



laetus in praesens

Alternative view of segmented documents via Kairos

7th February 2010 | Draft

Patterns Essential to Individual and Global Health?

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Introduction (in main paper)

Remedial "healing" from patterns of N-foldness

Example: Approaches to 9-fold integration

Value of a dynamic method based on tentativeness and reflexivity

Alternation exemplified in 4-fold pattern

Alternating between patterns of numbers and patterns of metaphor

Possibility of an organic "metaphoric chemistry"

Playful quest for patterns of symmetry

Pointers to possibilities: Ekistics, Dymaxion World and Eco-Cube

Health and sustainability through the dynamics of patterning

Cognitive patterns of environmental significance

Dynamics of polyocular and multifaceted cognitive framing: navigating the adaptive cycle

References (in main paper)

Annex A of *Cognitive Implications of Lifestyle Diseases of Rich and Poor: transforming personal entanglement with the natural environment* (2009)

Remedial "healing" from patterns of N-foldness

This exploration was triggered by a 9-fold pattern and has exploited certain correspondences based upon it. This follows from earlier explorations of patterns of N-foldness (*Representation, Comprehension and Communication of Sets: the role of number*, 1978; *Examples of Integrated, Multi-set Concept Schemes*, 1984; *Patterns of N-foldness: comparison of integrated multi-set concept schemes as forms of presentation*, 1984).

Such explorations raise the question with respect to any recognition of a set of categories or remedial initiatives: why is a set of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, or more, considered comprehensive and complete in a given case. Why 9 in this case? Should the 9 rather be 8 or 10? In any taxonomic initiative, what is the pressure to increase the number of categories ("split") or reduce them ("lump them together")? As was first said of the mini-skirt, a primary criterion of concern in determining the size of any set is whether it is "short enough to cover the subject and long enough to be interesting". Too small and it does not appropriately reflect variety and limits recognition of the pattern of significant relationships between the elements. Too large and it is a challenge to learning, comprehension and memory.

In a society increasingly sensitive to the design of communications for wider comprehension and use, contracting or expanding sets is associated as much with how categories best "fit" together for mnemonic purposes as to the nature of the "truth" they represent (*In Quest of Mnemonic Catalysts -- for comprehension of complex psychosocial dynamics*, 2007). In a knowledge-based society experiencing exponential growth in the quantity of information, the situation can only become more challenging (*Emerging Memetic Singularity in the Global Knowledge Society*, 2009).

The question here is how a 9-fold set might indeed contribute to understanding of remedial responses to both lifestyle diseases and to planetary crises (as suggested by the above-mentioned presentation on "planetary boundaries"). One much-explored response is through the integrative insights associated with the traditional **enneagram** to which reference was previously made in discussion of *In quest of systemic functional connectivity* (in *Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity*, 2009). Another concern is how any particular number of categories, such as 9, can be fruitfully related to any preferred sets of a smaller number -- possibly more easily comprehended -- or to a larger set implying a more fundamental form of healing.

"Healing" may then be partially associated with recognition of how the integration of the larger number of categories or processes is achieved through patterns with any smaller number. "Healing" is then understood as a form of "integration" -- with a balanced pattern of processes, in contrast to the "imbalance" typically associated with systemic ills. In the case of the individual, this view is consistent with many approaches to psychotherapy. The notion of 'goodness of fit', significant to design, may be of some relevance to healing.

Example: Approaches to 9-fold integration

A classic example is the case of the Lo Shu [magic square](#), long-known in China, illustrated by the following example (from *Wikipedia*).

3x3 Magic square (columns, rows and diagonals all total to 15)				
	2	7	6	→15
	9	5	1	→15
	4	3	8	→15
↙15	↓15	↓15	↓15	↘15

Ordering the elements of the nine numbers in this particular pattern offers a simple metaphor of a high degree of "healing". The approach underlies the satisfaction -- a form of "cognitive healing" -- widely achieved by many through [sudoku](#), where 9 such sets may form part of a more challenging frame with 81 positions.

A widely known mechanical model of the challenge of such integration is offered by [Rubik's Cube](#), a 3-D mechanical puzzle invented in 1974. Over 350 million have been sold worldwide. In its original version, each of the six faces is covered by 9 stickers, chosen among six distinct colours (traditionally white, red, blue, orange, green, and yellow). For the puzzle to be "solved" -- by adjusting the faces to which the stickers are applied -- each face must be transformed into a single colour. There are [many variations](#) (including virtual forms), notably with more than nine faces per cubic surface. Some versions been produced with markings on all of the squares, such as the Lo Shu magic square (above) or the four [playing card suits](#): spades, hearts, diamonds, clubs (*Playing Card IQ Cube, the Rubik's cube for card players*). The possibility of *Rethinking Rubik's Cube: a mnemonic device for ways of knowing and engagement?* has previously been discussed within the context of *Existential Embodiment of Externalities: radical cognitive engagement with environmental categories and disciplines* (2009).

The latter discussion was notably concerned with *Individual motivation: radical possibilities in response to global crisis* in terms of:

- "Re-cognition" of the environment
- Cognitive implications for survival
- Radical re-engagement

Using [metaphors as catalysts and vehicles](#), it suggested an *Exploration of "inner games": polarization, agriculture, construction, mining* of potential relevance both to individual healing and to a more fruitful cognitive engagement with the environment.

To the extent that lifestyle diseases are partly associated with urbanization, it is appropriate to note the role of the magic square in urban planning in China as reviewed by Alfred Schinz (*The Magic Square: cities in Ancient China*, 1996).

Value of a dynamic method based on tentativeness and reflexivity

Overdefinition: As traditionally suggested within the Vedic philosophy of *Neti Neti* ("not this, not that"), and western classical recognition of the need for [apophysis](#) ("unsaying"), it would appear that "healing" might best be engendered by avoiding kataphatic closure on fixed definitions (*Being What You Want: problematic kataphatic identity vs. potential of apophatic identity?* 2008).

The dangers of premature closure -- in affirming "what is" -- might be understood as over-definition of "externalities". These could be considered as modelling errors of "subunderstanding", using the term of Magoroh Maruyama (*Polyocular Vision or Subunderstanding*, Organization Studies, 2004). Closure is likely to impose a degree of rigidity incompatible with the dynamics of a living system, whether an individual or the planetary environment ([Hilary Lawson](#), *Closure: a story of everything*, 2001).

