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Union of Intelligible Associations

remembering dynamic identity through a dodecameral mind

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See associated PDF slide presentation with images, notably relating to higher patterns of order: *Union of Intelligible Associations: integrative design metaphors enabling strategic comprehension of the global brain*. For further information on this strategic initiative, see website of [Union of Intelligible Associations](#)

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Introduction

Much has been made of the implications of globalization in its extensive geopolitical, economic and communication terms. The psychocultural implications have been far less intensively explored.

The information focus of the century-old Union of International Associations has highlighted the role of international membership bodies and their networks in giving form to the global society of the 21st century -- and in articulating its challenges and opportunities. But the knowledge society of the new century is no longer dependent on the communication networks sustained by such bodies -- as is notably evident in the emerging global role of the web, its search engines, and the patterns of organized interaction that they sustain through listservs, newsgroups, forums, and the like. These are precursors of the emerging semantic web -- potentially the key underpinning of the knowledge society.

Essentially the constraining boundaries of sovereign "nations", between which "international" associations provided a vital bridge, are now far less significant. The challenge to global coherence, now primarily explored under the theme of "global governance", is of a different nature. The significant bridge of the future is no longer "international" and perhaps can only be adequately understood through a complex of complementary terms. The nature of the "boundary" to be traversed is now quite different -- as with what is thereby bounded.

The purpose in what follows is to identify the semantic bridging modalities vital to future global coherence and thereby to cultivate reflection on the nature of both the "union" and of the "associations" that may therefore be implied.

Bridging modalities

Reframing a "union" of "associations"

	?	
	Indicative	
	Inductive	
	Incongruous	
	Integrative	
	Interrogative	
	Incommensurable	
	Intelligent	
	Invented	
	Imaginary	
	Innovative	
	Intriguing	
	Immanent	
	Intentional	
	Illusory	
Union of	Ignorant	Associations
	Interesting	
	Imaginative	
	Intuitive	
	Interdisciplinary	
	Independent	
	Irresponsible	
	Impossible	
	Intractable	
	Incompatible	
	Ideal	
	Inspiring	
	Instantaneous	
	Implied	
	International	
	?	

Significance

"Union of": In logic this term denotes a combination, or joining, of elements, or sets, in the most abstract and general sense. In its work over the past century, the Union of International Associations has emphasized the social and organizational interpretation of such combinations -- namely how "organizations" can coordinate and integrate their activities (cf *Yearbook of International Organizations*). Some of that work has however pointed to the unions of subjects, problems, disciplines, strategies, values and understandings of human development, in various explorations of the possibility of more fundamental integrative dimensions (*Encyclopedia of World Problems and Human Potential*). This implies the possibility of a deeper commitment to a much subtler and more abstract approach to union as a form of conceptual "keystone" -- however that is to be understood as an integrative container for meaning.

The conceptual challenge of the nature of any such "union", and of how it is to be understood and given form, is therefore a continuing one, rather than already determined and thus readily definable. The common social or institutional emphasis is merely one specific and important aspect of this. Richer and subtler insights should emerge from new understandings of how seemingly incompatible perspectives and functions can be provided with a more dynamic integrative framework. This challenge might well be considered as central to the problem of governance at this time.

In this exploration other understandings of "union" could have been used, such as "order", "centralization", "unification", "coordination" or "harmonization". However "union" seems appropriate for the exercise in avoiding excessive stress on the imposition of a pattern -- rather than on its emergence.

"Associations": In any discipline concerned with relationships, this term emphasizes patterns of those relationships. In psychology and humanistic studies, an association is indicative of connectedness going beyond any more obvious direct linkage. The connectedness may be partly dependent on an aesthetic dimension through patterns of resonance rather than linkages or bonds. In its own work, the Union of International Associations has invested heavily in documenting networks, namely the many types of relationship between organizations typically represented by links, or even hyperlinks. To some degree this has been extended to associations between subjects, between values, between problems, between strategies, and the like -- notably in the form of feedback loops and of complexes of interlocking feedback loops.

The pattern of relationships between social groupings, which constitute an "association" or organization, is merely a specific social manifestation of such association. Recognizing such patterns is central to the challenge of sustainable development and its dependence on

"civil society" structures. However, what may be meaningfully "associated" and the nature of any such "association", remains open to exploration. Wormholes through the universe of knowledge -- "semantic wormholes" -- may, for example, emerge as significant.

In this exploration, as with "union", other terms than "association" could have been used, notably those signifying "variety", "diversity", "complexity" or "chaos". However "associations" seems appropriate for the exercise in allowing for subtler forms of relationship, notably those valued in aesthetics, intuition and creative insight.

"International": The Union of International Associations has long been sensitive to the many variant interpretations of "international", including significant contrasts that might be held by the distinctions made between "international", "transnational", "multinational", "cross-national" and the like -- whether in theory or in practice. Much emphasis has also been placed on international as including inter-cultural, namely that which crosses not only geopolitical boundaries but also belief systems of different kinds. This may implicitly include bridges between languages -- whether spoken or conceptual. In effect the UIA has responded to the challenge of relationships between psychosocial territories or fiefdoms, seen as representing apparently legitimate differences of perspective. Recognizing relationships and complementarities between such functional territories is essential to any response to social fragmentation and to emerging understandings of "world", "global" and "universal".

But, as noted above, the significant bridge between the "territories" of the future has a highly non-geographical emphasis. "International" is but one bridging dimension in the emergence of subtler and richer meanings of "global". The nature of the boundary to be traversed, and the complementarity between bounded "zones", is now quite different.

Phase shift or transposition of key

In its conception, and at its origin at the beginning of the 20th century, the Union of International Associations endeavoured to provide a two-fold template:

- a degree of integration of knowledge (through the direct involvement of its founders in the classification sciences, notably in the development of the [Universal Decimal Classification](#) system)
- a sense of the possibility of a degree of integration between the diverse preoccupations of international bodies in every field of human activity, potentially leading to some form of "coordination" or "harmonization", however that might be understood. This was first explored in 1910 through the *Annuaire de la Vie Internationale*, subsequently to become the *Yearbook of International Organizations*

Whilst these do indeed remain of some significance, their function in those terms is no longer as strategically central. Rather it might be said that that role is merely one manifestation of a more generic challenge. From a governance perspective, this could be described in terms of identifying and managing disparate manifestations of significance -- whether by the individual, by a group, or on behalf of them. Such "significance" could be increasingly understood as associated with the discourse about a "semantic web", about the "memetic" challenges of the coming century, or in the light of the many expressions of concern about apathy, notably of youth or the electorate.

In such generic terms, any phase shift beyond the particularities of a "Union of International Associations" is therefore towards some new understandings of the intelligent channelling and focusing of psychosocial energies. This calls for new insights into the necessary coherence or "union" as well as the patterns of "associations" that can lead to the emergence of such a focus.

