nerd packs are the most useful indicators of the significant sexual differences.

For the basic nerd packs, male and female, we have the following:

MALE	FEMALE
Fountain Pen	Lipstick
Note Pad	Mirror
Knife	Comb
Calculator	Emery Board

Advanced gender nerd packs add the following:

Screw Driver	Eye Shadow
Pocket Wrench	Powder & Rouge
Small Magnifier	Needle & Thread

However, advances in high technology have caused a blurring of gender difference. Recent research turned up the following:

Cell Phone	Cell Phone
Electronic Organizer	Electronic Organizer

Not only the homogenization of wearing apparel, (everyone except drag queens now wears pants), but the role of electronic devices is further erasing gender difference. The Frenchman who used to toast "vive le difference", has become perplexed. No longer can you sit in a sidewalk café on the Champs Elysees and eye the legs of passing mademoiselles, now you see only pant legs–and if you look up, the ubiquitous unisex cell phone. My grandfather was a man of extraordinary perspicacity. He remarked, when the last side saddle was given to a local museum, "I tell you abandoning the side saddle is going to take us into unchartered territory. I fear for the future." And that was a century before high tech.

We are currently researching body piercing

IMPROB.WPD OCTOBER 30, 2000 rev MARCH 27,2001

See also 2000# 78, 2001# 100

THE IMPROBABILITY CHANNEL PART I

I have always found it difficult to accept the reality of a highly improbable occurrence, and since I have personally experienced several very improbable events, I have sought a rationale for their validation. Part II of the "Improbability Channel" [Scrap 2000#78] is a draft attempt to get a handle on this matter. From Part II: *When a sufficient number of improbable events occur that fit the same pattern, while each constituent event may be improbable, the pattern itself acquires statistical validity.* This concept must be explored.

The specific events and pattern that introduced me to this question could perhaps be labeled "the resurrection pattern". Its label comes from a story that is recorded in the Bible, the story where Mary Magdalene encounters one who had been precious to her who recently died. In her story she actually saw, heard and spoke with that person who was physically dead. This story has been interpreted and elaborated to fit several theological dogmas. I can readily disbelieve many of those interpretations, but I can also readily believe that this story describes a specific occurrence of a recognizable and not altogether rare manifestation of an archetype. The pattern or archetype of a resurrection.

I recount here two personal experiences which are manifestations of this pattern:

My son Art and I brought my wife Donna's ashes here a few days after her death in early June of 1998. We were unloading the car and were each occupied with different tasks, being some 20 feet apart, when suddenly, independently and simultaneously, we both felt a strong presence. We turned to each other and at the same instant each of us yelled to the other, "Did you feel that? It's Donna!" We knew the presence was Donna and it reassured us that Donna was still very much alive, or existed, in some non-physical sense that was quite independent of the contents of our own minds.

The second event occurred in late October, 2000. My and Donna's close friend, Robin, had been ill for several weeks with terminal cancer and the inevitability of her death was soaking into our psyches. On Sunday evening October 29, Susan called me about 8:00 p.m. telling me that Robin had passed away about an hour earlier.

A very improbable event occurred the next morning. For several weeks I had been going at least twice daily into the meditation room and focusing on Robin's recovery and freedom from pain. I had evolved a ritual to touch a special candle dedicated to her while supporting her in my thoughts. But I must mention here that for several months, as far back as February, the fluorescent light in the meditation room had become defective. When the switch was thrown, the light would come on only partially, at low intensity. On one occasion during all of those months when I was at a very deep level of meditation the light suddenly jumped to full brightness and remained high until turned off at the switch. But except for that one instance, the light routinely only came on low and stayed low. I should have repaired the light, but I felt it unnecessary. Bright light is not really needed in a meditation room.

Early on the morning after Robin had died, I got out of bed and went directly to the meditation room and turned on the light switch. The usual low light came on and I could see my way across the room to the altar where Robin's candle stood. I walked across and stood silently for a few seconds before the altar, then reached to touch the candle. At the nanosecond my hand touched the candle the light instantly turned up bright! Overwhelmed, I sat and meditated for some time in the brightly lit room, trying to interpret what had happened. On leaving I turned the light off. About an hour later I went back, entered the room, threw the switch, but the light remained low. And it has not turned bright since. [now March 2001] *

What did all of this mean? At the instant the light came on, I somehow knew it had to do with Robin and that she or something had devised a physical way to send me a message. This was a last gift coming from a dear friend, reassuring me and telling me that she was alright and in a state of bliss in a place of intense joy and happiness. The same message Donna had sent to Art and me.

It is recorded that when asked whether he believed in life after death, Jung said "I don't believe, I know" After all I have witnessed of the transitions from this life of those two most remarkable souls, Donna and Robin, I can now join Jung in that special way of knowing that transcends ordinary knowledge.

Certainly there are many ways to interpret these events. Coincidence, random fluctuations in the circuitry, or perhaps certain mental powers that are activated at singular times that can affect physical systems. But the interpretation that resonates with me is that these improbabilities did not originate in the physical world but in an interaction between the physical world and some other realm that has often been called "spiritual".

The light was repaired Oct 24, 2001

* Today, September 23, 2001, when I went into the meditation room about 5:35 PM, I threw the wall switch - I then went before the new Manjusri Gift and when I called for a blessing on him, the instant I said his name, the light went on full for the first time since Oct 2000. [above]

IMPROB2.WPD OCTOBER 31, 2000 rev NOVEMBER 29, 2000

See also 2000 #77, 2001 #100

THE IMPROBABILITY CHANNEL PART II

Human Life Is Driven Forward by its Dim Apprehension
Of Notions Too General for its Existing Language.
–A. N. WHITEHEAD

Of equal, or possibly of even more significance than the probable events we tend to classify as "laws of nature", are various kinds of improbable and unique events. These are usually denied or ignored by an epistemology which restricts itself to the frequently repeated and intentionally reproducible. [read the scientific method]. Here we note four kinds of improbable events:

1) Events that are exceedingly rare, but may be re-occurrences of some long term cyclical phenomenon. For the ancients, eclipses would be an example.