The nature of what tends to be lost through such conventional abstraction has been highlighted by [Steven M. Rosen](#) (*Topologies of the Flesh: a multidimensional exploration of the lifeworld*, 2006; *Dimensions of Apeiron: a topological phenomenology of space, time, and individuation*, Value Inquiry Book Series, 2004). He notes the manner in which the richness of psychosocial engagement with the world has been completely undermined by formal discourse -- an "eclipse of the lifeworld" in his terms. There is then every reason to suspect that this has problematic consequences for both the individual, in terms of lifestyle diseases, and for the planetary ecosystem. An essential dynamic is lost -- possibly involving vital feedback loops essential to health.

Embodiment: The question is therefore how to render explicit such paradoxical reflexivity and how cognitively to "embody" it in the light of the arguments of [Francisco Varela](#) (*Laying Down a Path in Walking: essays on enactive cognition*, 1997; *The Embodied Mind: cognitive science and human experience*, 1991) and [George Lakoff](#) and [Mark Johnson](#) (*Philosophy In The Flesh: the embodied mind and its challenge to western thought*, 1999). Such approaches have perhaps been most succinctly summarized by Jennifer Gidley (*The Evolution of Consciousness as a Planetary Imperative: an integration of integral views*. *Integral Review*, 5, 2007) to the effect that:

However, the growing awareness of a potential planetary crisis has highlighted the significance of finding new ways of thinking, if humankind is to move through our current complex challenges. This critical imperative appears to be mobilizing researchers

from a wide range of disciplines to broaden the notion of evolution of consciousness beyond its biological bounds.

The case has also been argued as one of *Being the Universe: a Metaphoric Frontier* (1999).

'Embracing error': Donald N. Michael has appropriately argued with respect to both planning and learning, "On the requirement to embrace error", to the effect that:

More bluntly, future-responsive societal learning makes it necessary for individuals and organizations to embrace error. It is the only way to ensure a shared self-consciousness about limited theory on the nature of social dynamics, about limited data for testing theory, and hence about our limited ability to control our situation well enough to be successful more often than not (*Learning to Plan and Planning to Learn*, 1997)

It might then be suspected that any such "requirement to embrace error" merits consideration, if only tentatively or in alternation with other attitudes, as:

- a new understanding of the controversial injunction to individuals to "embrace disease" (as a form of "error") in ways with which some have already experimented (possibly obliged by circumstances to do so). This has been an understanding in classical Greece, for some religions as a God-sent fate, or more recently (*Spiritual and Emotional Factors for Disease*, AskGrace.com, 2005; Martyn Carruthers, *When Disease Makes Sense*, Systemic Solutions). One quotation offers, for example, *To be truly civilized is to embrace disease* (Robyn Davidson, *Tracks*, 1980).

For Louise Jensen and Marion Allen (*Wellness: the dialectic of illness*, *Journal of Nursing Scholarship*, 2007):

Although distinct, health-disease and wellness-illness are neither mutually exclusive nor polar opposites. Rather, they are one in the same process, acknowledging the changing person in the changing world. Wellness-illness is the human experience of actual or perceived function-dysfunction through the interaction of cognitive-affective dimensions. This experience arises out of intrapersonal, interpersonal, health-disease-related and extra-personal factors.

- a new understanding, perhaps in the light of the [appreciative inquiry](#) method, of the controversial possibility of "embracing planetary problems", understood as systemic corrective responses (by Gaia) to failure by humanity to engage with ecosystems in a healthy manner (*Celebrating the Value of Deadly Problems Worldwide*, 2008).

Military metaphors and conflict resolution: Military metaphors tend to be used (and recommended) in conventionally framing both the response to lifestyle diseases by individuals and to planetary problems by society -- as with the use of "fight" and "campaign" (*Review of the Range of Virtual Wars*, 2005). The appropriateness of such framing can however be challenged, as suggested above and previously (*Missiles, Missives, Missions and Memetic Warfare: navigation of strategic interfaces in multidimensional knowledge space*, 2001; *Enhancing sustainable development strategies through avoidance of military metaphors*, 1998).

There is the intriguing possibility that the skills long-developed for [conflict resolution](#), peace and reconciliation could be adapted to the "military" response to both lifestyle diseases and to the problems against which any collectivity campaigns. The generic challenge in all three cases (violence, lifestyle diseases and other problems) is one of engaging with "otherness" -- potentially to be exemplified by any future contact with extraterrestrials ("*Human Intercourse*", "*Intercourse with Nature*" and "*Intercourse with the Other*", 2007 ; *War against Terra*, 2002). Of particular interest would be the application of the philosophy of the eastern "martial arts" to such reframing (*Ensuring Strategic Resilience through Haiku Patterns: reframing the scope of the "martial arts" in response to strategic threats*, 2006).

Alternation exemplified in 4-fold patterns

The extension of the classical logical dilemma to the quadrilemma reframes a constraining polarity: whether as wellness/disease for the individual or as crisis/non-crisis for the planet. Kinhide Mushakoji (*Global Issues and Interparadigmatic Dialogue*, 1988) has drawn attention to the relevance of the quadrilemma. This may be exemplified in the form:

Quadrilemma examples					
<i>Distinction by de Bono</i>	logic/truth	health/viability	judgement/evaluation	knowledge/certainty	states of matter
'rock logic'	A true	healthy sustainable	guilty/responsible success	known certainty	solid (Earth)
	not-A false	illness unsustainable	not-guilty/responsible failure	unknown uncertainty	liquid (Water)
'water logic'	A and not-A true and false	both health and illness both sustainable and unsustainable	guilty and not-guilty success and failure	known and unknown certainty and uncertainty	gas (Air)
	neither A nor not-A neither true nor false	neither health nor illness neither sustainable nor unsustainable	neither guilty nor not-guilty neither success nor failure	neither known nor unknown neither certainty nor uncertainty	plasma (Fire)

The first two conditions (rows) correspond to the conventional binary logic -- famously given prominence in US foreign policy relating

to terrorism by the declaration "*You're either with us or against us*", as previously discussed (*Us and Them: relating to challenging others*, 2009). Whether an individual is held to be suffering from a lifestyle disease may however also merit appreciation in terms of the last two conditions. This may be equally true of the health of planetary ecosystems. The distinction made by [Edward de Bono](#) between "rock logic" and "water logic" may be understood as between the first two conditions (together) and the last two (*I Am Right, You Are Wrong: from this to the New Renaissance -- From Rock Logic to Water Logic*, 1990).