It is through the following play on Union of "Intelligent" Associations that a phase shift can perhaps be understood (cf *Playfully Changing the Prevailing Climate of Opinion: Climate change as focal metaphor of effective global governance*, 2005). In musical terms, this can be understood as a transposition of key (cf *Knowledge Gardening through Music: patterns of coherence for future African management as an alternative to Project Logic*, 2000; *Paradigm-shifting through Transposition of Key: a metaphoric illustration of unexplored possibilities for the future*, 1999). Introducing alternatives to "international" also evokes alternative semantic emphases on the nature of any containing "union" and the nature of any linking "association". These complementary possibilities may point to subtler cognitive insights that together constitute a container for more profound understandings of value to any future form of governance.

Qualifying cognitive modalities

In the following table an effort is therefore made to identify a range of other bridging dimensions -- best to be understood as complementary as is later argued. For the purposes of this exercise, and as a mnemonic device, the "playful" transposition of qualifiers substituting for "international" is restricted to terms commencing with the same letter.

It is the "union" between the "associations" characteristic of each resulting semantic dimension that is the challenge for the emergent understanding of "global". Beyond the **static emphasis** of any "State of the Union", such understandings of "global" may increasingly have a **dynamic emphasis**, perhaps exemplified by the dynamics of aesthetic resonances.

What could any one of the following "qualifiers" suggest as to the nature of the bridge between "union" and "associations" -- and as to the nature of "union" itself and the diversity it encompasses?

Bridging between "union" and "associations"			
Code	Focus	Signifying	Not signifying
CF	Intentional	Carriers of intentionality, sense of direction and purpose. Exemplified by the commitment of intentional communities.	Forms of intentionality focused on action unrelated to a sense of coherence.
CF	"Inactive"	Doing-without doing, as exemplified by enactivism	Inactivity in the conventional sense

FE	Independent	Un beholden to any particular institution, profession, discipline, belief system or source of funding.	Lack of engagement in society, conceptual frameworks
FE	Individualistic Idiosyncratic Iconoclastic	Exploring patterns irrespective of their possible relationship to those favoured by others	
FE	Irresponsible	Un beholden to restrictive patterns of the past.	Failure to respect antecedents and those who honour them.
MA	Imaginary	As cultivated by the creative in inventing and exploring new possibilities in every field, whether or not these are anchored in concrete reality. Exemplified by explorations of imaginary societies, whether utopias or dystopias, as vehicles for analysis or catalysts for the imagination.	Undisciplined fantasies
MA	Illusory		
MA	Indicative		
CW	Inclusive	Frameworks designed to avoid excluding particular perspectives however incompatible they may appear to be	
CW	Integrative	Relationships understood as forming a larger pattern of comprehension than the particular perspectives so brought together	
CW	Intercultural	Relationships transcending cultural, ethnic and linguistic boundaries	
CW	Interfaith	Relationships transcending particular belief systems	
CW	Interdisciplinary	Interrelating distinct disciplines, whether intellectual or otherwise (as notably distinguished by Paul Feyerabend). Including, more generally, the preoccupations of transdisciplinarity.	Interdisciplinarity as narrowly restricted to bilateral relations between academic disciplines or achieving their focus through a particular project.
CW	International	Relationships transcending national boundaries	
FF	Intuitive	Calling directly upon the intuition, bypassing conventional intellectual modes of understanding. Exemplified by certain forms of strategic understanding, or an intuitive sense of design and "goodness of fit".	Dependence on superstition
FF	Incipient		
FF	Instantaneous	Necessitating immediate response in the light of a more fundamental sense of coherence	
FF	Impatient	Recognition of the inappropriateness of delay	
ME	Impossible Improbable Incredible	The challenge of what cannot be achieved through existing mindsets and patterns of behaviour	Hopeless entrapment in what cannot apparently be resolved
ME	Incompatible	Distinct forms of understanding or action that are apparently not susceptible to more coherent relationship with others	
ME	Inappropriate Inadequate		
ME	Incommensurable	Domains that do not lend themselves to comparison through the same metric or system of evaluation	
ME	Incongruous	Juxtapositions that are inherently odd, evoking the need for new modes of comprehension and conceptualization	
ME	Intractable	Patterns of thought, action or belief that are alienated by any form of encompassing framework through which they might be reconciled with perspective antithetical to theirs	
CA	Ideal	Higher forms of order, exemplified by Platonic ideals	
CA	Inspiring	Giving form to subtler and richer attractions of higher dimensionality than the patterns of conventional constraint.	
FW	Ignorant	Insights that have not been informed by wider understandings, possibly for lack of opportunity, but nevertheless provide patterns through which behaviour is ordered.	Simplistic promotion of ignorance as a desirable condition.
FW	Indefinite	Suggestive subtleties of the underdefined and forms of pre-emergent order	
FW	Interrogative	Evocative of new and unforeseen questions	
MF	Intriguing	Distinct from the purely interesting through the subversive implications for reframing existing understandings of order	As exemplified by the psychosocial structures and processes of "intrigues".

MF	Interesting	Unusual patterns suggestive of new challenges and possibilities. Exemplified by the recognition of interesting problems in mathematics and engineering.	Curiosities and trivia of minimal wider significance
CE	Inductive	.	.
CE	Innovative Inventive	Exploration of imaginative new possibilities that can be grounded in new social patterns and supported by appropriate electronic communication protocols	Forms of innovation that are purely imitative, fail to respond to urgent needs, or lack a convergent focus
FA	Intelligent Intelligible	The subject of conscious reflection, as in "the unexamined life is not worth living". Exemplified by the multiple forms of intelligence : linguistic, logical-mathematical, musical, spatial, bodily kinesthetic, interpersonal, intrapersonal, and naturalistic.	Intelligence, in the sense promoted and practiced by "intelligence agencies", or the exclusivist perspectives of those preoccupied with high IQ. Groupthink mmm
FA	Informed/ ative Instructive Insightful	.	.
FA	Identifiable	.	.
FA	Impersonal	.	.
MW	Immanent	Notably described in terms of entelechy as the underlying source / wellspring / ground of lived experience; a felt sense of good/fitting/appropriate timing in personal and social behaviour	A primary focus on the religious implications of immanence
MW	Invisible	Exemplified by Heraclitus: "The unapparent connection is more powerful than the apparent one".	.
MW	Implied Intrinsic	Implicate, indirect	.
MW	Intimate Involved	.	.
??	Isophoric	.	.