2) Improbable events that when taken collectively produce a recognizable pattern.
If, when a certain number of such improbable events occur, and through their similarity they form a *recognizable pattern,* then, although each constituent event may be improbable, the pattern itself may acquire statistical validity

3) Synchronicities
Among events of high improbability are those that C.G. Jung called *synchronicities.* These are improbable happenings that intrude into an ordinary sequence of events in a *meaningful* manner. While there may be no visible causal connections, there are meaningful consequences. Synchronicities interact with ordinary probable events in such a way as either to meaningfully redirect them or bring them to an unforeseen but meaningful conclusion.
Among the questions that arise are: What is meant by meaningful? Meaningfulness has to do with subjective expectations regarding fitting a well recognized [hence probable] pattern or archetype. Thus a synchronicity joins the improbable to the probable, the acausal with the causal, and infers that there is innovative creativity continually interacting with what already exists.
A basic feature of a synchronicity has to do with time [as the name suggests]. Synchronicities always involve temporal improbabilities. By definition, a synchronicity consists of a confluence of events, whose separate occurrence may be probable or improbable but taken in toto constitute an improbable coincidence in time. That is, the basic improbability in a synchronicity lies in the improbability of the coming together of the constituent events at the same moment in time. And as Jung defines, a synchronicity in addition always involves meaningfulness, either a meaningful message or an action that meaningfully redirects the course of events. Time, meaning and probability, a curious triad that has traditionally been called either luck, fortune, or fate.

4) Miracles

Another species of improbable event is known as a *miracle.* Over centuries countless so-called *miracles* have been well documented. But since the laws of nature are basically statistical, a miracle need not be taken as either a violation of an inductively established law nor a falsification of a law. From the viewpoint of probability theory, a miracle is but an improbable event. However, when a sufficient number of miracles constitute a pattern, as pointed out before, that pattern acquires far greater statistical significance than any of its improbable components.

In conclusion, we must agree with Hamlet, "There are more things in heaven and earth, Horatio, Than are dreamt of in your philosophies."

With reference to the first event reported in "The Improbability Channel Part I" [Scraps 2000#77], Jung might hold that its significance or validity derives from the improbability of the "presence" *simultaneously* striking two observers. The presence striking more than one observer removes its explanation from being an individual mental event.

As for the second event, Jung might view its significance as residing in the improbability of the *precise timing* of the light with touching the candle. In both events there is an element involving improbabilities in the synchronous timing of presumably independent factors, two humans in the first case, two actions in the second. In fact, considering the rarity of the light's turning bright over a period of months, the probability of this coincidence was infinitesimal. Both of these events readily fit Jung's concept of synchronicity, "a highly improbable event that occurs at the intersection of the physical and the non physical, and is the conveyer of meaning."

BIMODAL.WPD DECEMBER 1, 2000

ADVENT 2000

Now comes the last Advent of the millennium. And as Advent is the time of consecration of the next cycle, this Advent becomes a most significant Advent. The century now ending has been extreme in its contrasts. The advance in scientific and technical knowledge contrasted with the degeneration of human and moral values. The leaps forward in power to heal and cure against the leaps backward in power to destroy and slaughter. And never has the bimodality of so many parameters been so great: The degree of contrast between kindness and cruelty; between understanding and stonewalling; between poverty and riches; between integrity and larceny; between sacrifice and greed; between propriety and porn; between compassion and ego; between wisdom and stupidity. The normal distributions of these quantities has been broken in two. We have become two spiritual species living in the same bodies. And by this is meant that the bimodality is within each of us.

Whereas a normal distribution is stable, a bimodal distribution is ephemeral. We are poised at a point in time when our selection will be to take a path leading to the triumph of one of the modes and the destruction of the other; or to take a path that unwittingly will lead to the extinction of all; or to surrender to an emergence that will lead us to a new world. If habit is followed we will subscribe to continuation of our polarizations, to a Zarathustrian struggle between the conflicting modes, whatever be their protean guises.

The next four weeks may be the most critical of our lives, although this may not be seen in hindsight for decades. It is a critical time for us to dedicate ourselves to the traditional sacraments of Advent: To Stillness, to Silence, to Peace, and to Love. Let us follow the paths symbolized by the four Advent saints:

The path of St. Andrew, commitment and courage–even to martyrdom

The path of St. Nicholas, charity and compassion –even to poverty

The path of St. Lucia, persistence and patience –even when there is no hope

The path of St. Thomas, through doubt and darkness–even to emergence of the Light

And our path, to continue–even beyond.

Avcoin Light 12 pt.

SCHILD01.WPD DECEMBER 1, 2000

THE SCHWARZSCHILD BOUND

The Schwarzschild bound, $M/R = c^2/G$, may be derived in four basic ways:

1) Balance of forces $GM^2/R^2 = c^4/G \implies M/R = c^2/G$
The contractive gravitational force balancing the expansive space force

2) Equipartition of energy $GM^2/R = Mc^2 \implies M/R = c^2/G$
The gravitational energy equal the rest energy

3) Frequency resonance $R^3/GM = R^2/c^2 \implies M/R = c^2/G$
The Kepler density time equal to the motion time

4) Equality of radii $GM/c^2 = R \implies M/R = c^2/G$
The gravitational radius equal to the geometric radius

All of these equations state that an object in the first quadrant will expand, actually accelerate; an object in the second quadrant will acceleratingly contract; an object on the bound will either be stable or expand at a constant rate or contract at a constant rate.
In addition to the above four, the criteria may be formulated in terms of a critical density

$\rho_c = H_o^2/G$ where H_o is the Hubble parameter and $\rho_c = M/R^3$

Five basic frequencies [or times] when equated [at resonance] give us the axes defining the basic octants. The basic times are:
1) $t = R/c$, 2) $\tau = (G\rho)^{-1/2}$, 3) $T = GM/c^3$, 4) $Z = \hbar/Mc^2$, 5) $B = \hbar R/GM^2$

1) = 2) gives the Schwarzschild bound
1) = 3) gives the Schwarzschild bound
1) = 4) gives the Heisenberg bound
1) = 5) gives the $M = m_o$ axis
2) = 3) gives the Schwarzschild bound
2) = 4) gives $MR^3 = G\hbar^2/c^4$ [6]
2) = 5) gives $M^3R = \hbar^2/G$ [7]
3) = 4) gives the $M = m_o$ axis
3) = 5) gives $M^3/R = \hbar c^3/G^2$ [8]
4) = 5) gives the Schwarzschild bound

[6] x [7] gives $MR = \hbar/c$, the Heisenberg bound
[6]/[7] gives the Schwarzschild bound
[6] x [8] gives $M^4R^2 = \hbar^3/Gc$ {9}
[6]/[8] gives $R^4/M^2 = G^3\hbar/c^7$ {10}
[7] x [8] gives the $M = m_o$ axis
[7]/[8] gives the $R = l_o$ axis

{9} x {10} gives [6]
{9} / {10} gives [8]

All axes, including [6],...{10} pass through the Planck particle as origin.