With respect to this distinction, there is a charming degree of irony to the fact that inscribed on the gravestone of the poetic exponent of the last two conditions, namely [John Keats](#), is the phrase: *Here lies One Whose Name was writ in Water* (at his request). As Keats put it: *A man's life is a continual allegory - and very few eyes can see the mystery of his life - a life like the scriptures, figurative.*

A finer distinction might regroup the categories to distinguish "air logic" and "fire logic". The notorious poem of [Donald Rumsfeld](#) (*The Unknown*, 2002) drew attention to the distinctions with regard to the "known unknowns" from a strategic perspective, as discussed previously (*Unknown Undoing: challenge of incomprehensibility of systemic neglect*, 2008). It is of course Keats who articulated the aesthetic importance of [negative capability](#): *that is when man is capable of being in uncertainties, Mysteries, doubts without any irritable reaching after fact and reason.*

The question is how such subtlety might be associated with more appropriate responses to individual health and planetary ills. With respect to the latter, it has notably been reported by *Deutsche Welle* (February 2010) with respect to the UN Climate Change Conference that:

Professor Adil Najam from Boston University, one of the authors of IPCC's Fourth World Climate Report, the authors of which were awarded the Nobel Peace Prize in 2007 along with Al Gore, said that Copenhagen was not a success and not a failure....

Individuals are perhaps most aware of this level of ambiguity in interpersonal relationships (eg *she loves me; she loves me not; she loves me and she loves me not; she neither loves me nor does she not*). Typically these conditions are recognized at various times in the dynamics of that relationship. In that sense, assessment of the relationship alternates between four conditions and may only be sustainable because of its resilience in being able to do so. In relation to the environment, people expect to engage -- effectively to "dance cognitively" -- between the extremes of rocky-flat, wet-dry, windy-still, and hot-cold. This capacity is the essence of resilience and the appreciation of nature in all its forms, especially by [deep ecologists](#).

The argument here is that there is scope for exploring beyond simplistic understandings of what "is", whether from a scientific or other perspective. **The emphasis here is on the contrasting qualities of knowing and engagement with categories.** What "is", however this is asserted to be so, might then be understood as having the quality of "rock logic" in contrast with what it is asserted "not to be", namely "not-A" as contrasted with "A" in the table above). The certainty of both what "is" or "is not" is then to be contrasted with the uncertainties (*a la* Rumsfeld) between what might "both be and not be" or might "neither be nor not be". The suggestion is that these distinctions are reminiscent or echoed by the quality of the encounter with earth, air, fire and water -- then to be understood as mnemonic cues or metaphors. Contemporary tendencies to deprecate such distinctions is indicative of a form of cognitive entrapment - typically in rock logic.

Alternating between patterns of numbers and patterns of metaphors

Cognitively there is a danger of entrapment either in the formal discourse that "eclipses the lifeworld" (as noted by Rosen) or in an associative discourse which lacks a structure amenable to the existing methodologies and disciplines on which governance depends. For some mathematicians, there may indeed be an elusive poetry to numbers (Sarah Glaz and JoAnne Growney, *Strange Attractors: poems of love and mathematics*, 2008). Such comprehension is however only accessible to the few. Projecting integrative meaning -- vital to "health" -- into patterns of numbers, however rich and elegant to the eye, is problematic for most, whatever their satisfaction with pattern completion in *sudoku* (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008). The matter has been fruitfully discussed by [Marie-Louise von Franz](#) (*Number and Time*, 1974)

Dependence on numbers -- notably by administrative "bean counters" -- is intimately related to the danger of falling victim to the formal discourse challenged (above) by various authors. There is every probability that "health" is associated with a more appropriate relation to the "lifeworld", however that is to be understood. Indeed, in the case of [lifestyle diseases](#), it is this relation which has been severely undermined, as is recognized in their definition. Curiously the definitional focus on the disassociation from nature in the **lifestyle excesses of industrialized societies** obscures the dysfunctional relationship to the environment in the case of the impoverished in developing countries. They might be appropriately understood to be vulnerable to "**lifestyles diseases of deficiency**" rather than of excess. It is regrettable that the term should have been appropriated to imply that "lifestyle" is a condition characteristic of the relatively privileged, especially when the quality of life 'pre-development' has been recognized to be superior to that 'post-development' in many instances.

Arguably the ills of the planet as a whole arise from a similar disassociation from the lifeworld on the part of human society. This may to some degree be recognized through the increasing emphasis of government on narrative, photo opportunities and spin. Laurence Gonzales demonstrates that modern man has fallen into a pattern of creating scripts for his daily life that prevent him from thinking critically about his surroundings (*Everyday Survival: why smart people do stupid things*, 2008). Appropriately his study is itself praised for its narrative style.

Of interest therefore is the possibility of some form of hybrid cognitive device, perhaps a "metaphorical formalization", to serve as a kind of "cognitive prosthetic". This could catalyze and enable a healing process. It would be characterized by both the relational formalization of mathematics and the metaphoric richness with which people so readily engage. In the healing process it would effectively assist in "re-

membering" -- a "mnemonic catalyst" as mentioned above. Curiously the patterns and processes of the environment offer a rich source of metaphors to this end -- if not the richest.

The challenge is appropriately and fruitfully to "bond" metaphors cognitively to a formal structure. Aspects of this challenge have been explored previously (*Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009; *Geometry, Topology and Dynamics of Identity: cognitive implication in fundamental strategic questions and dilemmas*, 2009; *Metaphorical Geometry in Quest of Globality in response to global governance challenges*, 2009; *Topology of Valuing: psychodynamics of collective engagement with polyhedral value configurations*, 2008).

It is too readily assumed that the patterns appropriate to the healthy integration of individual or planetary systems, and of both together, are relatively simple and comprehensible. It is therefore useful to note the extreme forms of beauty and elegance detected by mathematicians in the most profound forms of symmetry held to be fundamental to the organization of the universe. Examples include the [Gosset 4₂₁ polytope](#) (an 8-dimensional semiregular uniform polytope composed of 17,280 7-simplex and 2,160 7-orthoplex facets) and the [Fischer-Griess Monster](#) a group of finite order ('a giant snowflake in 196,884 dimensions composed of more elements than there are supposedly to be elementary particles in the universe, namely approximately 8×10^{53} '). Known as the 'Monster', for mathematicians it might ironically be considered the essence of 'Beauty'. The significance of the Monster is briefly well-summarized by [Marcus du Sautoy](#) (*Finding Moonshine*, 2007; *Patterns that Hold Secrets to the Universe*). The clues to its existence gave rise to a literature on 'monstrous moonshine'. It is certainly monstrous in the challenge it constitutes to comprehension -- evoking a sense of deep 'unease', perhaps to be associated with 'disease'.

The question this raises is whether comprehension of this 'monstrous beauty' provides a vital key to 'health' -- as the ultimate form of beauty (*Potential Psychosocial Significance of Monstrous Moonshine: an exceptional form of symmetry as a Rosetta stone for cognitive frameworks*, 2007). Might it indeed involve processes highlighted in myths regarding the archetypal encounter between Beauty and the Beast? (*Poetry-making and Policy-making: arranging a Marriage between Beauty and the Beast*, 1993).