Higher patterns of order

The "qualifiers" in the table above may lend themselves to significant ordering to respect the variety they represent -- and may need to reflect in terms of Ron Asby's [Law of Requisite Variety](#) if they are to be of relevance to governance of complexity. They have been tentatively clustered into 12 groups in emulation of the archetypal "roundtable" fundamental to the juxtaposition of perspectives purportedly relevant to governance -- as justified below in terms of the geometrical constraints giving rise to 12 degrees of freedom. The 12 qualifiers might be understood in terms of:

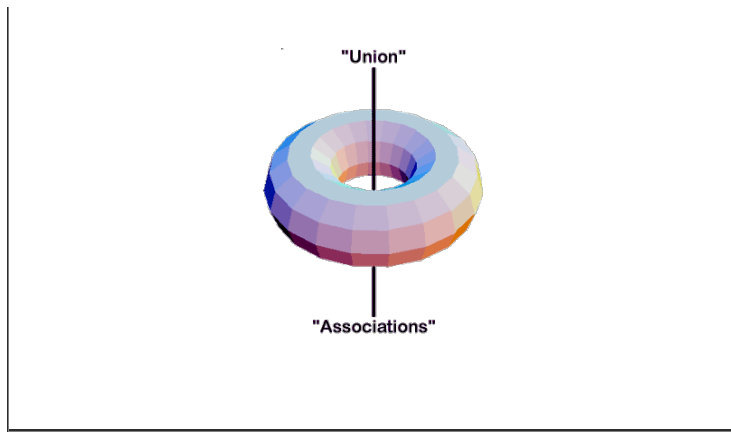
- "seats at the roundtable" (cf *Pattern of Meeting Participant Roles: Shadowy 'roundtable' hidden within every meeting*, 1993; *Spherical configuration of interlocking roundtables: Internet enhancement of global self-organization through patterns of dialogue*, 1998; and, according to Arthurian legend, George Trevelyan and Edward Matchett, *Twelve Seats and the Round Table*, 1976)
- languages of governance (*12 Complementary Languages for Sustainable Governance*, 2003)
- operacy perspectives (as articulated by Edward de Bono: *The Six Value Medals*, 2005; *Six Action Shoes*, 1991; *Six Thinking Hats*, 1987)
- learning phases (cf *Characteristics of phases in 12-phase learning-action cycle*, 1998)
- psychological functions as explored by zodiacal symbolism

The purpose of any such clustering is to provide a framework to explore the relationships between these cognitive modes in relation to governance. Note that for purposes of comprehension by those responsible for governance, there are constraints on the number of distinct modalities. These were first recognized by George A. Miller (*The Magical Number Seven, Plus or Minus Two: Some limits on our capacity for processing information*, *Psychological Review*, 1956). The significance of these constraints for the organization of governance-related knowledge has been explored elsewhere (*Representation, Comprehension and Communication of Sets: the Role of Number*, *International Classification*, 1978; for related explorations, see Helen De Cruz, *How Do Cultural Numerical Concepts Build Upon an Evolved Number Sense?*, 2005)

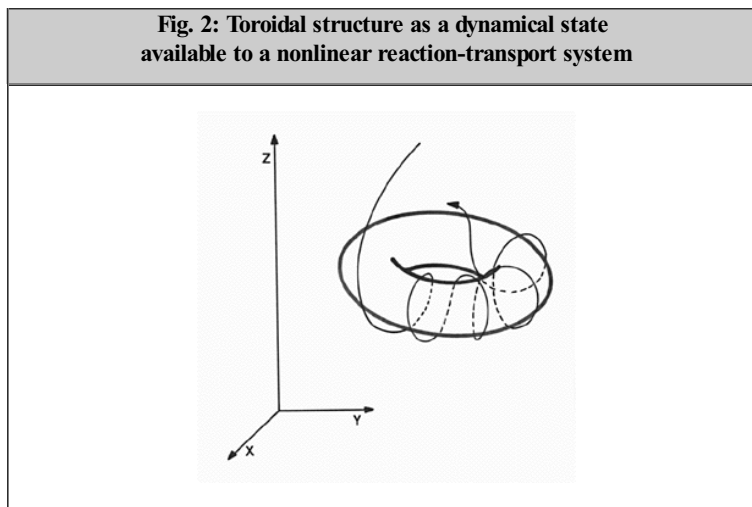
Torus: Understood as a circular ring of modalities, these focus and articulate understandings of diversity (the "associations") into an understanding of "union". As a metaphor, the optical characteristics of "focus" may merit consideration. The axis through the centre of the ring might therefore be understood to pass:

- from one extreme in the realm of "associations",
- through that of the 12 focusing functions, or cognitive modalities
- to that of "union" -- understood politically as from "people" to their "governance".

Fig. 1: Toroid of 12 functions
centered on an axis between "associations" and their "union"

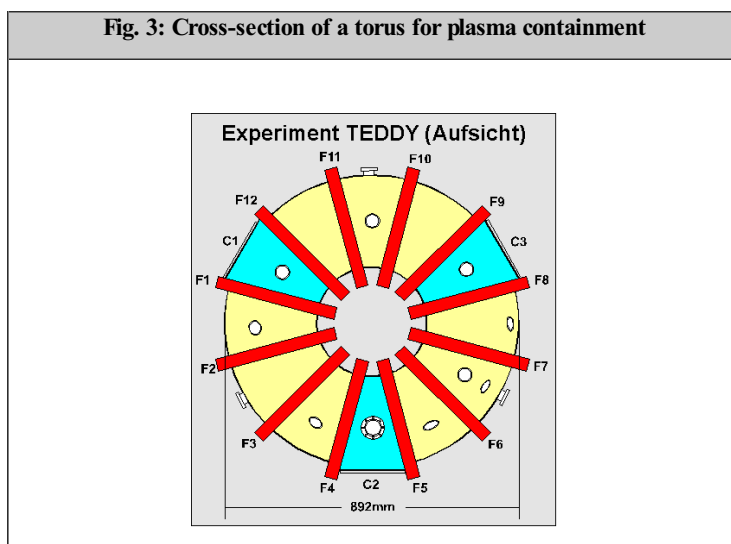


Rather than simply being an abstract ring, it might be understood as the core of a doughnut shaped **torus** (as above) -- with each function having its own circular dynamic effectively defining the ring through its axis. The operations of governance are then effectively sustained by the combined toroidal dynamic.



As discussed by Peter Ortoleva (*Survey of Self-organization and Other Nonlinear Phenomena*, 1998), director of the Laboratory for Computational Geodynamics at Indiana University, in a system with three or more descriptive variables (shown above as X, Y, Z) its evolution may be attracted to a toroidal surface within which the system oscillates with multiple periods. Here the two periods correspond to rotations around the cross section and the longer axis. [\[more\]](#)

Use of a torus might be more than a mnemonic representational device if attention is focused on the nature of the dynamics that sustain the relationship between the 12 possible cognitive modalities such as to enable effective governance. This is especially the case if there is a useful, if metaphorical, parallel between the cognitive attention that has to be kept in focus and the challenge of managing plasma by confining magnetic fields in order to ensure appropriate energy generation in a fusion reactor. So, for example, the influence of toroidal geometry on regular and turbulent fluctuations is investigated in a torus-experiment TEDDI (**Toroidal Experimental Device for Dynamics Investigations**) at the Christian-Albrechts-Universität zu Kiel. Of particular interest is the formation of large-scale coherent structures in the electric potential. The vacuum vessel of the TEDDI experiment consists of three 90° bends and three wedge shaped segments that are equipped with large access ports suggestive of the 12-fold functional ring discussed above.



The torus of functions might therefore be understood as the "interface" or "junction" between the archetypal opposites which so preoccupied Heraclitus at the origins of European philosophy:

Things which are put together are both whole and not whole, brought together and taken apart, in harmony and out of harmony; one thing arises from all things, and all things arise from one thing. (quoted in Aristotle, *On the World*)

- unity -- diversity
- logos -- empathetic ([Heraclitus](#)) ***

One very concrete approach to this toroidal perspective on governance has been explored elsewhere (*Spherical Accounting: using geometry to embody developmental integrity*, 2004). This is concerned with how the third dimension is reflected in an actual geometrical representation of accounting -- moving beyond one-dimensional "budgets", and two-dimensional budget lines and spreadsheets. The focus there is on the potential significance of the actual geometry in integrating disparate (or potentially incommensurable) preoccupations of an organization in such a manner as to heighten the coherence and integrity of the operation.