BIONOTE2.WPD February 25, 2000 rev DECEMBER 2, 2000

THE DISTAFF SIDE

At no time do I want to give the impression that the influence and inspiration of my mother, grandmothers, and a special aunt was less in my life than those of my father, grandfather, and uncles. (Sadly, I never knew my mother's father. He died when she was twelve). These four women were exceptional and remarkable each in ~~their~~ her own way.

Dad's mother was an entrepreneur in an age when women were restricted to being homemakers and teachers. About 1885 She opened a dress shop on Alamo Square in San Antonio, and developed a very successful business. She imported the latest patterns from Paris and with the help of hired seamstresses (she was a top seamstress herself) supplied the elite with the latest fashions.

My mother's mother, was early widowed but set an example of courage, persistence, and devotion for succeeding generations of single mothers. She raised one stepson, two daughters and another son. She was more than a gardener, but not quite a full fledged farmer. Her image was that of those pioneer women whose vision and strength would be awesome to us today.

My mother lived only at the dawn of the age of acceptance of women for their own talents. She was a writer who finally found a modestly paying market for her contributions in various departments of the Denver Post. She pioneered what today would be a woman's column. She and some friends organized a club to study on their own what today has become part of the standard liberal arts curriculum in graduate school.

And I must add my Dad's sister, Aunt Belle. She was an inspiration for learning everything that one could. Her interests spanned the worlds of art, history, and diverse cultures. She specialized in the cultures of Mexico and Japan. I recall she told me that some day I must earn a PhD. A must! I had no idea what a PhD was, but I followed orders.

All of these women of my early life helped me to discover who I was as much as did the patriarchs. I cannot appreciate enough the blessings they were and still are to my life.

BRAHMABR.WPD DECEMBER 6, 2000

BRAHMAN

When Brahma created the universe, Brahma posited Brahman, the Theme upon which all subsequent creation was to be based. Brahma knew the Alpha, the beginning and Omega, the ending of the Theme. But what Brahma did not know, and why he made Brahman, was to find out all the possible variations that could occur within the Theme. When the Theme and all the occurring variations have been played, then Brahma will create a new Theme. And on and endlessly on.

We observe, experience, and create variations on Brahma's Theme, but we only have glimpses of the Theme itself. Mostly the glimpses come to us when we encounter a limit or a boundary. These limits tell us what can and cannot exist within the Theme. From our customary way of organizing experience, we are most likely to interpret the Theme in terms of vector–like elements and the rules by which they are to be combined. Where by **vector** is meant an element possessing both a magnitude [scale] and a direction [dimensionality].

Physics suggests that a probable set of elemental vectors would include:
$\hbar$, Planck's constant; **G**, Newton' gravitational constant; **c**, the velocity of light; and **S**, the electric/gravitation force ratio. The dimensionalities of these are:
$[\hbar] = [MR^2/T]$; $[G] = [R^3/MT^2]$; $[c] = [R/T]$; $[S] = [1]$ (i.e. dimensionless)
{Refinements may require the inclusion of α, the fine structure constant, and μ the proton/electron mass ratio. Both are dimensionless.)

Two limits are held to be valid:[1]
1) The Einstein limit: All velocities are less than the velocity of light, $v \leq c$
2) The Heisenberg limit: The product of time and energy must be greater than the Planck constant. $E \times T > \hbar$ Or the product of momentum and position must be greater than the Planck constant. This is at root the "uncertainty principle".

From the Einstein limit may be derived two other limits: (numerical values are $\log_{10}$)
Force: The maximum possible force has the value c^4/G $[MR/T^2] = 49.082989$ dynes
Power: The maximum possible power has the value c^5/G $[MR^2/T^3] = 59.559810$ watts[2]
These are predicated on the presumption that all velocities are $< c$, but may be formally derived. From 2) and the power limit, c^5/G, may be derived $T > \sqrt{(\hbar G/c^5)} = -43.268366$ seconds, which is the Planck time. Or for frequencies, $\nu < 43.268366$ hertz

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[1]Also there is the Schwarzschild bound: $M/R = c^2/G$, more a watershed than a limit.

[2] The peak bolometric luminosities of supernovae have been observed to have a value close to this amount.

ELECTREM.WPD DECEMBER 15, 2000

See also ~~1997 #74~~ 2000 #71

ELECTION NOTES

Philosophical Note:
The more that goes on in these ballot fights , the more I am persuaded of the wisdom of Confucius. He maintained that anyone who wanted political office should automatically be disqualified.

Historical Note:
In is interesting that whenever a presidential candidate is a descendant of a previous president, there is an electoral crisis. In 1824, Andrew Jackson had the largest popular vote, but three other candidates including John Quincy Adams, the son of the second president, John Adams, divided the electoral vote so that no one had a majority. The House of Representatives gave it to Adams. In 1888 President Grover Cleveland had the largest popular vote, but a third candidate in the contest resulted in Benjamin Harrison, the grandson of William Henry Harrison, the ninth president, winning the electoral vote. In 2000 Al Gore won the popular vote, but George W Bush, the son of George Herbert Walker Bush, the 41st president won in the electoral college. [Or more accurately, won in the 5-4 decisions of the Supreme Court.] The electoral winner in each case was a descendant. The popular winner, the loser. It seems the majority votes against dynasties, while the political system supports them. And in all three cases a third contender catalyzed the outcome. A Henry Clay, a James Weaver, a Ralph Nadar. [This note does not say that if an electoral crisis occurred then a descendant of a president is involved. It says that if a descendant of a president is involved then an electoral crisis occurred. Beside the three crises involving descendants, two other anomalous elections occurred. In 1800 Jefferson and Burr both received the same number of electoral votes. The congress picked Jefferson. In 1876 Tilden won the popular count, Hayes the electoral count.]

"The longer this continues to play out, the less legitimacy the winning candidate will have"
–Leon Panetta 00/12/09

"This election should be determined by a careful examination of the votes of Florida's citizens, and not by strategies extraneous to the voting process". –Florida Supreme Court

"Preventing the recount from being completed will inevitably cast a cloud on the legitimacy of the election" –United States Supreme Court Justice John Paul Stevens.

