SPACES

PERSPECTIVES OF SPACE

WHAT IS SPACE.....The Space of the Philosopher

SPACE-TIME.....The Space of the Physicist

GEOMETRIES, TOPOLOGIES.....The Spaces of the Mathematician

OUTER SPACE.....The Space of the Astronaut, Cosmonaut

INNER SPACE.....The Space of the Psychologist

LIVING SPACE.....The Space of the Architect

TEMENOS.....The Space of the Sage

NOTHINGNESS.....The Space of the Creator

For Time

(H)

J@YPRLG1.P51 DISK:JOURNYEAR02 May 2, 1991

THE FENG SHUI OF SPACE AND TIME

If we ask a physicist, does space have quality? He or she would probably not know what we meant, but would say that space has size and dimensions, attributes that we can measure, but space having quality? Does that mean anything?

If we ask an architect, does space have quality? He or she would probably say, that's how I make my living, shaping the quality of space. It is my job to make space as useful, beautiful, and interesting as possible.

Similarly with regard to time.

Ask a physicist, does time have quality? Again the reply would probably be, what do you mean by that? Time has duration and we can measure that, but quality?

Ask a musician, does time have quality? He or she would say that's how I make my living--organizing the qualities of time into pleasing, arousing, or quieting patterns.

The space and time of the physicist has only those attributes that can be measured by meter sticks and clocks. The space of the architect and the time of the musician also can be measured by meter sticks and clocks, but possess other qualities which can be experienced, felt, and described, but not measured.

Whitehead said that nothing can be experienced which does not recur and nothing can be measured which does not recur regularly. Since more recurs that recurs regularly, it follows that we can experience more than we can measure and that the world of the physicist is a restricted one.

. . . . . .

With the architect and the musician we experience quality in space and in time. The quality of space varies from place to place, and the quality of time varies from day to day. Each moment is not the same as every other moment, (except possibly to a ball rolling down an inclined plane). So what determines the quality of space and the quality of time? What are the tools the architect uses to shape the quality of space and the musician uses to shape the quality of time?

But prior to the architect shaping space, the earth has already shaped it, and prior to the musician shaping time, the earth and sky have already shaped it. The tools of the earth for shaping space are the distribution of matter and energy, the tools of the earth and sky for shaping time are light and rhythm, the beat of various drummers. These effect the basic feng shui of space and of time.

SPACSPEC
93#34
5/2/93

1993 #34

THE SPECIES OF SPACE

METRIC SPACES
- CURVATURE PARAMETER
  - K = 0 EUCLIDIAN OR FLAT SPACE
    - An "interface" space *
    - Has the property that form and scale are independent†
  - K ≠ 0 NON-EUCLIDIAN SPACES
    - Positive curvature: Closed spaces
    - Negative curvature: Open spaces
- DISTANCE & SEPARATION ∝ EXTENSION
- SCALE w FORM
- DIMENSION PARAMETER

PROJECTIVE SPACES

TOPOLOGICAL SPACES

HAMMING SPACES
- SIMILARITY SPACES
  - SEPARATION ∝ FORM DIFFERENCE
  - Form-metric dependence (not same as form-scale dependence)

COGNITION SPACES
- INFORMATION SPACES
- ENTITY w RELATION — VERTEX to EDGE

INTEGRITY SPACES
- TOTAL RELATIONAL MODULES [NODES]
  - No internally severed relations
    - GLOBAL
    - LOCAL

PARTIAL RELATIONAL MODULES
- ORGANISMS

SOLIPSISTIC MODULES
- No contexts

* Flat euclidian space, the space in which we physically exist, is an interface space between open and closed spaces. Being an interface it is not surprising that it is a breeding region for complex systems.

† In non-flat metric spaces form and size are not independent. There are no such things as similar triangles, for example, i.e. same shape different size. On a sphere of fixed radius the angles of an equilateral triangle depend on the size of the triangle.

OPTION SPACE

ON HAMMING TOTEMS

Since ancient times peoples have performed rituals and exchanged tokens to symbolize their bonding to one another. Rings are exchanged in marriage, leaves of the ginkgo tree are exchanged in sealing friendship, candles are given the newly baptized in recognition of their bonding to the church, American Indians made special 'totems' to express their intimate relation to the animal world . There evidently is some special link created through the possession of identical tokens among those who are bonded, or in possessing a totem identical in form to that animal from which one seeks special powers.

A possible infrastructure for this symbolization of bonding through mutual possession of identical tokens or totems was inadvertently supplied by ~~Robert~~ RICHARD Hamming while developing computer codes at Bell Labs. Hamming invented a new kind of space in which distance is measured by difference. The more dissimilar objects are, the greater their separation in 'hamming space'. The more similar, the closer their proximity to one another, and If two objects are identical then they occupy the exact same position in hamming space. Evidently something like hamming space, as well as ordinary physical space, plays an important role in our lives. Two people who are "in tune", even though they are separated by large distances in physical space, are in close proximity in hamming space. This is well symbolized by identical objects, though separated in physical space, bringing their neighborhoods together in hamming space.

If we keep in our respective homes items that are identical, then we remain intimately linked through hamming space. But this brings us to realization that in the age of mass production where we all possess identical plates, pans, telephones, cars, etc., we are crowded together in hamming space as well as in the cities in physical space. To preserve special linkages, our hamming totems must be both identical and unique. That is while the totems must be exact duplicates there must also be no other objects elsewhere like them. To ensure uniqueness, specially crafted duplicates are the answer. Mass production is out. We visualize separated members of a family, friends or lovers each having identical unique specially crafted hamming totems to support their bonding and togetherness.

RICHARD W. HAMMING

We are being homogenized in
H- Space by mass production

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]

HSPACE1.WPD JUNE 14, 2000

Ref 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."

EXPLORING SPACES

Having established the concept of SPACES as an alternative mode of entification, next in order is consideration of the relation between the SPACES. Is there primacy among the SPACES, events in one SPACE controling what happens in others? To what extent are the SPACES independent in what happens internally? Does independence and interaction fluctuate with time or is it always the same? These and other questions must be considered in independently between each pair of SPACES and in general among all SPACES.