Closest packing of spheres: Another approach to comprehending the interrelationship of 12 governance modalities is through recognition of the challenge in practice of the "geometry" of any negotiating "table" designed to ensure appropriate communication between the stakeholders. This challenge may be transformed into three-dimensional geometry in terms of the "closest packing" of spheres (cf Bill Lauritzen, *Closest-Packing or Gravitational Gathering of Spheres*; Paul Bourke, *Waterman Polyhedra*, 2004; Russell Z Chu, *Mapping the Hidden Patterns in Sphere Packing: Lattices, nets, tensegrity structures and synergy*, 2003). Closest packing arrangements lead to higher density structures -- which might be understood as an analogue to more highly integrated governance teams.

In such a case the 12 cognitive modalities are represented as packed spheres rather than as segments of a torus. This approach de-emphasizes the directional role of the single axis (from "associations" to "union"), emphasizing instead a form of omnidirectionality -- a term introduced by R Buckminster Fuller (*Synergetics: Explorations in the geometry of thinking*, 1975). There he notes on *Omnidirectional Closest Packing*:

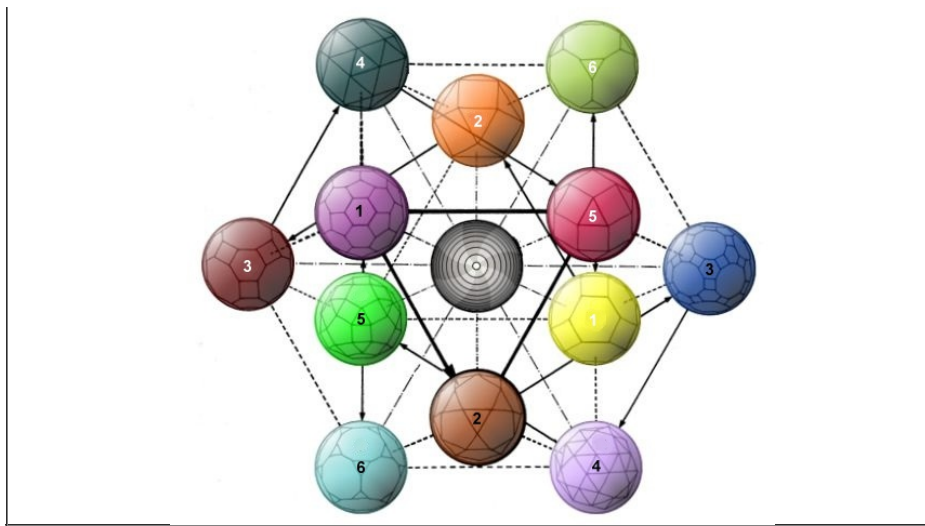
In omnidirectional closest packing of equiradius spheres around a nuclear sphere, **12 spheres will always symmetrically and intertangentially surround one sphere with each sphere tangent to its immediate neighbors.** We may then close-pack another symmetrical layer of identical spheres surrounding the original 13. The spheres of this outer layer are also tangent to all of their immediate neighbors. This second layer totals 42 spheres. If we apply a third layer of equiradius spheres, we find that they, too, compact symmetrically and tangentially. The number of spheres in the third layer is 92.

In 1611, [Johannes Kepler](#) proposed that close packing (either [cubic](#) or [hexagonal close packing](#), both of which have maximum densities of

) is the densest possible [sphere packing](#). This assertion, as yet unproven, is known as the [Kepler conjecture](#). The proof offered by Buckminster Fuller (1975) is now held to be a description of face-centered cubic packing, not a proof of its optimality.

As noted in *Examples of Integrated, Multi-set Concept Schemes (Annex 18: Polygons and polyhedra*, 1984), there are 13 distinct [Archimedean polyhedra](#) in which similar arrangements of regular, convex polygons of two or more different kinds meet at each vertex of the polyhedron [which can itself be circumscribed by a tetrahedron, with 4 common faces]. Such semi-regular polyhedra are defined by the fact that all their vertices lie on a circumscribing sphere. Keith Critchlow (*Order in Space*, 1969) configures 12 of them, within their circumscribing spheres, in a closest packing configuration around the circumscribing sphere of the 13th -- a truncated tetrahedron -- as shown below. The truncated tetrahedron is the only semi-regular solid with 12 independent axes passing through its vertices from its centre. Removal of the central sphere allows the 12 other spheres to close into a more compact icosahedral configuration.

Fig. 4: Archimedean polyhedra	
Successive truncations of octahedron 2, 3, 4-fold symmetry	Successive truncations of icosahedron 2, 3, 5-fold symmetry
1. truncated octahedron (14 polygons: 4 / 6 sided)	1. truncated icosahedron (32 polygons: 5 / 6 sided)
2. cuboctahedron / vector equilibrium (14: 3 / 4)	2. icosidodecahedron (32: 3 / 5)
3. truncated cuboctahedron (26: 4 / 6 / 8)	3. truncated icosidodecahedron (62: 4 / 5 / 10)
4. snub cube (38: 3 / 4)	4. snub dodecahedron (92: 3 / 5)
5. rhombicuboctahedron (26: 3 / 4)	5. rhombicosidodecahedron (62: 3 / 4 / 5)
6. truncated cube / hexahedron (14: 3 / 8)	6. truncated dodecahedron (32: 3 / 10)
truncated tetrahedron (8 polygons: 3 / 6 sided)	
Arrangement of the 12 Archimedean polyhedra in their most regular pattern, a cuboctahedron, around a truncated tetrahedron (from Keith Critchlow, <i>Order in Space</i> , 1969, p. 39). Arrows indicate the succession of truncations from 1 to 6 in each case. (<i>Disabled: Clicking on a polyhedron links to a spinning image</i>)	



If it is assumed that each of the 12 conceptual modalities necessary for coherent governance might be modelled by one of the polyhedra, then the facets and points of contact between them are suggestive of vitally distinctive communication interfaces that could be fruitfully explored with distinctive electronic protocols (cf *Patterning Archetypal Templates of Emergent Order: implications of diamond faceting for enlightening dialogue*, 2002).

Each facet is effectively one of the "windows on the world" from that particular modality or organizational perspective. Note that facet is a technical term in the discipline of knowledge organization -- notably in relation to [faceted classification](#). Such facets might for example, be significant for communication between distinct functional units (as in the case of complementary government ministries) or with organizational or conceptual "associations". Aspects of this have been explored by management cybernetician [Stafford Beer](#) (*Beyond Dispute: the invention of team syntegety*, 1994) [[more](#)]. Team Syntegety is understood by Beer as the "intelligent design" for managing complexity [[more](#)].