"Although we may never know with complete certainty the identity of the winner of this year's presidential election, the identity of the loser is perfectly clear. It is the nations's confidence in the judge as the impartial guardian of the law. The courts action can only lend credence to the most cynical appraisal of the work of judges throughout the land". –Justice John Paul Stevens

ELECVOLT.WPD February 20, 2000 rev JANUARY 18, 2001

ELECTRON VOLT UNIT CONVERSIONS

The electron volt has become popular among particle physicists as a unit to measure many things. Although the electron volt is basically a unit of energy,[1] it is also used to measure mass, frequency, wavelength, and other physical parameters. Energy can be used as a basic measure whenever one other physical parameter, such as mass or frequency, can be dimensionally equated to energy through the fundamental constants, c, G, and/or $\hbar$. That is,

$$E^n = \text{function}(M, \text{ or } \nu, \text{ or } \lambda, \text{ etc; } c, G, \hbar)$$

where n is some power of the energy, E. For example, the relation between energy and mass, $M = E/c^2$; or between energy and frequency, $\nu = E/\hbar$; or energy and wavelength, $\lambda = \hbar c/E$.

ENERGY CONVERSIONS:

As a unit of energy, one electron volt = $1.602\ 137\ 33 \times 10^{-12}$ ergs or $1.602\ 137\ 33 \times 10^{-19}$ joules

When expressed as logarithms base 10,

a) one ev = -11.795300260 ergs = -18.795300 joules
b) one Mev = 10^6 ev = -5.795300260 ergs = -12.795300 joules
c) one Gev = 10^9 ev = -2.795300260 ergs = -9.795300 joules

To convert:

Energy in electron volts to ergs: subtract 11.7953; ergs to joules: subtract 7
Energy in mev to ergs subtract 5.7953
Energy in Gev to ergs subtract 2.7953
Energy in ergs to electron volts: add 11.7953
Energy in ergs to mev: add 5.7953
Energy in ergs to Gev: add 2.7953

For example, the energy of the Planck Particle is 16.291442 ergs.(value in $\log_{10}$)

$16.291442 + 2.795300260 = 19.086742$ Gev

(Planck in ergs) + (Gevs/erg) = (Planck in Gevs)

ENERGY TO FREQUENCY:

In using electron volts as a measure of frequency, the convention is to obtain frequency from the equation $\nu = E/\hbar$, where E is the energy in ergs, ν is the frequency in hertz, and $\hbar$ is Planck's constant.

Add 15.181624 to the energy in electron volts to obtain the frequency in hertz
Add 21.181624 to mev to get frequency in hertz
Add 24.181624 to Gev to get frequency in hertz

---

[1] The electron volt is the amount of work required to move a unit charge through a potential difference of one volt. Among other units used to measure energy are the erg, the joule, the calorie, the BTU, and the kilowatt-hour.

ENERGY TO MASS:

In using electron volts as a measure of mass, the convention is to obtain mass from the mass-energy relation $m = E/c^2$, where E is the energy in ergs, m the mass in grams, and c is the velocity of light.

The mass in grams = the energy in electron volts –32.748941
The mass in grams = the energy in mev –26.748941
The mass in grams = the energy in Gev –23.748941

ENERGY TO WAVELENGTH:

In using electron volts as a measure of wavelength, the convention is to obtain wavelength from the relation, $\lambda = \hbar c/E$, where E is the energy in ergs, λ the wavelength in centimeters, c is the velocity of light, and $\hbar$ is Planck's constant.

The wavelength in centimeters = –(the energy in electron volts + 4.704802)
The wavelength in centimeters = –(the energy in mev + 10.704802)
The wavelength in centimeters = –(the energy in Gev + 13.704802)

ENERGY TO TEMPERATURE:

One GeV = 1.1604×10^{13} K ; log +13.064608 K

ENERGY TO POWER:

One $GeV^2 = 2.4341 \times 10^{21}$ ergs/sec log +21.386338 watts

ENERGY TO MASS DENSITY:

One $GeV^4 = 2.3201 \times 10^{17}$ g/cm^3 log +17.365467 g/cm^3

Energy to Power

$v = \frac{E}{\hbar}$

$P = \frac{E}{t} = E \cdot v = \frac{E^2}{\hbar}$

$(GeV)^2$ -2.795300
-5.590600
$\hbar$ -26.976924
$+21.386324$ watts

e.g. E 19.086742
2
38.173484
21.386324
59.559808

Energy to Mass Density

$\rho = \frac{M}{L^3}$, $M = \frac{E}{c^2}$

$L = \frac{\hbar c}{c}$

$\rho = \frac{E^4}{\hbar^3 c^5}$

$E^4 = -11.181200$
$\hbar^3 c^5 = -28.546467$
$+17.365467$

e.g. E 19.086742
4
76.346968
17.365467
93.712435

5

ENERGY TO MASS:

In using electron volts as a measure of mass, the convention is to obtain mass from the mass-energy relation $m = E/c^2$, where E is the energy in ergs, m the mass in grams, and c is the velocity of light.

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One $GeV^4 = 2.3201 \times 10^{17}$ g/cm^3 log +17.365507 g/cm^3

Energy to Power

$\nu = \frac{E}{\hbar}$

$P = \frac{E}{t} = E \cdot \nu = \frac{E^2}{\hbar}$

e.g. P 19.086742 → 2 → 38.173484 + 21.386324 = 59.559808

$(GEV)^2$ 2.795300 → 2 → −5.590600 + $\hbar$ −26.976924 + 21.386324 watts

Energy to Mass Density

$\rho = \frac{M}{L^3}$, $M = \frac{E}{c^2}$

$L = \frac{\hbar c}{E}$

$\rho = \frac{E^4}{\hbar^3 c^5}$

$E^4 = -11.181200$
$\hbar^3 c^5 = -28.546667$
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e.g. P 19.086742 → 4 → 76.346968 + 17.365467 = 93.712435

TYPOLOGY.WPD DECEMBER 8, 2000

cf. 1991 #18 Thompson
1993 #10 Robber Barons
1997 #14 Quadrics
1996 #47 roles

TYPOLOGIES

Typologies are for psychology what cosmological models are for astrophysics. And in the 20th century there have been a plethora of both. It is not a matter of their being correct, but of their being useful. That is, not their being an edifice of comprehensive validity, but their being a scaffold useful in the construction of a better edifice.