SPACDIAL.WP6 April 10, 1998

DIALECTICS IN ALTERNATE SPACES

We recognize two kinds of dialectic:

The first type of dialectic consists of a dyad whose two components act simultaneously. The counter action of these opposing components continues until a state of equilibrium is reached.

In the second type of dialectic only one component acts at a time. The alternate action of the components results in growth, evolution, or emergence.

We tentatively postulate four spaces:

P-SPACE, the space of nodal positions; H-SPACE, the space of nodal forms and patterns, (information content of nodes); B-SPACE, the space of nodal interaction, internodal forces, traffic, and messages; S-SPACE, the space of selection, decision, choice.

The attraction/repulsion dialectic takes a different form in each space as in TABLE I.

SPACE\DIALECTIC	ATTRACTION/REPULSION	
P-SPACE	CONTRACTION/EXPANSION	Position
H-SPACE	HOMOGENIZATION/DIVERSIFICATION	Pattern
B-SPACE	CONSOLIDATION/FRAGMENTATION	Bonding
S-SPACE	SELECTION/OPTION	Selecting

TABLE I

In addition to **intra** linking within a space, there must be **inter** linking between spaces. The dialectic itself is one form of interspatial link.

P-SPACE:

Position or physical space, the space in which our sensory apparatus operates. This space can be viewed either as a three dimensional geometric space or as four dimensional space-time. Its properties are the basis of Aristotelian two valued logic and the law of the excluded middle. It is characterized by here and not here and now and not now. No two objects can occupy the same coordinates (place) at the same time and no single object can be at different places at the same time. [This is sort of a

generalized Pauli exclusion principle]. These interconnections of space and time coordinates indicate that the space and time axes are not orthogonal in the sense of being completely independent, contrary to their usual mathematical formulation. There are two kinds of distance in P-SPACE: extension in zones of non-zero density and separation in zones of zero density. Localization in P-SPACE means an object has a unique set of space-time coordinates. Non-localization means that an object occupies an extended space-time volume.

H-SPACE:
Hamming or morphological space, the space of archetypes, blueprints, templates, and recipes. This is a multidimensional space, having as many dimensions as the number of parameters required to describe a form or pattern. Distance between two objects in H-SPACE is a measure of their difference in form. Identical objects will have the same coordinates in H-SPACE. Unlike in P-SPACE, there is no limit to the number of objects that can have the same coordinates. The volume occupied by a set of points in H-SPACE is a measure of their variety. The smaller the volume, the more homogeneous the set. Whereas in P-SPACE a volume represents non-localization of a node or entity, in H-SPACE there is no corresponding interpretation of volume for a single entity. [Unless that entity is Proteus himself].

B-SPACE:
Bonding or control space, the space whose coordinates measure the degree and nature of the interaction between nodes or entities. Distance in B-SPACE is a measure of the degree of bonding between nodes or entities. The smaller the distances the stronger the forces of attraction and the more intimate the bonding. Depending on the number of points and their density, volumes occupied by a set of points in B-SPACE, from smaller to larger, will represent organisms, societies, institutions, or ecologies. Density is a measure of dependence. Increasing density signifies increasing interdependence, decreasing density signifies increasing independence. Also B-SPACE includes the nature of the communication channels between nodes. A channel may be broad band or narrow band, may range from laser or pencil like to omnidirectional or 4π like. Small volumes indicate narrow bands and beams, large volumes the opposite.

S-SPACE
Decision or selection space. Volume in S-SPACE is a measure of the number of options or alternatives that are available. Decision processes reduce the volume. A second feature of S-SPACE is the mode of selection: Random, deterministic (causalistic), teleological (finalistic), or contextual.

1998 #20

PYPLAPAN.WP6 APRIL 19, 1998

AN ALTERNATE ONTOLOGICAL VIEW THE PYTHAGORAS-PLATO-PAULI MODEL

1) Along with Pythagoras, we postulate that there must be at least two of anything in order for that thing to exist.

2) Along with Plato, since by 1) there must be at least two spaces, we postulate that in addition to the every day physical and position space, P-SPACE, in which our senses are imbedded, there is a second space whose dimensions and coordinates determine the form and pattern of things. This second space we shall call H-SPACE.

3) Along with Pauli, we postulate a General Exclusion Principle that maintains no two entities in the universe can have the same coordinates in all spaces. This means that there must be at least one space in which any two entities must have different coordinates. The inference of this principle is that every entity in the universe is unique.

There is a basic contradiction between Pythagoras' 'more than one to exist' and Pauli's general exclusion principle which says every thing in the universe is unique. This can only be resolved if we assume that Pythagoras requires a like pair in every SPACE. Pythagorean non-existence would state that unless there are two or more identical entities, E(1), in a SPACE S, E(1) does not exist in SPACE S. Pauli requires that if there are two or more identical entities in space S, then these entities must differ in some other space.

4) Along with Noether, we postulate a General Conservation Principle that preserves basic symmetries and equilibra within and between all SPACES.

The operation of the General Exclusion Principle is ubiquitously displayed in P-SPACE by the fact that two objects cannot occupy the same place at the same time, that is, cannot have the same space-time coordinates. This fact allows more than one entity to have the same coordinates in H-SPACE. Were it not for this, there could not be a multiplicity of entities with the same form.[1]

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[1]If the converse were true, P-SPACE and H-SPACE properties being interchanged, then no two objects could have the same form at the same time, but many objects of different form could simultaneously occupy the same place in P-SPACE.

There is nothing in the foregoing three postulates that forbids the existence of more than two spaces. Another space that seems needed in order to fully explain the phenomenal universe is a space whose coordinates indicate the strength of the bonds or forces acting between entities. We shall here designate this SPACE as B-SPACE.

Consider an example: Competition between organisms increases with the degree of similarity between the organisms. The more alike they are the more competitive, that is, the higher the density in H-SPACE the greater the repelling force in B-SPACE. Contraction in H-SPACE leads to expansion or fragmentation in B-SPACE.

These examples show that there are relations between the internal happenings and conditions in one SPACE and what happens or is possible in another SPACE.

$$E^{R}_{n_1 \ldots n_k}(i \ldots t)$$

Is competition a bond?