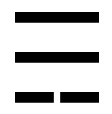

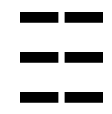



Tyger, tyger, burning bright
In the forests of the night,
What immortal hand or eye
Dare frame thy fearful symmetry?
(William Blake, 1757-1827. *The Tyger*)

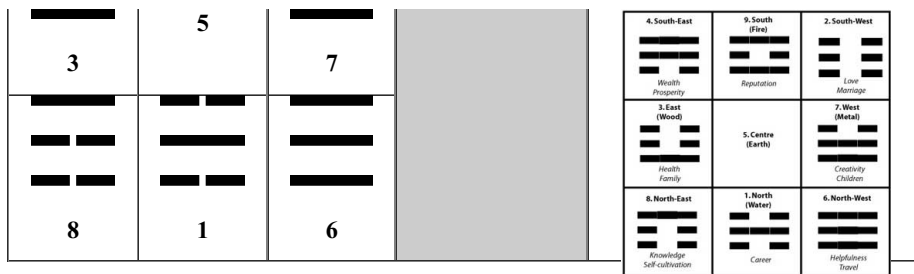
Possibility of an organic "metaphoric chemistry"

The panoply of organic molecules essential to life, based on the "benzene molecule", suggests the possibility of a "metaphoric chemistry" of some kind -- of relevance to quality of life. This might be analogous to the resonant structure of the benzene molecule -- essential to the constitution of living organisms -- perhaps even a form of "alchemy". This might be understood as a connective device for a variety of (complementary) metaphors such that each might take precedence under certain circumstances. The contrast between such metaphoric "organic chemistry" and a corresponding "inorganic chemistry" might be seen as equivalent to that between de Bono's "rock logic" and "water logic" -- both of course being essential to daily life as it is known.

Of great interest in this respect are the long-articulated and much-respected systems of the 64 hexagrams of the *I Ching* and the 81 tetragrams of the *Tao Te Ching* and the *Tai Hsuan Ching*. With the elements of each a metaphor is traditionally associated -- better to be understood as "cognitively bonded". Such metaphors have been the subject of extensive reflection and commentary. Arguably such hexagrams may be considered as a kind of cognitive analogue to the hexagonal pattern of the [benzene](#) molecule -- notably in the light of the alternation by which the latter is characterized as a [resonance hybrid](#) fundamental to life of any kind (*Patterns of Alternation: cycles of dissonance and resonance*, 1995). The representation of the benzene molecule is of course a conventional formalization of a dynamic articulated through [molecular orbital theory](#). This makes apparent that the benzene molecule is not as it is simplistically represented for human comprehension.

The six lines of an *I Ching* hexagram are made up of two trigrams. In Chinese culture, the set of 8 trigrams are conventionally widely represented in a [BaGua circular configuration](#) (often surrounding a "BaGua mirror") and held as such to carry some fundamental philosophical insights (cf *Stepping into, or through, the Mirror: embodying alternative scenario patterns*, 2008). That pattern is also related to the numeric arrangement of the Lo Shu magic square (above, and included in the representation below) and to the practice of *feng shui*. That practice points to valued traditional understandings of an interface between individual health and a "healthy" environment. References are indeed increasingly made to the use of *feng shui* in response to lifestyle diseases -- perhaps a case for further investigation, given the predictions of increase in such diseases and the challenge they seemingly pose.

Typical schematic representations of 8-fold Ba Gua (Pa Kua) Mirror with indication of common value attributions				
 4	 9	 2		
 8	 0	 7		



Playful quest for patterns of symmetry

The possibility of a methodology characterized by a tentative dynamic (as suggested above) can be usefully framed in terms of playfulness, as previously argued (*Playfully Changing the Prevailing Climate of Opinion: climate change as focal metaphor of effective global governance*, 2005). This dimension is notably evident in engagement with Rubik's cube and *sudoku* to achieve a "solution" -- and especially in sustaining interest in repeated pursuit of such a quest. The argument here is that the continuing quest for a desirable outcome through such a process can contribute insights into that of achieving and sustaining "health". Arguably there is a correspondence between "health" as "balance" and any "solution" as a pattern of "symmetry" -- especially when understood as the creative **process** of "patterning" balance and symmetry rather than any single **static** outcome. The oscillating bonds of the benzene molecule as a resonance hybrid might then even be understood as "playful".

From the perspective of [recreational mathematics](#) the approach is effectively one of playing with patterns of numbers. The 3x3 framework (above) can be used to highlight this. It suggests the question: what might be a balanced "healthy" pattern and how many constituents might be required to represent it meaningfully in the light of understandings of [requisite variety](#).

In terms of conventional science, such an exploration might then be extended to take into account the attribution of significance to such patterns, namely how they may be used to encode significance. The following two configurations originate with the efforts of [Edward Haskell](#), notably in the light of interaction between species in any ecosystem in a coaction cardioid (*Generalization of the structure of Mendeleev's periodic table*, 1972). The pattern has been further explored with respect to interactions in social systems by Timothy Wilken (*UnCommon Science*, 2001). Both have been used to explore sustainable relationships (*Cardioid Attractor Fundamental to Sustainability: 8 transactional games forming the heart of sustainable relationship*, 2005). Again these might be considered as indicative of a dynamic essential to health.

Corresponding representations of interactions 8-fold pattern of non-neutral relationships				
8-fold hybrid conditions of interaction between species (following Edward Haskell)				
(according to Timothy Wilken)				
		X = "Work component"		
		Negative	Neutral	Positive
Y = "Control component"	Positive	<i>predation</i> (positive negativity)	<i>allotrophy</i> (positive neutrality)	<i>symbiosis</i> (positive positivity)
	Neutral	<i>amensalism</i> (neutral negativity)	O (neutral neutrality)	<i>commensalism</i> (neutral positivity)
	Negative	<i>synnecrosis</i> (negative negativity)	<i>allopathy</i> (negative neutrality)	<i>parasitism</i> (negative positivity)

Y \ X	Lose	Draw	Win
Win	Lose,Win Net Neutrality	Draw,Win Net Synergy	Win,Win True Synergy
Draw	Lose,Draw Net Adversity	Draw,Draw True Neutrality	Win,Draw Net Synergy
Lose	Lose,Lose True Adversity	Draw,Lose Net Neutrality	Win,Lose Net Neutrality

The traditional Hindu system of design, *vastu shastra*, shares some directional and other features of the *BaGua*, notably in applications corresponding to those of *feng shui*. It is primarily applied in sacred architecture, although the principles are evoked in poetry, dance, sculpture, and the like. As with *BaGua* and *feng shui*, it now starts to be evoked with respect to the term "lifestyle diseases" in that it is specifically attentive to the interface between individual and environment, between local and global. According to *vastu shastra*, the world comprises five basic elements (earth, water, air, fire, space) with whom deities are associated as shown below.