Typologies go back to ancient times, with gods and mythic figures representing psychological attributes. One ancient typology had the four types: phlegmatic, sanguine, caloric, and melancholic. Although Rudolf Steiner resurrected this typology, the first modern typology may be attributed to Carl Jung, with his discriminations of introvert and extrovert; perception differences of sensation and intuition; judgemental differences of thinking and feeling. There are some strong parallels between Jung's four types and the four ancient Hindu yogas. Hatha yoga~sensation, Raja yoga~intuition, Jnana yoga~thinking, and Bhakti yoga~feeling. [But there is also Karma yoga, the yoga of service and sacrifice.] Subsequently, Marie von Franz and Myers-Briggs, and others contributed refinements to Jung's typology. And more recently a novel typology based on the eneagram has appeared. .

In addition to the purely psychological typologies there are the psycho-social typologies. Laurens Van der Post, notes the structure of a Kalahiri bushman hunting party: The chief, the hunter, the shaman, and the clown. These are translations of the thinking, the sensation, the intuitive, and the feeling into social roles. Such a fourfold organization also has certain resemblances to the meso-American social structure architecturally manifested at Mayan sites such as Uxmal in Yucatan. The courts of the Prince, the Warriors, the Priests, and the merchants. And this has parallels with the Hindu caste system: Brahmans~the priests, Kshatriya~the rulers, Vaishyas~merchants, and Sudras~workers. We see a modern foursome in California's infamous "Robber Barons." Leland Standford, the shrewd lawyer; Mark Hopkins, the clever accountant; Charles Crocker, the organizational wizard; and Collis Huntington, the wheeler dealer par excellence. This team had the talents and balance to accomplish everything they had a mind to. And our present social organization is also fourfold: The White House, Congress, and Courts~ the prince; the Pentagon~ the warriors; Technology~the priests; and the Corporations~the merchants.

And now appears another psycho-social typology: William Irwin Thompson, in his book, "The Imaginary Landscape" interjects the Matanoids~the whole viewers; the Paranoids~the fundamentalists; the Noetics~the framework builders; and the Noisies, the activists. It is not at all clear whether it is possible to map Thompson's typology onto Jung's, but at least it has in common with the others what seems to be the quintessence of all typologies: the number four.

William Irwin Thompson 1991 #108

Starting ab initio, ignoring the Hindus, the Mayans, Kalahiri Bushmen, Steiner, Jung and Thompson, I want to see what I might come up with. Remember a typology is neither right nor wrong, just useful or useless.

Consider 4 (there's that number again) dyads:

Change vs. Stasis	[C,S]
Vision vs. No-vision, unimaginative	[V,U]
Passive vs. Risk taking and activist	[P,R]
Ego or Self centered vs. Larger identification	[E,L]

I wish to characterize people using these 4 dyads, (as Jung did with thinking, feeling, sensation, intuition)

The first category, and far the most numerous, is the category of *sheep,* who need leaders and gods and adulate heros and celebrities. These are followers. They are passive, need to be protected, lack imagination, and fear change. Therefore [S,U,P,X] X means they may range from self centered to group centered.

The second category is the *shepherds*, who need sheep as balm for their egos. These are unimaginative leaders, who avoid risk and also dislike change. They usually have strong egos. Therefore [S,U,P,E] So there seems to be little difference between shepherds and sheep except in ego. Sheep are children, pupils, privates; Shepherds are parents, teachers, officers.

The third category is the *fundamentalists*, who are the custodians of stasis. These people are generally unimaginative, opposed to risk, and as with sheep vary in ego, but in having limited identification (usually to a single dogma) must be rated [E]. Therefore again [S,U,P,E]. Does this mean that our teachers and some professions like lawyers are in some sense fundamentalists? So far it appears that our shepherds are likely to be fundamentalist sheep.

Fourth, the *rebels*. These are the people that demand change, think they have vision, but really don't, are willing to take high risks, and have overwhelming egos. The change they espouse is usually no change only my replacing you. Therefore [C,U,R,E] (which may be needed, but which won't come from the rebels)..

Fifth, the architects. These are the people with vision and imagination, who invent, discover, and innovate. They naturally support change, but are rarely activists. These are the philosophers, the founders of new schools, the creators of new theories and designers of new methods. There self esteem is usually high. Therefore [C,V,P,E] cf. Thompson framework builders noetica

Sixth, the *brick layers*. These have imagination, skills, are inventive, but in a minor way. They construct the edifice that the architect has laid out. Change is their profession and risk is natural to them. These are the scientists, the artists, the entrepreneurs of new instances of what has already been done. They are the ones who push the envelope. Therefore [C,V,R,E]

Seventh, the *lone wolves*. This is a most rare breed. These are those who are ahead of their time, change plus!, they may be iconoclasts, but that is only a side effect. Although they always appear to be going against the tide, they are not dedicated to the destruction or taking over of the existing order, as are the rebels. They are for finding alternatives and fabricating hitherto unknown systems and orders. They are not interested in having a following or in establishing a lineage. They differ from the architects in that both their thinking and their goals are outside the box. As for risk taking, these are the ones who get burned at the stake, exiled, ridiculed, declared to be mad. Therefore [C+,V+,R+,E+] where E+ means self sufficient plus. Thompson's "Whole Viewers" "An eagle follows no trail, leaves no track" Metanoids

Eighth, the *mystics*. This group is as rare as the lone wolves. But while they may resemble the lone wolf with regard to change, vision, risk, they differ totally in that their identification is with the transcendent. The lone wolf is like the Theravaden, seeking his own enlightenment. The mystic is Mahayana, seeking an alternative for all sentient beings. Therefore [C+,V+,R+,L+]

In reviewing these eight groups, the important question arises as to which groups are intrinsically directed toward homogenization and which toward creation of diversity. It would appear that the sheep are already homogenized, the shepherds keep them homogenized. The fundamentalists are the homogenization police. The rebels may create multiplicity, but not diversity. And certain rebels are the most radical monopolists. The architects are definitely creators of diversity, but paradoxically, the brick layers are not. The lone wolves are diversity plus, and the mystics seem paradoxically to move simultaneously toward diversity and oneness.