In an online experiment by the Union of International Associations an algorithm was used to select a polyhedron onto which relationships from a problem (say) are projected. Each facet thus becomes the interface to another problem. The polyhedron as a whole is thus a configuration of facets representing the problem as it interfaces with related problems. Clicking on the facets brings up the corresponding text profile. In the current version, the selection of polyhedron is crude and the colouring is random. The virtual reality browser enables the user to manipulate and explore the polyhedral structure [[more](#)]

Dynamics of vector equilibrium and tentional integrity: The configuration of the 12 circumscribing spheres as a cuboctahedron -- a form of "union" -- points to the importance of this structure as highlighted by R Buckminster Fuller (*Synergetics: Explorations in the geometry of thinking*, 1975). Also referred to as the "vector equilibrium" or "jitterbug", its dynamics suggest a range of possibilities for organizational transformation (cf *The Vector Equilibrium and its Transformation Pathways*, 1980). This has the merit of stressing the possible dynamic characteristics of any viable "union".

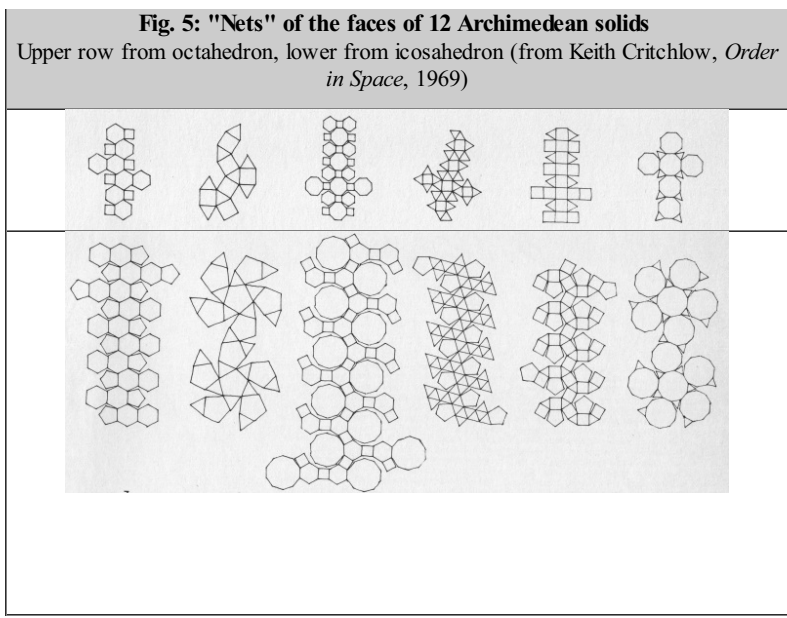
The jitterbug is widely distributed as a toy (a "vector flexor"). This has been used to illustrate the processes of team syntegety (cf J Truss, et al. *The Coherent Architecture of Team Syntegety: from small to mega forms*). A number of illustrative [movies](#) demonstrate the stages in its transformation and their relationship to a related structure whose significance was extensively explored by Fuller, namely the [tensegrity](#) (see Gerald de Jong. *Tensegrity Jitterbug*; Robert W. Gray, *Jitterbug Defined Polyhedra: the shape and dynamics of space*, 2001) [[more](#)]. Regarding these transformations, Bonnie Goldstein DeVarco (*Invisible Architecture: the nanoworld of Buckminster Fuller*, 1997) notes:

In a closest packed group of 12 spheres around one, a vector equilibrium can be inscribed. Fuller called his simple vector equilibrium, when made out of flexible hubs and struts, a "jitterbug" because it twisted to exhibit, while in continuous motion, a series of shapes which accommodate and transform into one another. In its most open stage, it is the cuboctahedron. If it is twisted and contracted, it will become an open icosahedron with six struts missing and with one more contraction it will become the octahedron. It can then be folded down further into a tetrahedron and finally to a simple triangle. Then, simply unfold, untwist and the jitterbug pops back to its original shape, the cuboctahedron or, in Fuller's dynamic system, the Vector Equilibrium.

An excellent mathematical study of the stages of this transformation has been made by Robert W. Gray (*The Jitterbug Motion*, 2002).

Beer in fact focused his initiative on the icosahedron as a basis for team communication. This choice obscures the value of exploring the broader set of communication protocols (cf *Transcending Duality through Tentional Integrity*, 1978) -- of which the icosahedron is the underlying structure for only 6 of them (through one set of truncations).

It is interesting to reflect on the communication "footprint" or "signature" by which each of the above structures might be distinguished in light of the development of the "net" of polygons of which each is constituted (see Fig. 5). It suggests a notion of "valency" (vertices?), or "channel capacity" (sides?) characteristic of each -- perhaps even an alternative configuration of a negotiating table. Such characteristics may exert constraints on the viability of the cognitive sets that can be formulated, and on the complexity of multi-point policies these might then be able to sustain (cf *Representation, Comprehension and Communication of Sets: the Role of Number*, 1978).



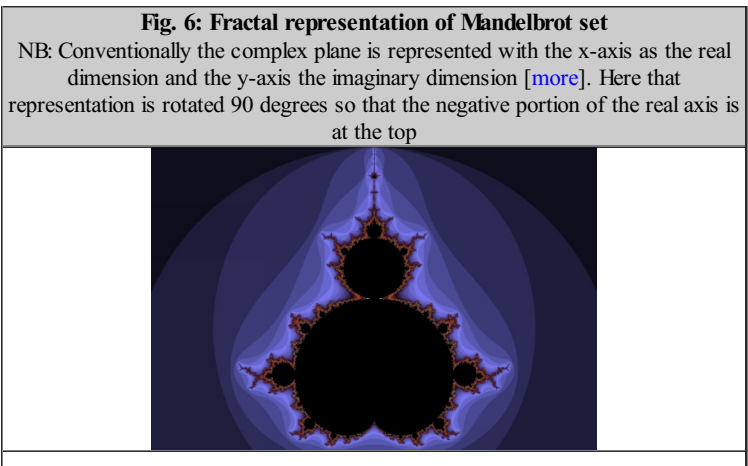
Such geometrical explorations are of course a focus of "sacred geometry" (Robert Lawlor, *Sacred Geometry: Philosophy and Practice*, 1989) . It is perhaps useful to consider that the sense of the "sacredness" (and "holiness") of such geometry may be associated in large part with a sense of its capacity (as "wholeness") to carry communications of a higher order of integrative complexity (cf Russell Chu. *An Introduction to Synergetic Crystallography* 1998). Such possibilities are notably of relevance in conference communication (cf *Energy Patterns in Conferences: a context for higher levels of integration*, 1988) and the organization of the emergent semantic web (cf *Sacralization of Hyperlink Geometry*, 1997).

Mandelbrot set (M-set): The understanding of "union" as a polar contrast to the variety of "associations" may be usefully explored in terms of the boundary between order and chaos. The M-set fractal is a mapping of the simplest nonlinear function -- but is also as complicated as a fractal can get. It distinguishes the simplest boundary between chaos and order. It is recognized as the simplest non-trivial example of a holomorphic parameter space. In the search for solutions to complex equations, experiments with iterations by computer have highlighted intricate global properties related to nonconvergence and the stability of convergence.