To get 2, symmetry

1999 # 5

GENCODE.WPD January 31, 1999

THE GENERAL GENOME

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

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

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

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

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

Our first postulate implies that [gg] exists. However, this existence is a meta-existence {on the Brahman ~~or SAT~~ level } not on the level covered by the E-set. Whereas we can locate the bio genome in chromosomes, there is no known physical location for the non-bio portions of the [gg]. With regard to the specific contents of the E,H,P,L sub-sets, we ask, must information be inscribed in a material matrix such as writing, sound, memory, electronic, magnetic, ... or may it exist independently in some immaterial form? (Here we recall the Plato's archetypes) Indeed what is the relation between information and physical forms of energy? [negentropy?]

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

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

Smolin: A similar generalization

1) Natural Selection to the inanimate world

~~to~~ here

2) Codes to the inanimate world

Problems with 1) Who selects?

with 2) What is the genome

Aristotle required it be material

Plato postulated non-material

It-space or form/pattern space is Hamming Space

Named for ~~Robert~~ RICHARD Hamming who developed

such an idea in binary form. [IBM?]

~~Robert~~ RICHARD Hamming

b. Feb 11, 1915

d. Jan 7, 1998

see obituaries

Enc Brit yr. bk 1999

THE CITY AS COSMOS

Throughout history, In the thinking of those who dwell within its bounds, the polis has been the cosmos. For the city dweller of ancient Athens, Alexandria, or Rome; of modern New York, Paris, or Moscow their city represents the universe. Its story is regarded as the only story, its culture as the only culture, its troubles as the only troubles, its deity as the only God. What is it that allows the city to substitute for the cosmos? It is not self-sufficiency, and certainly not all inclusiveness. Yet there is some degree of inclusiveness reached by the city that permits it to sustain exclusiveness, some degree of openness that supports closure and allows the city to ~~become~~ a cosmos.

To explore this phenomenon let us put the city as we understand it and the universe as we understand it, into juxtaposition. What commonalities exist?

- In a study of cities from ancient to modern times, the architect and city planner Michael Doxiadis found that, whatever the mode of transportation, and whatever the size of the city, the time taken to cross the city was always less than a fixed amount. In other words if **r** is the radius of the city, and **v** is the available velocity afforded by the current mode of transportation, then

(1)
$$\frac{r}{v} \leq t$$

In juxtaposition in the case of the universe, we find that whatever the size **R** and whatever the time **T**, the velocity is always bounded

(2)
$$\frac{R}{T} = V \leq c$$

where **c** is the velocity of light.

- A second parameter defining both the city and the universe is the mean and local density of matter.

2000 # 38a

HSPACE1.WPD JUNE 14, 2000

A JOURNEY INTO H SPACE

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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 as contiguity 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.

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Evolution is a process based on the dialectic of force <==> form. Although traditionally expressed in terms of mutation, interaction, and selection, these three processes that constitute evolution, break down into the interactions of force and form.

2000 # 50

SPACES01.WPD AUGUST 23, 2000

SPACES

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accounting for synchronicity

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plants do not move about

2000 # 87a

FOURONES.WPD February 2, 2000 rev DECEMBER 18, 2000

see also 2000 #91
2000 # 38, #58
2001 # 33, #42

FOUR MEANINGS OF ONE

All representations are ambiguous. Symbols such as flags, seals, coats of arms, and signs carry many meanings, sometimes conflicting messages. Even words, our most useful representations, are loaded with equivocal or multiple meanings. Humpty Dumpty was probably 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 which context. All so true, BUT when it comes to numbers, Ah, there we have precision, no ambiguity 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 dictionary 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 ambiguity that plagues other symbols? Consider the number, **one**. Does **one** always mean just **one** and nothing else? Let's see:

THE ONE THAT IS ZERO

Sunyata Nothing

1). Sometimes **one** has the value **zero,** (and **zero** has the value **one):**
Centuries before Nagarjuna in India invented the symbol "0", **zero**, for nothing (He required a symbol to formalize his nihilistic 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. One of anything by itself could not exist. So Pythagoras proposed using **one** as the symbol for nothing. This theme was picked up in the 20th century by the astronomer-physicist Sir Arthur Eddington. He summarized the idea by stating: "Uniform sameness [oneness] is philosophically indistinguishable from non-existence"[1]. Pythagoras and Eddington do have a point. A parameter that takes on only one value is not recognized as a parameter. It does not exist. If there were but one color, there would be no perception of color; if there were but one temperature, we would not have conceptualized temperature.

Even in conventional mathematics there seems to be some cross dressing between **zero** and **one.** [2]

$\log_b 1 = 0$, $b^0 = 1$, where b can be any number; even $0^0 = 1$. And don't omit $0! = 1$.

---

[1] Can we then conclude that homogenization, which funnels everything to sameness, will ultimately result in extinction?

[2] Are **zero** and **one** a pair providing the necessary Pythagorean multiplicity for own their existence?

The Indian mathematician Srihava about the year 1000 recognized the importance of zero

Earlier The Mayans ~~about the same time~~ saw the need for a symbol for nothing

The One that is Nothingness
The One that is unity } everything
The One that is isolation } individual
The One that is homogenization [one color = no color]
Sameness

The One that is fulcrum $\frac{1}{X}$, 1, X
Mirror
Watershed

4 Is: Nothing, fulcrum, An INDIVIDUAL, Everything

Nothing between something

the nihilo ~~of~~ ex-nihilo

$\log_b 1 = 0$

$b^0 = 1$

"May we become One"

$2 \rightarrow 1$ a different existence
a parameter, gender, disciplears

2000 #876

THE ONE THAT IS ONE

individual

2) Yes, sometimes **"1"** has the value **one**:
One is the value that mathematicians decided to give to **"1"**. In arithmetic "1" is the fundamental numerical element. It has the additive property 1 + 1 = 2, and with the help of "plus" can go on and generate all of the natural numbers. One is also the "cloning" operator, 1 x A = A, making a clone of any A. Hence one is an essential ingredient in effecting multiplicity.

THE ONE THAT IS EVERYTHING

Universe

3) Sometimes **one** has the value **infinity**
The **"un"** in universe stands for both one and everything. One can stand for the whole of anything, and if the whole is infinite, then one represents infinity. And, of course, 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.