We ended this exercise with eight types, (8 = 2 x 4 for those who have forgotten) but the dyads seemed to be wrong. For example the [C,S] and the [P,R] seem to overlap considerably and should be replaced by something that subsumes both. Vision and imagination are important attributes and do not seem to overlap any of Jung's qualities. The ego-identification spectrum is basic, but location in the spectrum seems to be more alterable than fixed. This suggests two levels of attributes, the alterable and the hard wired, the software and the hardware. Maybe that will ultimately account for eight instead of four. [But Jung's extrovert | introvert also leads to eight] Now back to the drawing boards. Keep up the search for alternatives! It's only a scaffold.

Thompson: Seeing, thinking with the big picture, "the whole viewers"
≠ Identifying with the "big picture"
How big is your picture?

Intuition ≠ Imagination
What is what could be

Intuition is related to recognition
ways of knowing

≠ Perception and Sensory
Localized

With rebels polarization is more important than cause
or issue
whenever there is resolution, they create a new polarization

∃ an interesting polarization: A part-whole polarization e.g. economy - ecology
cf. contain and
Each profession has a different way of thinking
e.g. lawyers, scientists,

→ See 1993 # 16
1996 # 47, 53
1996 # 9
→ 1996 #47

~~COGREFOM~~.WPD DRAFT DECEMBER 13, 2000
NOVCOGN.

NOVO COGNITIO
TOWARD COGNITIVE EMERGENCE

We Shall Require a Substantially New Manner
Of Thinking If Mankind Is to Survive.
– Einstein

In company with Einstein there are many 20th Century scientists, philosophers, authors, and theologians who have called for a re-examination of the basic canons of Western thought. And currently entrepreneurs and industrialists are putting a premium on those who "can think outside the box". What this says is, that in spite of the many successful theories and models that have been created using the cognitive tools of Aristotle, Descartes, Bacon, and Newton, we have not become the kind of architects who can successfully design holistic and coherent structures that validly accord with the totality of our experience. Among the disciplines into which we compartmentalize our knowledge and methodologies, science has arguably been the most successful, and many have felt willing to delegate all enquiry to the methodology of science. But in the past half century science itself has demonstrated the limits of its methodology and scientists have become prominent among those who are calling for new ways of thinking. .

Thinking in the box for ways to think outside the box may get us nowhere, but that being where we are, that is where we must begin. So an "in the box" approach following traditional thinking patterns is our immediately available launch pad. How do we organize our thinking processes? Perhaps by sequential steps.

COGNITIVE STEPS:

I. Data Collection
  - Involves input channels, [duplexing?]
    - Perception [sensory], Intuition, Recognition, Synchronicity
  - Involves conceptualization

II Data Organization
  - Involves infrastructures or paradigms
  - Involves filtering and signification

III Data Processing
  - Involves reconceptualization
  - Involves representation
  - Involves aggregation and de-aggregation

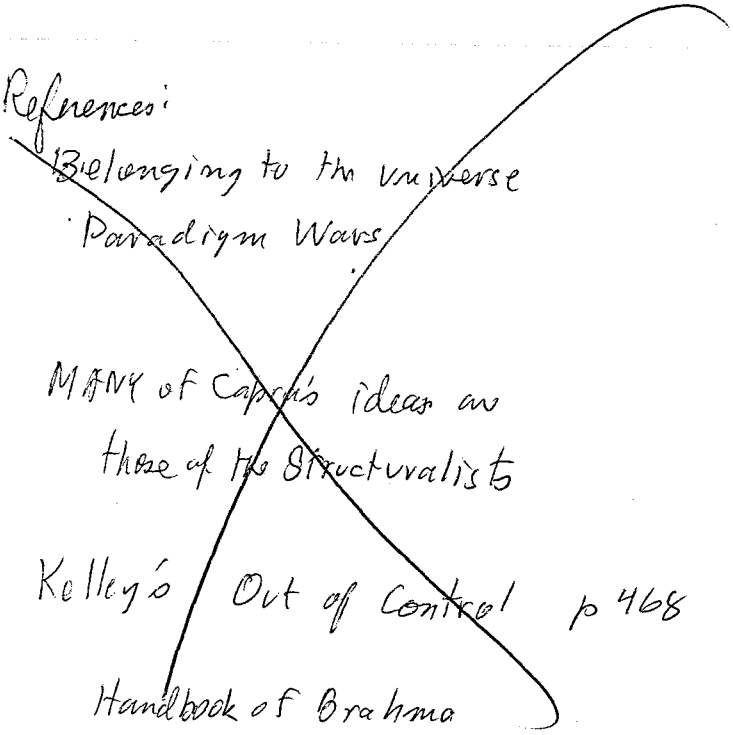
IV Interpretation of 'packages', concepts and theories

V Evaluation and Implications of the 'packages'

References:

Belonging to the universe

Paradigm Wars



See Kelly's Out of Control p 468

See Handbook of Brahma

First, what are our traditional cognitive 'channels'? Where by a channel is meant the mode of data input separate from the mode of data processing. [if mode of input and mode of processing can be separated] We are aware of four cognitive channels. 1) the sensory channel, 2) the intuitive channel, the 3) the recognition channel, and 4) the synchronicity channel. ~ Serendipity

SOME WESTERN PROPOSALS

Listed here are some suggestions for alternative ways of thinking about ourselves and the world that have been proposed by thinkers from different disciplines.

Fritjof Capra in his book, "Belonging to the Universe", focuses on **new paradigms** for the coming century:

Fritz Zwicky in the book, "New Methods of Thought and Procedure", develops a system he terms, "Morphological Thinking", which focuses on both processing and paradigms.

Lancelot Law Whyte focuses on the paradigm of "Pattern"

Paul Feyerabend focuses on alternatives and the dangers of dogma, and of ignoring or denying phenomena that do not fit with current theories.

William Irwin Thompson has experiments with the technique of "juxtaposition" in which phenomena with no apparent relation to each other are exposed to a "mutual dialogue" with one another to see what emerges.

Carl Jung considers that the phenomenon he calls synchronicity puts current views of induction and probability into question.. White noise modulated by white noise results in a gaussian, and iteration results in ever decreasing dispersions. These require a new look at randomness and probability.

Ralph Gerard calls for depackaging and re-entifying our experiences. Take it all apart and put it together in different ways. The non-localism of quantum mechanics affirms Gerard's call for the need to re-entify.

Claude Levi-Strauss and other structuralists propose going beyond the cognitive habits of establishing commonalities and differences and study the "differences that resemble each other"'.