The early confidence that complexity studies would have much to offer governance of complex systems appears to have largely dissipated -- without fulfilling exploring their potential, except perhaps by the intelligence services. There has been a reversion, in relation to complexity, to what Edgar Morin (*Pour Sortir du XXe Siecle*, 1981) described as mono-factor thinking (cf *Promoting a Singular Global Threat -- Terrorism: Strategy of choice for world governance*, 2002). In particular the M-set offers a surprising higher order pattern that reconciles the challenge represented by the incommensurability of "real" and "imaginary" dimensions -- exemplified by **complex numbers** and their positioning on the real and imaginary axes fundamental to the visual representation of the M-set (see Fig. 6).

Dissipative systems, and the M-set, indeed offer a language through which to explore and identify viable patterns of sustainable relationship between essentially incompatible modes of behaviour or anti-thetical modes of thinking -- "union" vs "associations". It is these which are typically fundamental to the strategic dilemmas in psycho-social systems -- whether intrapsychic, interpersonal or intergroup. It is the continuing search for the resolution of these dilemmas that characterizes the dynamic of such systems (cf *Configuring Strategic Dilemmas in Intersectoral Dialogue: Summary of analysis on the occasion of Earth Summit*, 1992)

As discussed elsewhere (cf *Sustainability through the Dynamics of Strategic Dilemmas: in the light of the coherence and visual form of the Mandelbrot set*, 2005), this approach offers a pattern language to explore the complexities of the periodic resolution to strategic dilemmas -- the space of "not-this, not-that" (the *neti neti* of Sanskrit). The emergent patterns there are those which characterize a multitude of dynamically stable experiential resolutions of strategic dilemmas. These dynamic resolutions can be depicted (through the M-set) as characteristic patterns of great variety. The set of all such patterns (the M-set as a whole) is of a coherent form that is reflected in many ways (isomorphically) in its detail.



Alchemical symbolism: The subtle nature of this "junction" has been articulated and explored under the term *coniunctio*, notably in the work of **Carl Gustav Jung** (*Mysterium Coniunctionis: An Inquiry into the Separation and Synthesis of Psychic Opposites in Alchemy*, 1956) on the symbolism of alchemy for which the conjoining is a form of "wedding" between opposites variously symbolized by: Sun/Moon, male/female, body/spirit, consciousness/unconsciousness (cf Edward F. Edinger and Joan Dexter Blackmer. *The Mystery of the Coniunctio: Alchemical Image of Individuation*, 1994) [more]. These are understood as equivalent to the *yang* (positive, male, assertive) and *yin* (negative, female, receptive) of Taoist philosophy. [more] The discussion by Remo F. Roth (*The Archetype of the Holy Wedding in Alchemy and in the Unconscious of Modern Man*) also refers to his own work on *The Wheel Image of Nicholas von Flue as Symbol of the Subtle Body* which echoes that of a "roundtable" (and that of TEDDI).

Axiology: principles of axial symmetry?

A vital question in exploring the junction between "union" and "associations" is the nature of the principles of order governing that relationship. These may be understood in terms of the "values" or "principles" fundamental to that relationship. In the light of the enabling "sacredness" of the geometrical frameworks above, it might be understood as governed by the axes fundamental to their configuration and to their symmetry. This suggests the merit of understanding the principles of such axial symmetry as intimately related to **axiology** -- namely to values and their understanding.

The regular polyhedra are, for example, typically classified into three types of symmetry:

- Tetrahedral (2, 3, 3) symmetry is four axes of three-fold **rotational symmetry** (one for each vertex) and six planes of **reflectional symmetry** (two for each edge but opposite edges have them in common).
- Octahedral (2, 3, 4) symmetry has three axes of four-fold rotation, four axes of three-fold rotation (the same four as the tetrahedron), and nine reflectional planes (six are the planes of tetrahedral symmetry).
- Icosahedral (2, 3, 5) symmetry has 12 five-fold axes and 20 three-fold axes (including the four of octahedral symmetry), plus 15 reflectional planes.

As indicated above, such an approach would then emphasize the need to investigate the coherence, viability and "universality" of multi-point action plans, or sets of (ethical) principles, in terms of how they map onto such "sacred" geometrical frameworks. Of particular interest, given Miller's "plus or minus seven" constraint, is how in practice governance is challenged to interrelate a variety of 3-point, 4-point, 5-point and n-point plans and provide coherence for the set of such plans. Simply providing a "laundry list" of, say, 30-point plans (as with the 30 articles of the *Universal Declaration of Human Rights*), does not make for integrative, operational comprehension -- potentially of vital significance for communication pathways and the emergence of specialized operational foci ("associations"), and their integration ("union").

Curiously there has apparently been no suggestion of the mnemonic significance of mapping such a fundamental declaration onto an **icosahedron** (30 edges) or an **icosidodecahedron** (30 vertices) -- even by those following Stafford Beer's icosahedron-focused syntegegration process, or by those following Buckminster Fuller's preceding preoccupations (notably in the elaboration of a **World Game**) [more]. Such structures, for example, offer clear pointers to interrelating many distinct 3- or 5-point plans -- with the merit of cognitively "escaping" the Miller comprehension constraint (perhaps to be understood as a conceptual **"gravity well"**) into a 12-dimensional axiological framework.

It is unfortunate that such insights are not used to provide frameworks for the intuitive use of the term "variable-geometry" by European policy-makers. It is used by them to describe the idea of a method of differentiated integration which acknowledges that there are irreconcilable differences within the integration structure and therefore allows for a permanent separation between a group of Member States and a number of less developed integration units. [more] But no actual geometry informs the metaphor (see also *Alternation between Variable Geometries: a brokership style for the United Nations as a guarantee of its requisite variety*, 1985).

Clearly, as noted above, in the light of the "irrational" cognitive challenges to mainstream "rational" understandings of order, there is then a real challenge of interrelating the "rationally" ordered frameworks to those with any "irrational tendencies". The comprehensible "rational" ordering (typical of "lower order" understanding of the necessary dimensionality of viable "union") is necessarily incompatible with the "irrational" dimensions of real world dynamics of "associations" (typical of tendencies to "fall in love", "corruption" and the attraction of alcohol and narcotic substances). It is here that the principle of symmetry governing the organization of the Mandelbrot set (see above) may prove highly instructive.