Hindu/Vedic system of <i>Vastu Shastra</i> (comparable to the Chinese <i>BaGua</i> system)		
Northwest	North	Northeast - Ruled by lord of all

Vayu- Air (Advertisement)	Kubera- Wealth (Finance)	quarters- Ishvara (Religions, Luck and Faith)
West Varuna- Water (Physical)	Center Brahma - Ruled by the creator of the universe (Desire)	East Indra - Ruled by the solar deity- Aditya (Seeing the world)
Southwest Niruthi- Ancestors (History)	South Yama - Death - Yama (Damaging)	Southeast Agni - Fire (Energy Generating)

Comparable to the *BaGua*, these qualities are typically configured as a mandala suggestive of a completed pattern. As such the configuration has spiritual and ritual significance in both Buddhism and Hinduism -- notably with their implications for health. In the light of the advocacy here of a "playful" *Neti Neti* approach, such mandalas may be developed with varying numbers of elements -- as is the case with development of the *BaGua* into the concentric circles of the **geomantic compass** (*luopan*) as used in *feng shui*. Thus the *vastu shastra* mandala may be structured in terms of:

- a single square: 9 squares set in 1 (*Pitha*), or 25 set in 1 (*Upapitha*)
- a four-fold square: 16 squares (*Mahaapitha*), 36 squares (*Ugrapitha*), or 64 squares (*Manduka*)
- a nine-fold square: 49 squares (*Sthandila*), or 81 squares (*Paramasaayika*).

Those considered of greatest interest are of 64 squares and 81 squares -- equivalent in the Chinese context to the 64 conditions of the *I Ching* and the 81 of the *Tao Te Ching* (and of the *Tai Hsuan Ching*). The larger nested patterning is again reminiscent of the more familiar, complex *sudoku* patterns -- those considered more challenging. They are also reminiscent of the patterning challenges of the board **game of go**.

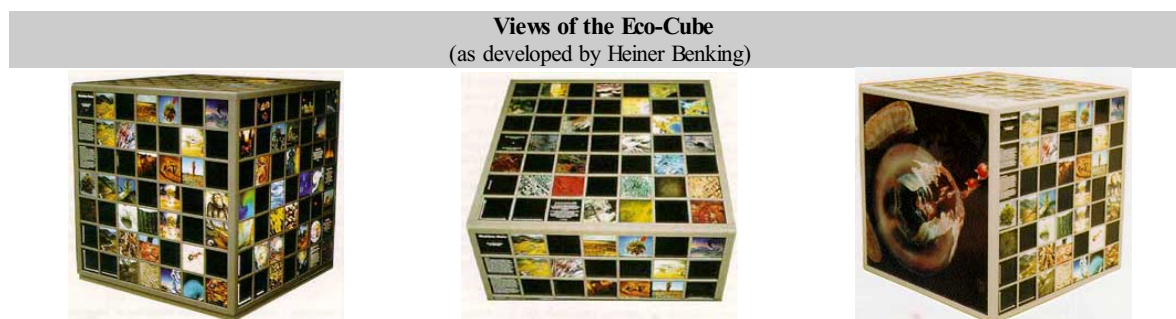
Of special interest in the case of the *vastu shastra* is its relation to aesthetic principles and appreciation -- epitomizing the sense of balance and its exploration, notably through the dynamics of dance and music. The term used to distinguish the possible set of dominant emotional-mental states evoked in any such work is *rasa*. However the significance of such *rasas* is variously interpreted in different styles of performance. One exposition distinguishes the 8 *rasas* as: *Rati* (love), *Hasya* (mirth), *Soka* (sorrow), *Krodha* (anger), *Utsaha* (energy), *Bhaya* (terror), *Jugupsa* (disgust), and *Vismaya* (astonishment).

Appropriately perhaps in the light of any dancing aesthetics implied by *Neti Neti*, the combination term *rasa shastra* traditionally refers to the "science of mercury" with its alchemical connotations concerning the removal of toxic elements, engendering therapeutic outcomes. Thus **ayurvedic medicine**, as the science of working with minerals, is named after *rasa* (mercury). The common metaphor of a "mercurial mind" is appropriately consistent with any playful approach to patterning.

Given the familiarity with the 3x3x3 Rubik's Cube, of interest is how significance attributed to the 9 elements of a single face may be "developed" (with whatever variations) using all 6 faces of such a cube. How, for example, might it be used to represent patterns of *rasas* and the quest for aesthetic "solutions"? There is an extensive literature on the range of patterns which might be explored (*Rubik's Cube patterns*; Christoph Bandelow. *Inside Rubik's Cube and Beyond*, 1982; Alexander Frey, Jr. and David Singmaster, *Handbook of Cubik Math*, 1982), some with extensive applets (Walter Randelshofe, *Pretty Patterns*). The question is of course how any given pattern might be associated mnemonically with a condition of health for individual or planet -- and how progress towards any "solution" might be sensed on indicative of greater health.

Pointers to possibilities: Ekistics, Dymaxion World and Eco-Cube

The metaphor offered by Rubik's Cube was used by **Heiner Benking** to develop a "**Rubik's Cube of Ecology**" in 1990 (as part of the **Global Change** touring exhibition) as a means of explaining the nature of integration and of developing a framework for co-ordination and harmonisation across various fields, areas, regions, disciplines and domains (*Visual Access Strategies for Multi-Dimensional Objects and Issues*, 1993). It was designed to offer a new world view, using a hyperlinked Eco-Cube, for better understanding and communication about multi-disciplines like ecology.



The Eco-Cube is reminiscent of the Ekistics Grid developed by **C.A. Doxiadis** as a framework for organizing information relevant to **ekistics** as the science of human settlements. This has been used to further develop ekistic concepts, and also in the application to practical problems. Such a grid display any component within two dimensions at a point of intersection of abscissa and ordinate. The abscissa of ekistic units remained constant in all uses of the ekistic grid, and the most usual ordinate consisted of the five ekistic elements: Nature, Anthropos (Man), Society, Shells (dwellings or buildings), and Networks, with a sixth line denoting their Synthesis.

There is also an affinity in such approaches with that of **R. Buckminster Fuller** in his concern with global use of resources and energy -- reflected to a significant degree in his polyhedral *Dymaxion Map*, its animations and his underlying philosophy, as discussed elsewhere

(*Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009; *Geometry, Topology and Dynamics of Identity: cognitive implication in fundamental strategic questions and dilemmas*, 2009).