The reductionism of John Locke [the explanation lies in the interior] is to be balanced with the contextualism of Ernst Mach [the nature of each object is limited by the whole]. Where we feel the inside [content] is the essence we must examine the role of the outside [context]. Where we feel the context [outside] is the essence we must examine the role of the inside [content] . This includes placing the observer both inside and outside the system.

The ancient symbol of the Uroborus, the snake swallowing itself , what Hofstaedter calls a strange loop, what Blake remarked as "seeing a world in a grain of sand and a Heaven in a wild flower." materialized with the invention of the hologram. This and the knowledge from DNA of the mutual containment of genotype and phenotype all call for an entirely new way of looking at parts and wholes.

Multiple levels must be allowed. The insistence that all phenomenon must at root be of the same substance, matter, spirit, thought, whatever, is a very restrictive thinking box.

The current emphasis on the polarization aspects of dialectics must be replaced with emphasis on the opportunities for emergence.

Dogma must be replaced by alternatives, and even though many of the alternatives contain error, their multiplicity facilitates correction. A paraphrase of Gödel's incompleteness theorem would say that "What is perfect [dogma] cannot be complete, and what is complete cannot be perfect."

Perhaps the most important change in our way of thinking will be to abandon the concept of "Truth". Truth is a reference to some inaccessible whole, but experience is limited to parts, aspects, and facets. What we know may be valid, but its validity is limited in time and space, it is not universal.

SOME EASTERN ALTERNATIVES

The foregoing are all proposals by thinkers in the "Western Box". When we look at some of the traditional approaches of Eastern Thinkers, we see a different box.

Eastern ideas include a basic four fold logic instead of Aristotle's two fold logic, [Escape from the law of the excluded middle]. For example: 1) true, 2) false, 3) both true and false, 4) neither true nor false. In addition the juxtaposing of two dyads resulting in a four fold argument often resolves polarizations.

Eastern wisdom would also say that the West has ignored the importance of nothingness, and non-existence. There are many kinds of nothingness, and as many species of non-existence as of existence. Fractals and matroshka dolls both involve empty spaces, nothingnesses that intervene between somethingnesses. Is the emptyness really empty?

Finally, the epistemology of stillness and silence must receive a place in the new thinking. Both Kukai and Schopenhauer recognized the thought limitations of words, symbols, and images.

FOURONES.WPD February 2, 2000, rev December 18, 2000, rev February 12, 2007

FOUR MEANINGS OF ONE

All symbols are ambiguous. Semiotic representations –f lags, seals, coats of arms, logos, signs–carry many meanings, sometimes conflicting ones. Even words, our most useful representations, are loaded with equivocal or multiple meanings. It was not the Vienna Circle, but Humpty Dumpty who got it right, when he claimed that "a word means just what I choose it to mean, nothing more, nothing less." We cannot begin to communicate or understand one another unless we use the same "code book" to tell us which meaning a given symbol is supposed to have in each context. All of this is true, BUT when it comes to numbers, Ah, there we have precision, no ambiguities about meaning, one means one, two means two, 108 means 108. Everybody has the same code book. Even aliens on a remote galaxy must use the same numerical code book that we use. Else why would we send messages into space giving the prime numbers in their order unless we knew they would get the message that on Earth there is an intelligent species that also possesses the universal number code book. But are numbers really immune to the ambiguities that plagues other symbols? Consider the number, **one**. What does our code book say that **one** means? Let's see:

I) THE ONE THAT IS NOTHING

When **one** is used to represent nothingness, **one** takes on the value **zero.**[1]

Centuries before Nagarjuna in India invented the symbol "0", **zero**, to represent nothing (He required a symbol to formalize his world view that ultimate reality is nothingness), Pythagoras had recognized the need for a symbol for nothing. He came to the conclusion that since everything we experienced was multiple that multiplicity was a necessary condition for existence.[2] One of anything by itself could not exist. So Pythagoras proposed using **one** as the symbol for non-existence, i.e. nothingness. This theme was picked up in the 20th century by the astronomer-physicist Sir Arthur Eddington. He summarized the idea by stating: "Uniform sameness or oneness is philosophically indistinguishable from non-existence"[3]. Pythagoras and Eddington do have a point. A parameter that takes on only one value does not exist as a parameter. If there were but one color, we would not have conceptualized color; if there were but one temperature, we would not have a parameter called temperature.

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[1] Not only can one represent nothing, but zero can sometimes represent one. Even in conventional mathematics there is some cross dressing between zero and one. for example, $0^0 = 1$ and $0! = 1$; if $\log_b 1 = 0$, $b^0 = 1$, where b can be any number

[2] We can ask, do zero and one form a pair that provides the multiplicity Pythagoras requires for existence?

II) THE ONE THAT IS ONE

Sometimes, in fact most of the time, **one** takes on the value **"1"**. In this role one is the unit of counting. It is used to generate all the other integers. It has the additive property 1 + 1 = 2, and with the help of "plus" can go on and on. Hence **1** is an essential ingredient in the creation of diversity. **1** is also a cloning operator. 1 x A = A, making a clone of any A. Hence **1** is an essential ingredient in effecting multiplicity.

III) THE ONE THAT IS EVERYTHING

Sometimes **one** represents the **infinite.**. The **"un"** in universe stands for both one and everything. That is, **one** can stand for the whole of anything,[3] and if the whole is infinite, then **one** represents everything. In Part I) one was the symbol for nothing. Now in Part III) one is the symbol for everything. Now, the reciprocal of everything [∞] is nothing [0]. Which is to say that **1** is the "fulcrum" that balances everything and nothing, the verge where somethingness meets nothingness. It is fulcrum of the large and the small 5,000 / 1 vs. 1/ 5,000 = 0.0002 ; and the fulcrum of the outer and the inner.

IV) THE ONE THAT IS ANY NUMBER

The mathematician Euler proved that **one** may be written as $e^{2n\pi i}$. In his equation, $e^{2n\pi i} = \mathbf{1}$, n can be any positive or negative integer (or even zero). Hence **1** contains all the integers. This may be viewed as a sub-case of **III)** since all the integers constitute an infinite set, but an infinity that is less than the universe. It may also be viewed as **1**'s repayment for having had to generate the natural numbers in the first place.

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[3] Not only the Latin **UN** , as in universe, but the Greek **MON** as in monopoly or monotheism represent a whole, or species of everything.