As noted above, however, there is a range of other structures, offering other axiological organizing principles, for which a higher pattern of order is required -- centred on the truncated tetrahedron reconciling 8-fold and 12-fold organizing principles. Curiously the interplay between 8-fold and 12-fold ordering has been evident in patterns of symbols. The octopus, for example, was held to symbolize the spirits of the Underworld and mysterious otherworldly forces, strangely recognized as a metaphor in education by Charlotte Mason (*Towards A Philosophy of Education*, p. 330):

"The mind is a spiritual octopus, reaching out limbs in every direction to draw in enormous rations of that which under the actions of the mind itself becomes knowledge. Nothing can stale its infinite variety; the heavens and the earth, the past, the present, and future, things great and things minute, nations and men, the universe, all are within the scope of the human intelligence." [more]

A common astrological framework focuses on a 12-fold division of "houses", that superseded an "octopus" articulation (in the ancient

form *octopus*) now recast under the term "dominion" (Patrice Guinard, *Les 8 Maisons : Le Dominion*, 1999-2004). As with the Taoist organization of the *I Ching* hexagrams into 8 "houses", it represents the eight natural spatial directions, of the compass or the winds, and translates these different spatial modalities in conscience, as integration modes to the natural environment. It is held to be an extremely powerful and even determining operator in the psychic economy of a person, since it indicates how the individuals seeks to exteriorize their aspirations. [more]

As represented, one of its particularities is that the major axes, fundamental to its emergence as a comprehensible ordering image of "union", reconcile a "real" and "imaginary" ordering of the complexity of reality characterized by the emergent multiplicity of "associations". The "real vs imaginary" structuring of the complex plane might in the M-set also be usefully understood in terms of the challenge of "objective vs subjective". Values could be said to exemplify the imaginary -- challenged by the real -- and nevertheless a fundamentally attractive driving force in society (cf *Human Values as Strange Attractors: Coevolution of classes of governance principles*, 1993).

It is curious that the conceptual tools accepted as meaningful for the governance of society tend to take the form of simple laundry lists of issues (perhaps organized hierarchically) or contractual articles -- using rectilinear spreadsheets to manage any associated flow of resources. These are taken to represent the nexus of "union" in the face of "associations" -- of law and order. Recognition has increasingly been given to networks linking "associations" as an organizing principle in practice (eg "networking", "networks of excellence", etc), but primarily only as a metaphor -- completely divorced from its use in the design and cybernetic management of material resource flows (eg electrical grids, transportation systems, flow diagrams, circuit boards, ecosystems) or the surveillance activities of intelligence services.

Transcending the bicameral mind

There are different consequences of recognition of a binary perspective in relation to governance:

- a strategic sense of "them and us"
- bicameral mind (cf Julian Jaynes, *The Origin of Consciousness in the Breakdown of the Bicameral Mind*, 1976, 1990, 2000)
- bicameralism in legislature
- piston engine as a potential metaphoric description of the "engine" or "motor" of any knowledge-based economy

Given the challenges of adversarial and polarized situations (*Configuring Conceptual Polarities in Questing: metaphoric pointers to self-reflexive coherence*, 2004; *Discovering richer patterns of comprehension to reframe polarization*, 1998), the question is whether a trinary system offers the possibility of more coherence. Examples are:

- tripartite organization of International Labour Organisation into government, employers and labour unions
- tricameralism, namely the practice of having three legislative or parliamentary chambers [more]
- tripartite (Triple-G) approach of the Global Governance Group of the Club of Athens, as articulated by Paris Arnopoulos
- social process triangles, fundamental to the organization of the Institute of Cultural Affairs [more | more]

Why is it that higher order systems tend to be considered non-viable, difficult to comprehend and of limited credibility in relation to governance? Given Miller's "plus-or-minus seven" constraint (see above), it could be argued that many traditional symbol systems are ways of getting beyond that cognitive limit whilst ensuring coherence and credibility -- "getting beyond 6-to-8" and engendering sets of greater (requisite) variety. This might be a basis for a "grokability scale" or a "grokability quotient" [more]. Examples of such transformations, and of how they might be said to retain coherence through "multiplier effects", are described elsewhere (*Patterns of N-foldness: Comparison of integrated multi-set concept schemes as forms of presentation*, 1980). They include:

- astrology gets beyond 7 to 12 by combining 3x4
- *I Ching* gets beyond 8 to 64 by combining 8x8
- enneagram gets beyond 3 to 9 by combining 3x3
- Tarot gets to 72 by combining $2^3 \times 3^2$
- use of the octave to provide cognitive order for a wider range of tones in music (notably in the *Tonal patterns of Rg Veda poetry*, 1984, following the work on factors of Ernest G McClain, *The Myth of Invariance: the origins of the gods, mathematics and music from the Rg Veda to Plato*, 1978)
- magic squares and cubes (cf *Hyperspace Clues to the Psychology of the Pattern that Connects*, 2003)

Fig. 7: Towards a "grokability quotient"										
Concept set prime number factors (and powers) tentative										
Cells of table contain factor powers: N - M (e.g. from 3^N to 3^M)										
Factors	2	3	5	7	11	13	17	Other primes	Max. set	Symbol system
Annexe #	.	.	.	.	.	.	.	.	.	.
0	2	1	.	.	.	.	.	.	12	astrology
	.	3	.	.	.	.	.	.	9	enneagram
	3	2	.	.	.	.	.	.		tarot
2	6	.	.	.	.	.	.	.	64	<i>I Ching</i>
1	0-2	0-1	0	0-1	.	.	.	.	12	Geometry
3	0-(4)	0-1	0-1	0-1	0-1	.	.	.	16	Catastrophe
4	0-6	0-3	0-2	0-2	0-1	0-1	0-(1)	51 111	111	Buddhism

5	0-5	0-1	0-1	.	.	.	.	.	64	Genetic
6	0-4	0-2	0-2	0-1	.	.	.	23	10 ²	Communist terminology
7	0-9	0-6	0-4	0-1	0-1	0-1	.	29	10 ³	Rg Veda tones
8	0-3	0-3	0-1	0-1	.	.	.	.	360	Dance
9	0-2	0-3	0-1	0-1	.	.	.	.	9	Chinese strategy
10	0-2	0-1	0-1	0-1	.	.	.	.	12	Colour
11	0-3	0-3	0-1	0-1	.	.	.	.	360	Islamic cosmology
12	.	.	.	.	.	.	.	.	10 ²	Language
13	0-2	0-1	0	0-1	.	.	.	.	7	Thermodynamics
14	0-1	0-1	0-1	0-1	.	.	.	.	10 ²	Periodic classification
15	0-3	0-2	0-1	0-1	0-1	.	.	.	(96)	Systematics
16	0-3	0-2	.	.	.	.	.	.	9	Coaction
17	0-4	0-2	0-2	0-1	0-(2)	0-1	0-(1)	31 47	720	Synergetics
18	0-4	0-1	0-2	0-1	0-1	0-2	.	19 23 31	92	Polyhedra
19	0-6	0-2	0-2	0-1	0-1	0-1	.	19 23 29 37 41	64	Topological features
20	0-3	0-1	.	.	.	.	.	.	.	Chladni figures
21	0-3	0-1	.	.	.	.	.	.	.	Declarations of principles

In the case of both the *I Ching* and astrology, "houses" rather than "rooms" (*camera*) are the cognitive context so engendered. This offers an interesting interpretation of the "many mansions" of "my Father's house" (*John 14:2*) -- the latter represented by the circumscribing sphere noted by Critchlow.

To the extent that "closest packing" in three-dimensional geometry implies possibilities and constraints on forms of cognitive integration, an important pointer to the fundamental significance of 12-fold structure is offered in Keith Critchlow's investigation into the 12 "degrees of freedom of 'regularity' in the division of space polyhedrally" (in *Order in Space: a design source book*, 1969, Appendix 4). There he shows that:

"...analogy can be drawn between the behaviour of morphic number (sphericity), the degrees of freedom, and the twelve possible truncations of the regular solids viewed as economic distributions on the circumspheres of the Archimedean solids.