THE ONE THAT IS ANY NUMBER

4) Mathematicians have ~~discovered~~ shown that **one** may be written as $e^{2n\pi i}$.
In the equation $e^{2n\pi i} = 1$, n can be any positive or negative integer (or even zero). Hence all the integers are contained in one. This may be viewed as a sub-case of 3) since all the integers constitute an infinity (or an infinite set if you insist on being technical), 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.

also $\sqrt{i} = e^{i\frac{\pi}{4}} = \cos\frac{\pi}{4} + i\sin\frac{\pi}{4} = \frac{1}{\sqrt{2}}(1+i)$

$\sqrt{i}\sqrt{2} = 1+i$

$1 = \sqrt{2i} - i$

2000 # 91

4SPACES.WPD Revise DECEMBER 26, 2000
[cf 2000#87], #38, #50
2001, #33, #42

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. 2° Law → Absolute zero and Black Hole
2 kinds of oneness in P-SPACE
a position and a motion

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~~ APOLLO, ONENESS becomes **monopoly**, concentration of wealth, power, control.

$p \cdot q > \hbar$
$E \cdot t > \hbar$?

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 2° Law? and heat death → ONE TEMPERATURE
entropy ↑ information ↓

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 nodes or entities. Contraction in M-SPACE results in an organic wholeness.

P-SPACE SPACE-TIME

E-SPACE ENERGY - MASS $\frac{ML^2}{T^2}$

According to general relativity
$M \Rightarrow [L^3 - T]$

But energy is also movement
Two form, Mass & Movement
Mass in motion

T cycles ~ waves
also $\tau = \frac{1}{\sqrt{G\rho}}$

p-space a sub-space of E-Space?

HEAT
also $\frac{GM^2}{R^2} = E_G$

H-SPACE INFORMATION
TWO MODES: STATIC ⇒ FORM
MOVEMENT COMMUNICATION

∃? pure information?

E Electrical =? $\frac{e^2}{L}$

Question: Szilardi idea of information = negentropy ?

B-SPACE RELATIONS, BONDS, FORCES
STATIC $\frac{ML}{T^2}$

M-SPACE MODELS, REPRESENTATIONS, SYMBOLS

INCREASE & DECAY
CHAOS THEORY
~ MUTATIONS?

2° LAW

MOST DECAY IS TO ONENESS
INCREASE IS TO VARIETY

THE RELATIONS BETWEEN THE SPACES

WHAT IS THE RELATION BETWEEN THE FUNDAMENTAL CONSTANTS AND THE SPACES?

Particle-Wave energies

particle	wave	charge
$\frac{GM^2}{L^2}$	$\frac{\hbar}{T}$	$\frac{e^2}{L}$

particle energy = wave energy

$M^3 L = \frac{\hbar^2}{G}$ from τ

or

$\frac{M^2 T}{L} = \frac{\hbar}{G}$ from ν

$M^5 = \frac{\hbar^3}{G^2}$ ν

Attribute to dimension

2 (charge ~ 1 dimensional ??
Mass ~ 2 dimensional
Time ~ 3 dimensional
Time ~ 1 dimensional

→ 1

1) → organism and complexity
2) → homogenization and extinction

2001#33

4SPACS.WPD MARCH 18, 2001

THE FOUR SPACES

In the eighteenth century the English philosopher John Locke emphasized it is the ***visible*** that is of cultural and cognitive importance. In the twentieth century the French structuralist philosophers disagreed and claimed that it was the ***invisible*** that was of importance. Their reasoning was that the essence of any structure resides not in the parts that make up the structure but in the *relationships* between those parts. The relationships are not only more important than the parts, the relationships even define and create the parts. And of course, it is the parts that are the visible and the relationships that are the invisible.

Li Kiang, the "Sage of Guilin", once proposed that the way to think about the world was in terms of four "spaces". Two of the spaces contain the visible, two the invisible. For current purposes we may label and describe these spaces as follows:

P–SPACE MOTION

This is the physicist's space, the space of position both in place and in time. Everything that physically exists can be defined by coordinates in P–Space. Expansion and contraction in this space refer to changes in distance and interval between locations. P–Space is a "visible space".

H–SPACE

This space could be called the artist's space. It is the space of shapes and forms. The coordinates in this space would be such parameters as color, shape, size, mass, density, etc. Expansion in H–Space would correspond to an increase in variety, contraction to homogenization. H–Space is also a space of the visible.

K–SPACE

This is a space of relationships, particularly the sub-set of relationships that may be represented by forces or relationships that are derived from the interaction of forces. Expansion in K–Space would result in the increase of the strength of force and hence in compaction or consolidation. Contraction in K–Space means the weakening of force with resulting fragmentation
K–Space is a space of the invisible.

B–SPACE

This is another space of relationships, but of relationships such as belonging or bonding, relationships of choice or heritage not based on force or of a forceful nature. Expansion in B–Space results in cohesion, stronger bonding; contraction results in alienation. B–Space is also a space of the invisible.

According to Li Kiang, no phenomenon may be comprehended without exploring its components in each of these four spaces.

2001 #43

Perceived or Felt

SPACES4.WPD APRIL 9, 2001

See also 2001 # 33
2000 # 38, #50, #87, #91

THE FOUR SPACES

We experience the world in two basic ways: through what we sense and by what we feel. We organize our experiences into the visible or sensed world and the invisible or felt world. The visible world is further subdivided into two "spaces": the space of position, motion and arrangement; and the space of shape, form, and pattern. The invisible world is also subdivided into two spaces: the space of forces [gravity, centrifugal, Coriolis, electric, etc], all of which are felt but never seen. And the space of invisible links or connections [relationships, bondings, attractions, aversions, etc], again which are felt but not seen. *

	Receptors	FELT INVISIBLE	SENSED VISIBLE	
		PHYSICAL FORCES	POSITION, MOTION	
HYLETIC		$\frac{d^2x}{dt^2}, \frac{d^3x}{dt^3}$	$x, \frac{dx}{dt}$	CORPORAL
		K–SPACE	P–SPACE	
		NON-PHYSICAL LINKAGES CONNECTIONS	FORMS, SHAPES PATTERNS	
NOETIC				EIDETIC
		DESIRES AVERSIONS	COLORS SCALE	
		B–SPACE	H–SPACE	

Some experiences are both seen and felt, others may be neither seen nor felt. In addition to the spaces on the left being invisible, the relations and interactions between the four spaces are also invisible. In fact, they are neither seen nor felt. They must be detected indirectly by inference. Another factor is the role of time in each of the spaces. Positions and velocities in P space, accelerations and third derivatives in K space. But there may be totally different aspects of time operating in B and H space.