It is appropriate to note that *Windows* offers a 2D picture puzzle that resembles Benking's original inspiration from Rubik's Cube (*How to Play with Puzzles in Windows Vista*). Other such picture puzzles are widely available on the web, notably allowing users to substitute their own pictures.

Such initiatives with respect to the environment raise the question as to whether equivalents might be developed with respect to individual health -- and its relationship to any environment through lifestyle diseases. The latter are implicitly of concern in the comprehensive approach to settlement design -- notably as subtly explored by environmental architect **Christopher Alexander** in his concern with contexts offering qualities where it was "good place to be" (*A Pattern Language*, 1977; *The Timeless Way of Building*, 1979).

Health and sustainability through the dynamics of patterning

The argument stressed here is that neither individual health nor ecosystemic sustainability (nor illness and unsustainability) can be considered solely in terms of a desirable (or undesirable) **static** condition. Both call for any adequate recognition to be associated with a **dynamic** pattern relating a set of conditions, namely a healthy dynamic or a sustainable dynamic.

This argument has been explored elsewhere with respect to various patterns (*Sustainability through Magically Dancing Patterns: 8x8, 9x9, 19x19 -- I Ching, Tao Te Ching / Tai Hsüan Ching, Wéiqi (Go)*, 2008).

Part of the challenge to understanding is the conventional tendency in favour of **static representations**, typically constrained by technology in the past. However web-based representations permit a degree of exploration of **dynamic patterns** -- alternating or cycling through particular configurations (*Animation of Classical BaGua Arrangements: a dynamic representation of Neti Neti*, 2008; *Dynamic Exploration of Value Configuration: interrelating traditional cultural symbols through animation*, 2008; *Configuring Global Governance Groups: experimental animations and video sequences*, 2008).

Cognitive patterns of environmental significance

Potential relevance of traditional patterns: Many traditional systems of health use environmental categories as a means of describing imbalances associated with disease. As in the case of the theory of **humorism**, all diseases and disabilities resulted from an excess or deficit of one of these four humours (**black bile**, **yellow bile**, **phlegm**, and **blood**). These have also been associated with the **four temperaments**.

Correspondences between systems of categories			
Humour	Element	Qualities	Temperament
blood	air	warm and moist	sanguine
yellow bile	fire	warm and dry	choleric
black bile	earth	cold and dry	melancholic
phlegm	water	cold and moist	phlegmatic

The argument here is not to challenge the deprecation of such correspondences by modern medicine but rather to highlight the possibility of fruitful associations between externally experienced environmental categories and those of health and disease that are experienced "from within".

Potential relevance of a game-playing perspective: Separately it has been argued that the explosion of interest in interactive game-playing, facilitated by web technology, could be of relevance to the challenges of climate change (*Playfully Changing the Prevailing Climate of Opinion: climate change as focal metaphor of effective global governance*, 2005). It is possible that such arguments could be extended to engagement with disease associated with environmental categories.

The argument there was based on the distinction made between zones of "game-play space" as having qualitative attributes contrasting to the same degree as "earth", "air", "water" and "energy" -- physically fundamental to issues of climate change. In purely physical terms these distinctions are of course a consequence of the nature of the bonds and the dynamics between the atoms in each case. These might then be understood as corresponding to a degree to the distinctions made above between various "logics" (rock logic, water logic, etc).

As noted with respect to game-playing, such four-fold distinctions are fundamental to the symbolism of various kinds of symbolic games. In exploring metaphoric transformation, as it may prove meaningful both in such games and with respect to different kinds of "logic", distinction can be usefully made as in the table below.

	Vehicle (the subject from which the attributes are <i>derived</i>)	Tenor (the subject to which attributes are <i>ascribed</i>)
structure (geometry, topology)	atomic properties (eg ice vs liquid water)	psychic properties
dynamic	transformation (eg ice to water)	caterpillar to butterfly*
aesthetic		

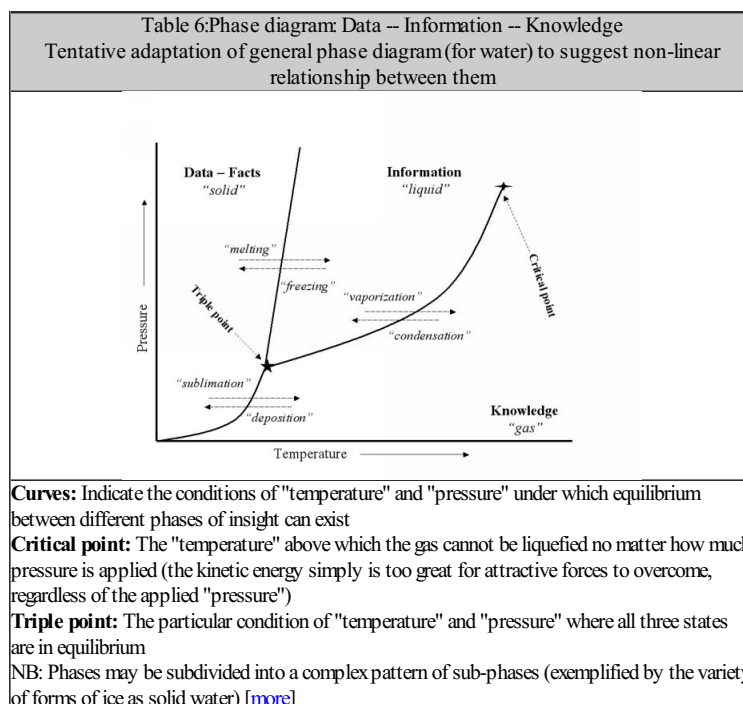
The above table is important in providing a link between the concept of "rules" and that of "play". In effect, in the four-element metaphor, the "rules" are associated with the rigidity of the molecular bonds (being most rigid in the case of crystalline ice). However "play" is associated with the degrees of freedom of the molecules -- which increases through transformation to water or to "fire" (where they are positively or negatively ionized). The contrast in a political sense is seen between a rule-bound society and one in which there is a high degree of "freedom of association" -- whatever the risk of disruptive crowd behaviour.