88

THE EVOLUTION OF TECHNOLOGY

See also 2001 #97

Whether technological evolution follows the same evolutionary principles that govern biological evolution is an open question. While with life forms, natural selection operates in the mode of mutual causality with the environment, this does not appear to be the case with technology. There is strong evidence for causality in the direction of technology modifying the cultural environment, but in spite of the old adage, "Necessity is the mother of invention", there is less evidence of causality in the direction of the cultural environment guiding technological selection. Technological innovation seems to be guided by other forces.

One of the forces apparently governing innovation is Ozbekian's Law, which states that if humans have the capability to do something, they will do it. If we know how to make a nuclear bomb we will make one. If we know how to clone humans we will clone them. Ozbekian's Law weakens the role of the cultural environment, [which includes societal wisdom], in directing what is selected to be implemented technologically. Without the corrective feedback of societal values, can-do directed technology creates dysfunctional cultural environments. Even the economic forces of the market place are disrupted by "can do, will do" innovations. In view of this causal imbalance in technological evolution, social necessities have received reduced priorities in the laboratories of technological innovation. So called "pure science", the extension of human knowledge, is not to be blamed. It is the unconsidered translations of such knowledge into technological incarnations that need to be filtered.

Another factor in the evolutionary imbalance of technological innovation is in the distribution of decision making powers. First, as noted above, the decision to implement a technology is with the innovators [developers], not with representatives of society. Second, society's decision makers, their so-called representatives, have joined the cult of "you must not obstruct technological progress". But for the most part these 'representatives' have no understanding of technology nor how or when to apply it. With these interacting combinations of egos and ignorance we are losing over a few decades the advantages that we have acquired over millennia of biological evolution.

Θανατος

Upon death, we become free to be. This is a state so overwhelming that we quickly seek refuge in rebirth. Just as the world cannot exist without Brahman, personally we cannot exist without constraints. But a finite being cannot survive under full exposure to the constraints of Brahman, hence must find more restricted constraints. Thus it becomes important in life to prepare constraints to take with us into death. Indeed, this is the most important single activity in the preparation for death.

Our existence in life [P-SPACE] has taught and conditioned us for constraints through living within constraints. In preparing constraints for death perhaps it is wise to design constraints that are minor variations on those experienced in life. It must be recognized, however that there is a trade-off: whenever freedom within the limits of one parameter is extended, the bounds of another parameter must be contracted. The only emergence from this "meta-constraint" is through the creation of some new parameter. [And for a parameter to exist, it must possess two or more values.]

If we were to choose non-spatial localization, or opt for protean forms [H-SPACE], we would have to reduce the limits in some other parameter, such as temporal duration. Or if we were to choose non-temporal localization, we would have to delimit other parameters. This leads us to enquire what are the parameters that define our existence and the ranges over which their values extend. This is a task for our present lifetimes.

THANATOS.WPD 00/12/22

2000#89

PYTHCOSM.WPD DECEMBER 22, 2000

PYTHAGOREAN COSMOLOGY

Ultimate reality is number –Pythagoras

The "*Pythagorean*" approach to cosmology is predicated on the existence of a template that prescribes and proscribes what can and cannot physically exist. While the template tells what can and cannot be, it does not specify what actually is or will be. What is actualized, [reality], is but a sub-set of the set of what is possible. In this sense, the template bears the same relation to the actual cosmos that mathematics does to physics or in a general sense that software does to hardware. Moreover, this template not only describes the bounds or eigen-values of existence, but what processes and forces can or cannot exist. That is, it speaks both to **being** and to **becoming**.

> What is the Pythagorean power with which number holds sway above the flux?
> —Bertrand Russell

In the Pythagorean approach the values of fundamental constants, such as G, c, and h, are assumed to be constants and are taken as a basic part of the template, number itself being the ur-basis of the template. [Hence, the label, *Pythagorean*.] However, there are several non-numerical supplementary assumptions regarding the structure of the template. These include certain symmetries between the "inside" and "outside" of every entity, especially the symmetry of mutual containment. In the outer order the whole [universe] contains all of the parts, while the inner of each part contains the entire outer order. [Similar to the phenotype containing all constituent cells and each cell containing the genotype of the phenotype.] [1] In addition it is assumed that the universal inner order contains a clock or zeitgeber that provides coherence among all entities. The inner order also contains a set of injunctions or a program that governs the changes taking place in and by each part.

One feature of the template approach is that it avoids the "horizon problem", how there can be coherence and uniformity without duplex communication. In all changes, entities follow built in injunctions rather than requiring exchanges such as the interaction of forces. Action at a distance is due to the each entity following its internal program. And this program is common to all entities, being updated through access to the shared or common internal template. The changes in the cosmos are thus like the coordinated movements of flocks of birds or schools of fish which depend on the internal programming of each entity rather than on explicit communication between them.

The fallacy in the Pythagorean approach is that our physical and mental processes, being conditioned by a particular limited set of experiences, are incapable of modeling such a template.
accepting

[1] The universe and all its parts is similar to what Bohm called the 'explicate order', and the common inner, the template, is like his 'implicate order'.

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[cf 2000#87]

THE FOUR KINDS OF ONENESS

In P-SPACE, the space of position, place, and movement, the space-time of the physicist, ONENESS becomes a **singularity**, concentration in a point, a black hole.

In H-SPACE, the space of form, shape, and metamorphosis, the space of Proteus, ONENESS becomes **sameness**, uniformity, mere multiplicity.

In B-SPACE, the space of links, bonds, and relationships, the space of the Zeus, ONENESS becomes **monopoly**, concentration of wealth, power, control.

In M-SPACE, the space of mystery, the unknown, the space of unlimited potentiality, ONENESS becomes **completeness**, wholeness, all inclusiveness.

And in each space the ONENESS becomes a NOTHINGNESS, but in each a different kind of nothingness. In P-SPACE, the nothingness of isolation; In H-SPACE, the nothingness of non-identity; In B-SPACE, the nothingness of extinction; In M-SPACE, the nothingness that is infinity.

THE FOUR KINDS OF NON-ONENESS

In P-SPACE, diffusion, expansion, non-localism

In H-SPACE, variety, diversity, uniqueness

In B-SPACE, multiple access, multiple options, choice

In M-SPACE, fragmentation

It seems that expansion is for the best in H and B spaces, and contraction is for the best in P and M spaces. Expansion in H-SPACE provides the variety requisite to complexity. Expansion in B-SPACE establishes a menu of alternatives and options. Contraction in P-SPACE leads to the formation of node or entities. Contraction in M-SPACE results in an organic wholeness.