* The forces of tension and gravity are sensed, not felt

Another factor
Determinism
Teleology
Open / Closed
...

Concept - Noetic
Percept -

Where is the observer?
In all 4? or in the interstices?

Eidetic ~ ref Image eidos = image
eidolon = unsubstantial image

Hyletic = material hyle = matter
whatever receives form or is determined by that outside itself

Hylic = unseen
corporeal = seen

Noetic - apprehended only by intellect reason
not perceptio

2000#48 Li = the rational principle of existence ~ concept
Chi = the material principle of existenc ~ percept

∃ also "felt" neither a concept nor a percept

The psychical entities which seem to serve as elements of thought are certain signals and more or less clear images which can be "voluntarily" reproduced and combined... This combinatory play seems to be the essential feature of productive thought - before there is any connection with logical construction in words or other kinds of signs which can be communicated to others... The above-mentioned elements are, in my case, of visual and some of musical type. Conventional words... here to be sought for laboriously only in a secondary stage, when the mentioned associative play is sufficiently established and can be reproduced at will.
--Einstein

THE MOST INCOMPREHENSIBLE THING ABOUT THE WORLD IS THAT IT IS COMPREHENSIBLE. --Einstein

Wittengenstein and Einstein both attempt to achieve operational understanding of why mathematics, language, or any system of symbolic representation, can isomorphically represent the observed world.

There are both composite and primary SPACES. M-SPACE, manifest space, the one we live in, the space of common experience, is a composite space. [The Buddha says that all things that are composite are illusions] We also exist or participate in other composite spaces. But like in reductionist decomposition, composite spaces are to be broken down into primary spaces. [this rather than scalewise reductionism.] The basic athroismatic question is 'what are the primary spaces?'

Candidates are P-SPACE, H-SPACE, AND B-SPACE

In addition to M-SPACE, we exist in G-SPACE [gnosis or cognition space]

There is also A-SPACE Plato's space of archetypes.

The limitations of P-SPACE on associations, especially temporal and causal, and spatial are not shared by G-SPACE the space of thought and imagination. Yet a subset or sub-domain of G-SPACE maps P-SPACE.

A sub-space separated from other sub-spaces vertically as distinguished from a Domain which is a sub-space separated from other sub-spaces horizontally.

LINK

MODULE

An aggregate bound together by forces generated by or indigenous to its elements.

NODE

PACKAGE

PRIMARY

An essence or system that is stable or permanent with respect to all other systems. Brahman, Sat, ... A fundamental set of non-definables whose gestalt effects a system.

RECURSION

REDUCTIONISM

REGRESSION

REPETITION

SCALE

A dimension in H-SPACE that determines relative size.

SPACE

Spaces are of two types: Composite and Primary. Examples of primary spaces are:

P-SPACE, Position or place space
H-SPACE, Form or shape space
B-SPACE, Bonding or linking space

K-Space

Examples of composite spaces are:

M-SPACE, Manifest space, the physical space in which we live in waking consciousness.

C-SPACE, Cognitive space, the space in which mental or thought elements exist.

3 bondings per similarity

SYMMETRY

Negative bonding by similarity = competition
positive bonding by difference = symbiosis [ecological]
positive bonding by similarity = flocks
Negative bonding by difference = aversion, hatred, intolerance

TEMPLATE

E-SPACE SPECTRA of EXISTENCE

4SPACES.WPD MARCH 18, 2001

See also 2000 #87 #50 #91 #38 2001 #42

THE FOUR SPACES

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SPACDIAL.WP6 April 10, 1998

cf 98#20 #27

DIALECTICS IN ALTERNATE SPACES

We recognize two kinds of dialectic:

The first type of dialectic consists of a dyad whose two components act simultaneously. The counter action of these opposing components continues until a state of equilibrium is reached.

In the second type of dialectic only one component acts at a time. The alternate action of the components results in growth, evolution, or emergence.

We tentatively postulate four spaces:

P-SPACE, the space of nodal positions; H-SPACE, the space of nodal forms and patterns, (information content of nodes); B-SPACE, the space of nodal interaction, internodal forces, traffic, and messages; S-SPACE, the space of selection, decision, choice.

The attraction/repulsion dialectic takes a different form in each space as in TABLE I.

SPACE\DIALECTIC	ATTRACTION/REPULSION	
P-SPACE	CONTRACTION/EXPANSION	Position
H-SPACE	HOMOGENIZATION/DIVERSIFICATION	Pattern
B-SPACE	CONSOLIDATION/FRAGMENTATION	Bonding
S-SPACE	SELECTION/OPTION	Selecting

TABLE I

In addition to **intra** linking within a space, there must be **inter** linking between spaces. The dialectic itself is one form of interspatial link.

P-SPACE:

Position or physical space, the space in which our sensory apparatus operates. This space can be viewed either as a three dimensional geometric space or as four dimensional space-time. Its properties are the basis of Aristotelian two valued logic and the law of the excluded middle. It is characterized by here and not here and now and not now. No two objects can occupy the same coordinates (place) at the same time and no single object can be at different places at the same time. [This is sort of a generalized Pauli exclusion principle]. These interconnections of space and time coordinates indicate that the space and time axes are not orthogonal in the sense of being completely independent,

contrary to their usual mathematical formulation. There are two kinds of distance in P-SPACE: extension in zones of non-zero density and separation in zones of zero density. Localization in P-SPACE means an object has a unique set of space-time coordinates. Non-localization means that an object occupies an extended space-time volume.

H-SPACE:
Hamming or morphological space, the space of archetypes, blueprints, templates, and recipes. This is a multidimensional space, having as many dimensions as the number of parameters required to describe a form or pattern. Distance between two objects in H-SPACE is a measure of their difference in form. Identical objects will have the same coordinates in H-SPACE. Unlike in P-SPACE, there is no limit to the number of objects that can have the same coordinates. The volume occupied by a set of points in H-SPACE is a measure of their variety. The smaller the volume, the more homogeneous the set. Whereas in P-SPACE a volume represents non-localization of a node or entity, in H-SPACE there is no corresponding interpretation of volume for a single entity. [Unless that entity is Proteus himself].