Phase diagram: As explored elsewhere (*The Isdom of the Wisdom Society: Embodying time as the heartland of humanity*, 2003), such distinctions might then correspond to the stages of reification as the quality of knowing in the moment "hardens" into objective reality -- passing through analogues to the states of matter (plasma -- gas -- liquid -- solid):

- wisdom *as a plasma stage?* This analogue is consistent with the often fiery quality of wisdom in the heat of creation through which structures are envisaged, formed and reformed
 - tingle within an individual / group
 - play like birdsong echoing -- resonant structures
 - entrains in a dance -- birthing and rebirthing
- knowledge *as a gaseous stage?* This analogue is consistent with recognition of the "hot air" so often perceived to be characteristic of knowledgeable discussions ("up in the clouds")
 - categorization
 - relationships
 - associated pigeonholes -- pattern language
 - semantic web
 - patents
- information *as a liquid stage?* This analogue is consistent with the recognition of "information flows"
 - grid structure
 - data arrays
- data *as a solid stage?*
 - facts, data points

A possibly more fruitful metaphor than this linear sequence is that of a [phase diagram](#) such as that for water [\[more\]](#). This is a representation of the states of matter (solid, liquid, or gas) as a function of temperature and pressure. Lines separating the regions of space indicate the pressures and temperatures where phases can coexist and are in equilibrium with one another. Lines in the phase diagram may intersect at a point where solid, liquid, and gas all coexist -- a unique "triple point". Similarly a "critical point" may exist that is characterized by large fluctuations between the liquid and vapor states. Such diagrams are also used in describing the conditions of plasma -- understood as an ionized gas [\[more\]](#). Plasma is however characterized by much higher temperatures and pressures.

A highly simplified diagram of that type is adapted below to show the variety of relationships between the different forms of insight -- especially indicating that the transition from **data** to **knowledge** may not necessarily pass via **information**. It suggests possibilities for resolving definitional ambiguities associated with any assumed linear progression between them..As the extreme ionization of gas, plasma is not directly represented in the diagram (it would be far to the right). The diagram does however suggest possibilities of exploring the ionization metaphor in relation to knowledge -- and the corresponding implication of the bonds in the case of solids, liquids and non-ionized gases. The adaptation calls for a metaphoric equivalent to temperature and pressure -- which are both commonly used metaphorically in insight-related processes (eg "feeling the heat", "under pressure", etc).



Of special interest are the implications for the transitions across the boundaries, such as sublimation (from data to knowledge) and deposition (from knowledge to data). The more tenuous bonds between elements of knowledge (corresponding metaphorically to atoms or molecules in a gaseous state) call for exploration in the light of implications of some equivalent to ionization. Aspects of this may be intuited in language used to describe the degree of "excitation" of a debate, whether academic or otherwise. Note that such excitation in an exciting meeting, for example, does not necessarily make for the conditions with which wisdom is associated. This may be more closely associated with the intensity of that excitation and how its focus and coherence can be sustained.

Dynamics of polyocular and multifaceted cognitive framing: navigating the adaptive cycle

If both health and sustainability are indeed to be understood in terms of a dynamic, the challenge is how to comprehend that dynamic and to communicate that understanding -- avoiding entrapment in Maruyama's 'subunderstanding'.

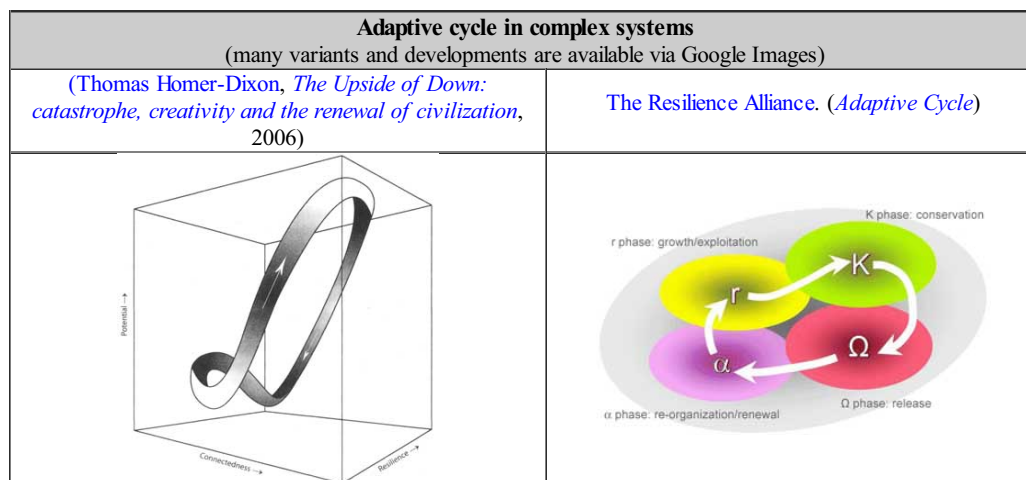
The phase changes in the environment, so evident in the transformations of water under different conditions of weather, give a sense of that dynamic and an expectation of change. These patterns of change may be less evident in the individual or in psychosocial systems. They can be articulated in some detail, as traditionally suggested by the encoded conditions of the *I Ching* and the transformations between them (*Transformation Metaphors: derived experimentally from the Chinese Book of Changes for sustainable dialogue, vision, conferencing, policy, network, community and lifestyle*, 1997). Greater focus to the pressure for such change, and ensuring requisite variety for healthy response, is suggested schematically by the arguments of Edward de Bono, notably for corporate environments (*Six Thinking Hats*, 1985; *Six Action Shoes*, 1991; *Six Value Medals*, 2005; *Six Frames For Thinking About Information*, 2008).

Timing: Nevertheless, missing from such pointers, is the appropriateness of any shift or alternation -- as typically associated with a sense of timing in music (and **jamming**), song (polyphony) and dance. These have been used as indicators to timing in other domains (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006; *John Kao, Jamming: The Art and Discipline of Business Creativity*, 1996). This sense of timing may notably be evident to a degree from the analysis by **Scott Boorman** of why the USA failed to win the Vietnam wa. The analysis was made in the light of a comparison of *go*-strategy with chess-strategy (*A Protracted Game: a wei-ch'i interpretation of maoist revolutionary strategy*, 1969).

This raises the possibility that a "*wei-ch'i* strategy" may merit exploration with respect to "climate change" and other global strategic challenges, in addition to those of individual health -- especially given the tendency to frame both in terms of "war" and "campaign" (*Post-crisis opportunities: Global strategy and the game of go*, 1995). Consideration might, for example, be given the reframing of the ongoing crises of the Middle East and of Afghanistan through poetry and myth (*Poetic Engagement with Afghanistan, Caucasus and Iran: an unexplored strategic opportunity?*, 2009; *Relevance of Mythopoeic Insights to Global Challenges*, 2009).

Crop rotation: Of interest is the case for the traditional seasonal pattern of crop rotation. The question raised by de Bono is effectively one of "cognitive crop" rotation vs monocultural "cognitive cultivation" with "fertilizer" (*Sustainable Cycles of Policies: Crop Rotation as a Metaphor*, 1988).