B-SPACE:
Bonding or control space, the space whose coordinates measure the degree and nature of the interaction between nodes or entities. Distance in B-SPACE is a measure of the degree of bonding between nodes or entities. The smaller the distances the stronger the forces of attraction and the more intimate the bonding. Depending on the number of points and their density, volumes occupied by a set of points in B-SPACE, from smaller to larger, will represent organisms, societies, institutions, or ecologies. Density is a measure of dependence. Increasing density signifies increasing interdependence, decreasing density signifies increasing independence. Also B-SPACE includes the nature of the communication channels between nodes. A channel may be broad band or narrow band, may range from laser or pencil like to omnidirectional or 4π like. Small volumes indicate narrow bands and beams, large volumes the opposite.

S-SPACE
Decision or selection space. Volume in S-SPACE is a measure of the number of options or alternatives that are available. Decision processes reduce the volume. A second feature of S-SPACE is the mode of selection: Random, deterministic (causalistic), teleological (finalistic), or contextual.

ATH

THE SPECIES OF SPACE

METRIC SPACES
- CURVATURE PARAMETER
  - K = 0 EUCLIDIAN OR FLAT SPACE
    - An "interface" space *
    - Has the property that form and scale are independen t †
  - K ≠ 0 NON-EUCLIDIAN SPACES
    - Positive curvature: Closed spaces
    - Negative curvature: Open spaces
- DISTANCE ~~w~~ SEPARATION
- SCALE ~~w~~ FORM
- DIMENSION PARAMETER

PROJECTIVE SPACES

TOPOLOGICAL SPACES

HAMMING SPACES
- SIMILARITY SPACES
  - SEPARATION ∝ FORM DIFFERENCE
  - Form-metric dependence (not same as form-scale dependence)

COGNITION SPACES
- INFORMATION SPACES
- ENTITY ~~w~~ RELATION NODE - LINK

INTEGRITY SPACES
- TOTAL RELATIONAL MODULES [NODES]
  - No internally severed relations
    - GLOBAL
    - LOCAL

PARTIAL RELATIONAL MODULES
- ORGANISMS

SOLIPSISTIC MODULES
- No contexts

* Flat euclidian space, the space in which we physically exist, is an interface space between open and closed spaces. Being an interface it is not surprising that it is a breeding region for complex systems.

† In non-flat metric spaces form and size are not independent. There are no such things as similar triangles, for example, i.e. same shape, different size. On a sphere of fixed radius the angles of an equilateral triangle depend on the size of the triangle.

AT11

MISCREL1.WP6 January 19, 1995

SOME MISCELLANEOUS NOTES ON RELATIONSHIPS

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

I FACTS AND INTERPRETATIONS

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

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

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

III THE DISSOLVING-PROFANATION DIALECTIC

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

SACRSP3.WPD November 14, 2009

SACRSP3.WS2 January 26, 1986

ON SACRED SPACES

Sacred spaces may be classified by whether they are:

VESTIBULAR SPACES

These are spaces that generate paradox.
They create some variety of tension
or contradiction such as fear and security,
attraction and repulsion,...

NURTURATVE SPACES

These spaces may be either pre-vestibular or post-vestibular.
They are spaces that sustain restore and comfort.

ENHANCEMENT SPACES

These spaces are spaces dedicated to activities that advance us along the path.
They are reserved spaces for meditation, study, service
and the work essential al to their support.

ADORATION SPACES

These are spaces of the highest holy nature
where one worships and comes close
to the presence of the 'Other'.
They are the goals of pilgrimage
and the portals to the higher para--worlds.

THE PARAMETERIZATION OF SACRED SPACES

I: EARTH CHAKRA POINTS

These are points indigenous to the terrestrial organism
that correspond to the chakras in the body.

II: NATURAL KI PLACES

These are regions in which the natural FENG SHUI,
the locations of the mountains, rivers, vegetation, etc
act to channel or trap I,

III: RITUALIZED SPACES

IV: ARTIFICIALLY INDUCED FENG; SHUI

MANIFESTATIONS OF SACRED SPACES

1) The generation of tension or paradox.
2) Ki density.
3) High occurrence of low probability events (miracles) .
4) Alternatives are visible, high acuity regions

i.e. One is acutely aware that of a difference in the nature of space
when one enters it.

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SACSPAC1.TXT JAN 15, 1986

ON SACRED SPACES

What is it that sets off certain places from all others? What signals us that we have entered a special sort of space, when we enter a great cathedral, a venerated memorial, an ancient temple or tomb? How is it that our thoughts, our focus and our behavior are changed while in such a space and we are lifted out of our ordinary state of consciouness to a state of receptivity and responsibility not normally experienced?

Many years ago, before the various species of politically inspired violence descended on Southeast Asia--before the days of the Viet Cong, the Green Berets, the Khmer Rouge--I was fortunate in being able to visit some of the ancient temples hidden in the depths of the Cambodian jungle. The jungle itself inspired a sense of awe and wariness, not so much from the fears of the present, a chance encounter with a large snake or large predator, but from some forgotten past that had clung to the jungle over the centuries and millenia. A past that had faded and been forgotten but which was still searching for realization, seeking somehow another incarnation to restore and complete what had been lost ages ago.

What was but vaguely sensed in the jungle, trenchantly penetrated us as we suddenly came upon the ancient stones of Ankor Thom. We had entered into a sacred space which demanded our full focus and paradoxically drew us into its being while instilling in us a sense of trespass. It was as though in our coming there we were simultaneously interfering with and being incorporated into some mysterious process of reincarnation taking place in the crumbling stones. I found myself strongly desiring both to depart from the temple as quickly as possible and to remain in its presence forever. Such paradoxes are the vestibules of transformation and emergence. The power of the temple to inject ~~each~~ a paradox into the depths of our psyches, ~~was the manifestation as~~ revealed it to be a sacred space.

Actually in ancient Greek there were two words which indicated 'endless space', and one word which indicates 'a space with a border'.

Here they are:

χενον

1-"Kenón" (Greek fonts, ???ó?), a neuter noun, which means either 'endless space' or 'empty space', 'void', according to Democritus (Fragment 9) who talks about empty space ,'the void of space', between atoms and says: "Nothing exists except atoms and empty space; everything else is opinion".

χαος

2-"Cháos" (Greek fonts, ????),a neuter noun meaning "primordial space", "infinite space". In early Greek cosmology the chaos was in fact the personification of the primordial void. In fact, in the beginning there was only 'chaos', that was a shapeless and confused mass of elements.

χωρος

3-"Chõros" (Greek fonts, ????? with the circumflex accent on the omega), a masculine noun which means 'space' in the sense of a definite area that has a border.

Χωρος definite place

COSMOS = ORDERLY ARRANGEMENT APOLLO

CHAOS = PRIMORDIAL DISORDER DIONYSUS

KOINE?

χωρα space - kora

διακενον empty space diakenon

THE MATTER OF CHOICE

In the term "mass-customization" a new oxymoron has appeared. In an editorial in the December 8th issue of Wireless Week, Rob Mechaley states that before Henry Ford innovated the assembly line to produce his Model-T Fords, there was such a thing as customization, the tailoring to individual specifications. With mass production customization disappeared, (Ford said that you could have any color car you wanted so long as it was black), being replaced by either a limited smorgasbord or a one size fits all lunch. Now with new computer technology Mechaley claims that even under the rubrics of mass production customization has returned. His point seems to be that instead of doing market research to find out what most consumers want and standardizing production to make that the norm, it is possible for companies to have a basic product and 'customize' it through the availability of a set of optional add ons. But this "advance" toward pre Model-T times is a far cry from the traditional definition of customization, the crafting to individual specifications. But if Mechaley wants to introduce the term "mass-customization" for a little less limited smorgasbord, we can accept that as another one of the prevailing deceptive euphemisms of marketing.

Certainly, mass production has homogenized products, but even so bill boards tell us that advertizing creates choice. This infers that choice is recognized as important to consumers and if there is no real choice, the illusion of choice must be created. Illusory choice is one of the devices by which homogenization, monopoly, uniformity, and hence control take over. The matter is no longer confined to the business ball park, but spills over into the political ball park. [Once an American reporter was interviewing a dictator in a sub-Saharan African country. He asked the dictator, "How can you claim to have democracy here when you have only one political party and no choices?" The dictator replied, "How can you claim to have democracy in America where you have but one political party, but with your usual American extravagance you make two of them?"] The challenge emerges: How do we decide what choices are illusory and what choices make a difference?

To engage this challenge, we must first understand the nature of variety. Here it is useful to introduce "Hamming Space". This is a multidimensional abstract space in which distance is used to measure the degree of variety or difference between two products or entities. The degree of variety or complexity of an object is given by the number of dimensions required to give its position in Hamming Space. Superficial variety requires only one dimension (or parameter). Take ice cream, for example, while it may require several dimensions in H-space for its complete description, when it comes to the flavor of the ice cream, flavor difference is one dimensional. Returning to choice, the more dimensions in H-space involved in the choice the greater the difference it makes, the more meaning the choice has. Most of the choices in a mass production society involve very few dimensions. Substituting one dimensional (or we might say, illusory) choices for multidimensional choices is a strategy used by those seeking to create monopoly.

When the number of dimensions in H-space that specify entities is reduced, it

shrinks our available domain of awareness, accessibility and possibility in the real universe. A dimension in H-space disappears when it is reduced to having only only one value. If there is but one point, there is no line; if there is but one line, there is no plane; if there is but one plane there is no volume; If there is but one temperature, then there is no such thing as temperature; if there is only one color, then there is no such thing as color. It must be concluded that Total extinction ensues when every parameter has been reduce to one value. Hence, **The road to homogenization is the road to extinction.**

Note 1)
By the above reasoning, If there is one God, there is no such thing as God. But it is not that simple, while temperature and color are but one parameter quantities to begin with, God is multi-dimensional. However, it is also true for multi-dimensional entities that unless there exists more than one and that there exists some additional difference between them, then they do not exist. [Hence, the Virgin Mary]

Note 2)
A plurality in number of identical entities may guarantee their existence, not requiring other differences, but only if they are localized, in which case their difference in position in space and time constitutes the required H-space difference for existence. However, if they are non-local, they must possess some differences beyond those in space-time in order to exist. Thus cloning is O.K. for localized entities, but not for non-localized entities. [No two angels can be alike.]

Note 3)
The Buddhist argument for the illusion of existence as given in the dismemberment of the Maharaja's chariot, disregards the existence of the template of the chariot, which has not been destroyed by the fragmentation of one of its manifestations.

Note 4)
-->"1" effects extinction in the manifestation world, but not in the template world;
-->"0" destroys the template. However "SAT" is never destroyed or destroyable, it is like the ROM, needed to "boot up" a universe. Brahman

Note 5)
The fascination with quantum mechanics is the inference of non-locality, but there is the equally important inference of +, - balance (or x, 1/x balance)..

All of the above is based on an apophatic epistemology.

SPACES

THOUGHTS2.WPD September 18, 2005

What connects the non-contiguous and non-continuous?
The notion of **field** is the classical Newtonian way of handling non-contiguity. A field has intensity or strength at every point and also may have **direction** at every point. It is curious that things, as contrasted to fields, lack intrinsic direction, and find direction only in relation to other things.

But material things are embedded in fields and direction contained in a field holds everywhere within the field, although in the midst of or within things, the properties of things overrule the properties of fields at least in the perceptions of most observers. Fields are not only connectors they are both contexts and containers. Fields appear to have contiguity and continuity.

manifest
unmarked

When is a context a field?
A context may be a field or a {objects}

There are two kinds of space [L], extension and separation.

There are two kinds of time [T], duration and interval.

These two species are more apparent with Temenos and Kairos than with space and time.

OR
Perhaps even fields lack continuity and contiguity and all that exists is discrete, embedded in gaps of nothingness. (Maybe nothingness is the only essence that possesses continuity and contiguity). Nothingness is a "meta-field" and one not devoid of its own attributes (including direction).