Thermodynamics of the work cycle and the adaptive cycle: More intriguing is the sense in which a succession of phases may be associated with a cognitive equivalent to the thermodynamic workcycle, as previously explored (*Psychosocial Energy from Polarization - within a cyclic pattern of enantiodromia*, 2007). Of interest in this respect, is the relation to the **psychosocial resilience** required in response to lifestyle disease and engagement in any **adaptive cycle** (through **adaptive management**). At the level of global civilization, such concerns are central to the argument for future human survival as articulated by **Thomas Homer-Dixon** (*The Upside of Down: catastrophe, creativity, and the renewal of civilization*, 2006).



The representation of the adaptive cycle above by The Resilience Alliance is derived from the comparative study of the dynamics of ecosystems. It is specifically intended as "*a tool for thought. It focuses attention upon processes of destruction and reorganization, which are often neglected in favor of growth and conservation*".

'Human thermodynamics': The theme might indeed be explored in terms of **human thermodynamics**. This is the study of the **energy** and **entropy** aspects of the work **cycles** involved in **human life**, namely those existent between **heat**, **spontaneity**, **irreversibility** and the **laws** defining therein -- as articulated in a wiki-based *Encyclopedia of Human Thermodynamics*:

It is the study of heat and its relation to the motion and changes in the [equilibriums](#) of human bodies. The essential process of thermodynamics is that whereby heat [cycles](#) through a system of [chemical species](#), e.g. water [molecules](#) in a [steam engine](#) or [human molecules](#) in a [social system](#) ([sociological thermodynamics](#)) and thereby mediates the production of work. In simple terms, heat, in the form of gamma-ray [photons](#), cycles from the sun, the systems are coupled economies, the chemical species are people, and the work is the work of life. The four [laws of thermodynamics](#) define the boundaries of this action.

Skateboarding and aerobatics: As discussed separately it is curious, if not remarkable, that many who are readily framed as least likely to be interested in comprehension of the complexity of the adaptive cycle are to be found exploring highly complex surfaces by [skateboarding](#) over them to the limits of their kinetic skills (*Skateboarding pointers to comprehension of multi-dimensionality*, 2006). Skateboards first emerged, as a historical coincidence, within the same decade that [Rene Thom](#) was developing [catastrophe theory](#). They are notably associated with a counter-culture that contests a particular consumer-oriented development of public commercial space and seeks to engage with that space in new ways (cf Ocean Howell. *The Poetics of Security: Skateboarding, Urban Design, and the New Public Space*, 2001). Their significance has been compared to that of the [Situationists](#). The surfaces are constructed as [skateparks](#) by progressive local communities and public institutions, or (possibly more questionably) as commercial ventures. Some are of relatively simple configuration; others are highly complex [[more](#)]. The dynamic of movement through such a space is central to the geometry of skatepark design. As also discussed, such movement offers other clues to the cognitive challenges of the times (*Navigating Alternative Conceptual Realities: clues to the dynamics of enacting new paradigms through movement*, 2002).

Polyocular and polysensorial requirement for navigation: The argument of Magoroh Maruyama for polyocular vision has been discussed elsewhere (*Epistemological challenges: De-categorization and poly-ocular vision*, 1995; *Epistemological challenges: Mindscapes*, 1995). There is a curious sense in which humanity aspires mistakenly to dependence on a singular 'cyclopean' vision without recognizing the depth of perspective acquired through stereoscopic 'vision' dependent on multiple eyes or the value of multiple senses (*Cyclopean Vision vs Poly-sensual Engagement*, 2006; *Metaphor and the Language of Futures*, 1992). Strategic discussion of the future is typically framed within the vision metaphor, precluding the use of other senses which evolution has long demonstrated to be complementary (*Strategic Challenge of Polysensorial Knowledge: bringing the 'elephant' into 'focus'*, 2008).

Within the framing of the vision metaphor, the cyclopean aspiration would seem to be an aberration. At the other extreme, any sense of polyocular raises questions about evolution from multifaceted, [compound eyes](#) of insects to the advantage of stereoscopic vision. This in turn raises questions about the dysfunctionalities of 'strategic eyes' -- such as the myopia of which policy makers are frequently accused -- and the lack of concern for the need for 'eye testing' and 'corrective lenses'. On the other hand the capacity to represent the universe in a planetarium might be understood as the requirement for multiple lens systems to represent encompassing globality.

Ironically the desperate aspiration to a singular universal 'vision' is dramatically challenged worldwide by conflicting 'world views' -- whether of ethnic, linguistic, cultural, political or academic origin. The level of violence these engender is an indication of the inadequacy of simplistic efforts to 'heal' such dysfunctionality through 'tolerance' (*Guidelines for Critical Dialogue between Worldviews*, 2004). Just as there is a case for using some form 'polymodelling' in framing global challenges, it would appear that this points to the future possibility of recognizing polycultural complementarity analogous to the relation between the species of the natural environment. Both would appear to depend on understanding of complementarity amongst sets of metaphors -- beyond the insight into the [binary complementarity between wave and particle theories of light](#).

Cognitive 'twist': Whether understood metaphorically in terms of the polyocular or polysensorial needs for viable aerobatics, the challenge of navigating the adaptive cycle essential to the survival, integrity and 'health' of any system would seem to require the capacity to engage in a non-linear 'cognitive twist' illustrated by the contortions of the figure above. The challenge of such a twist has been discussed elsewhere (*Enantiodromia: cycling through the 'cognitive twist'*, 2007).

There is every reason to suspect that the cognitive challenge of the times calls for engagement with high orders of 'twistedness', if only to counter the deviousness now widely recognized in the response to the challenges of global governance (*Twistedness in Psycho-social Systems: challenge to logic, morality, leadership and personal development*, 2004; *Engaging with Questions of Higher Order: cognitive vigilance required for higher degrees of twistedness*, 2004). The need for twistedness in DNA, as the key to human integrity over generations, suggests the potential relevance of such complexity to navigating the adaptive cycle (*DNA Supercoiling as a Pattern for Understanding Psycho-social Twistedness*, 2004).

There is a charming irony to the fact that recognition of the need for any such 'twist' may have been culturally prefigured by the worldwide popularity of the [twist as a dance](#) contrasting with previous modes of dance. It might then be expected that any 'cognitive twist' would arouse similar hostility from mainstream critics, notably with regard to its 'provocative movements' (cf *Intercourse with Globality through Enacting a Klein bottle*, 2009; *Global Governance via a Double-breasted Strange Attractor*, 2009).

Return to main paper: [Cognitive Implications of Lifestyle Diseases of Rich and Poor: transforming personal entanglement with the natural environment](#) (2009)



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