APPROACHES TO ONTOLOGICAL MODELING

SPACES

P-SPACE: The spaces of location

First, the space of three spatial dimensions, the space of **entities.** (Events do not exist in this kind of P-SPACE because permanence or long duration in time is required for existence). In this space entities are located with respect to each other by the parameters distance and direction. Note that distance and direction may be considered to be LINKS.

Second, the space of space-time, the space of **events**. Events are located with respect to each other by not only the parameters distance and direction but by instant of occurrence and duration.

H-SPACE: The spaces of form

First, the space of shape or form only

Second, the form space that also allows scale

B-SPACE: The space of linkages, the factors underlying both **events** and **entities**.

First, the space of forces

Second, the space of bonds

Third, the multi-level space of sets of linkages, and sets of sets, etc.

EPISTEMOLOGICAL STRATEGIES (Each of these has its counter part in military strategy).

PENETRATING SINGLE FOCUS

Can advance rapidly, limited territory, fixed goal,

Strip map, Eventual stagnation with encrusted dogma

BROAD FRONT

Glacial advance, wide territory, receding goal,

Coastal map, Runs out of energy and ossifies

BOUNCING

Rapid movement, local territories, no goals except to keep moving,

No map, Illusion of accomplishment

LINKED SELECTED SECTORS

Moderate advance, territories with gaps, continually redefined goal,

Accurate but partial map, Self energizing

Success in any sector or parameter, attracts energy to that sector, resulting in the neglect or ignoring of alternatives. So LINKED SELECTED SECTORS may transform into PENETRATING SINGLE FOCUS.

FORMFORCE.WPD October 14, 2006

THE FORM <----> FORCE DIALECTIC

The form-force dialectic is an inter-space dialectic, operating between H-SPACE and B-SPACE.

A shaman creates a schema, e.g. a sand painting, which is a complex form. This form generates a force, e.g. for healing. Not all forms are schemas. A schema is a form that generates a force, as for example, a form that is an organizing principle. And some special schemas are capable of generating self-organization.

Rituals, Icons, Idols, are all examples of schema or forms that generate force.
Languages are infrastructures or schema, in fact most semiotic creations are schema. templates
These schema generate forces that generate further schema that generate further force that....

The basic question is which schema are open ended and which are deterministic, and converge.

Einstein's general theory of relativity can be considered a schema in the sense that the geometrization of gravity was a form that explained the self-organizing force, gravity.

Form ⇔ Infrastructure ⇔ Schema
Generate frame for creates a force
organizing
Ground

#31

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PIECES OF THE PUZZLE PART II

RE GÖDEL

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

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

[*--Chaitin see Peterson p197]

BUILDING BLOCKS

- SPACES
- QUADRANTS
- DIMENSIONS
- LEVELS

- Symmetry
- Orthogonality

- Dialectics
- Imperatives

- Realities
- Cultures

- NODES
- LINKS
- TRAFFIC
- CARGO

THE FOUR LEVELS OF MIND

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

And SUNYATA

SPACES

- P-SPACE Particle or Position SPACE

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

R - SPACE PROBABILITIES

FOUR FEATURES OF QUANTUM MECHANICS

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

MORE QUESTIONS

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

MISCELLANEOUS

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

SPACES1.WPD September 24, 2008

EXISTENCE requires BEING in more than one space,
and BEING requires EXISTENCE in more than one space..

We humans live actually live in several spaces. Our sensory apparatus connects us primarily to P–SPACE , the space of location and motion. And in P–SPACE we perceive ourselves as individuals. But in other spaces in which we exist, we are not the individuals of P–SPACE. In fact there are spaces in which a human plus a tree or a cloud plus a hill are entities. In other words, what is contiguous and continuous in one space may be widely separated in distance and form in another space. Temenos and Kairos are not contiguous or continuous in P–SPACE but are contiguous and continuous in S–SPACE.

Some other spaces:
H–SPACE, the space of form, pattern, and structure
L–SPACE, the space of all life
S–SPACE, a "spiritual" space
D–SPACE, the space of dimensionalities, which is a vector space governing P–SPACE
I–SPACE, the mysterious information space

And there are semiotic spaces, cultural, language, and legal.
And we create temporary spaces in which we dwell, such as when we watch or play in a baseball game in a stadium. Many spaces have an emptiness that allows change and movement.
No space is self–sufficient, but there are unlawful transfers between spaces

It appears the birds and animals have access to some spaces that we humans are ignorant of. But St. Frances did learn to communicate with the birds, and certain shamans can communicate with trees and hills. Human senses seem largely confined to P–SPACE, but we have occasional glimpses of other spaces to which we can develop access. And memories or recognition of spaces which we once visited or in which we once dwelt.

We depart only from P–SPACE when we die.

SPACES3.WPD September 24, 2008

DIMENSIONS AND DIMENSIONALITIES

Dimensions are orthogonal parameters or axes, x, y, and z that create space in the sense of analytic geometry.

Dimensionalities are directions in the space designated by ax+by+cz
Or in the case of physical parameters, such as mass, velocity, or force, with the exponents of the axes L, M, T (assumed to be orthogonal, ie, independent)
eg Mass = M^1 , Velocity = $L^1 T^{-1}$, Force = $M^1 L^1 T^{-2}$

Another common system for physical dimensionality uses c,G,ħ (not orthogonal)
Mass = $(c\hbar/G)^{1/2}$ Velocity = c Force = c^4/G
The are known an the "planck values" or values of the planck particle

It can be shown that the above three parameter dimensionality systems may also be given by a two parameter system, using only powers of α and μ

also a dimensionality is designated by the name or label for the unit
e.g. mass grams kilo
force dynes
energy ergs joules
power watts
etc

HIERARCHICAL VECTOR SPACES

D–SPACE, dimensionality space, is a vector space whose dimensions are L,M,T and whose directions are set by their exponents. The magnitudes are from measurements, thus

VECTOR: $\text{MEASUREMENT}^{\text{DIMENSIONALITY}}$

But dimensionality is itself a vector, EXPONENTS OF LMT

The vector of movement in P–SPACE is not to be confused with the dimensionality vector of D–SPACE

$\text{Velocity}^{\text{direction}}$ or $\text{Distance}^{\text{direction}}$ in P–SPACE