Together with this 'morphic' allocation we have drawn attention to the behaviour pattern of the three major transformations from the truncated tetrahedral packing around a tetrahedral nucleus through to the equilibrium of the dymaxion or cuboctahedral configuration, and finally into the 'locked' icosahedral pattern, traversing the three major omnidirectional symmetries employed in nature. All can be considered phases in the disposition of the twelve degrees of freedom, or the fundamental origin of the twelve orientations of each symmetry, the truncated tetrahedral starting-point being unique in having twelve independent axes from each node to the centre".

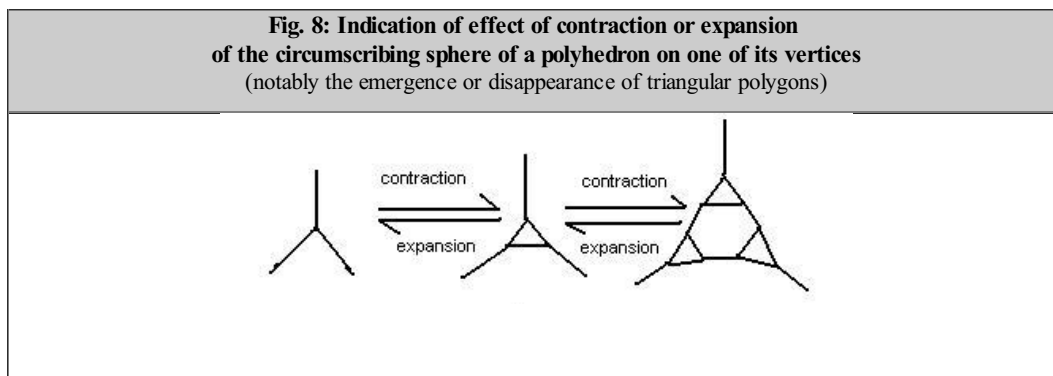
In the case of the 12 cognitive modes discussed above, it is worth considering that the two complementary parts of the fundamental bicameral mind -- with its right and left hemisphere specificity [more more] -- might be usefully modelled cognitively by the octahedron and the icosahedron. The question is then how their successive "truncations" engender what might be understood as a "dodecameral mind" -- a complexification of the bicameral mind.

Dodecameral is a convenient abridgement of "dodecacameral" -- the unused correct term. A related term, **dodecamer** (as with polymer) pertains to **protein quaternary structure** [more], and describes a **protein complex** with 12 **protein subunits** (**protein chains**). Dodecameric **complexes** can have a number of **subunit 'topologies'**, but typically only a few of the **theoretically possible subunit arrangements** are observed in **protein structures**. A large number of dodecamer crystal structures have been reported since 1980 -- dodecamer DNA (and RNA), and its space filling properties, have notably been a focus of research.(cf H. Schindelin, et al. *Crystal Structure of an RNA Dodecamer containing the Escherichia Coli Shine-Dalgarno Sequence*, 1994). The fundamental relevance of this structure to biological organization suggests that the pattern may be of fundamental significance to cognitive organization.

Transformations of the "dodecameral mind"

The significant feature of the polyhedral models is that the vertices of each are all in contact with a circumscribing sphere. The latter might be understood to embody one sense of coherence. It clearly holds a "global" cognitive quality beyond that associated with geopolitical globalization (cf *Future Generation through Global Conversation: in quest of collective well-being through conversation in the present moment*, 1997). This property of being "on the sphere" might be contrasted with the masonic preoccupation with being "on the square". Two transformations can however occur:

- **contraction:** the truncations effectively occur when that sphere contracts in relation to any given polyhedron. The singularity of any vertex is then "split" into a triangle of vertices, each in contact with the contracted sphere. The number of triangular polygons thereby increases
- **expansion:** triangular integration occurs when the sphere expands "fusing" any triangle of vertices into a single vertex (a form of triangulation?) in order to maintain contact with the expanded sphere. The number of triangular polygons is thereby reduced.



The "truncation" sequences in Critchlow's closest packing diagram (above) could now be viewed more dynamically as transformation processes, involving both contraction and expansion, integral to the organization of the dodecameral mind and the way in which it maintains its coherence. Just as the early challenge of the industrial revolution was to harness the power associated with single cylinder contraction and expansion, it might be said that **the challenge of the knowledge society is how to harness the power of a "12-cylinder cognitive engine"**. There may even be pointers from the design of the higher performance automobiles that currently use 12-cylinder engines. In cognitive terms, the contraction-expansion cycle may bear similarities to "breathing", especially its accompanying cognitive analogues in meditation.

The concept of a "cognitive engine" is currently employed at the nexus of cognitive science, psychology, and artificial intelligence in using computer-based models to understand cognitive processes. Computational architectures that embody theories and models of human thought and reasoning have led to software systems that can emulate or mimic the way people think and solve problems in specific tasks [more]. It may also be used to optimize the operation of networks [more]. Speech recognition technology depends on evaluations of data by a complementary set of "modules". There is intensive research on cortical emulators (cf Marcos Guillen, *Cortical Emulators Rapidly Coming to Market*, 2005; Robert Hecht-Nielsen, *A theory of thalamocortex*. In: *Computational models for neuroscience: human cortical information processing*, 2003).

Bridging the cognitive gap at the core of governance

A significant feature of the set of Archimedean polyhedra is their relation in each case to:

- a circumsphere: with which each vertex is in contact (as noted above)
- an intersphere passing through the edge centres of the polyhedra
- an insphere: with which the centre of each face is in contact -- a centre point which becomes a vertex in the dual of the polyhedra in question

There is then the intriguing possibility that the circumsphere linking the vertices reflects a "global" pattern of "external" (objective) ordering whereas the insphere of smaller diameter, to which the faces are tangential, reflects an "internal" (subjective) "global" form of coherence or sense of identity. This possibility raises the following issues:

- the number of vertices, faces and edges of a given polyhedron and the complexity that can then be effectively mapped onto it in ordering knowledge in a coherent manner
- the challenge to coherent comprehension as the number of elements increases (notably recalling the degree of that challenge if what is ordered encompasses the degree of variety characteristic of 4-fold individuation processes: sensation, emotion, thinking, intuition)
- the challenge of integrating the plurality of "external" insights defined by the pattern of vertices associated with a particular polyhedral face (triangular, square, etc) into a single insight for that face -- exemplified by the work on simplicial complexes of Ron Atkin (*Multidimensional Man; can man live in 3-dimensional space?* Penguin, 1981) as discussed elsewhere (*Comprehension: social organization determined by incommunicability of insights*)
- the implication of the size of the "gap" between the two understandings of "global", suggested by the distance between the circumsphere and the insphere, for different polyhedra -- and the possibility that this boundary zone between the two spheres might be related to the "boundary zone" of the M-set as represented above

Fig. 9: Gap between circum- and insphere of Archimedean polyhedra of different complexity
(where the intersphere radius to the centre edges of the polyhedra is 1 -- with "complexity" measured by the total number of vertices, faces and edges in each case)

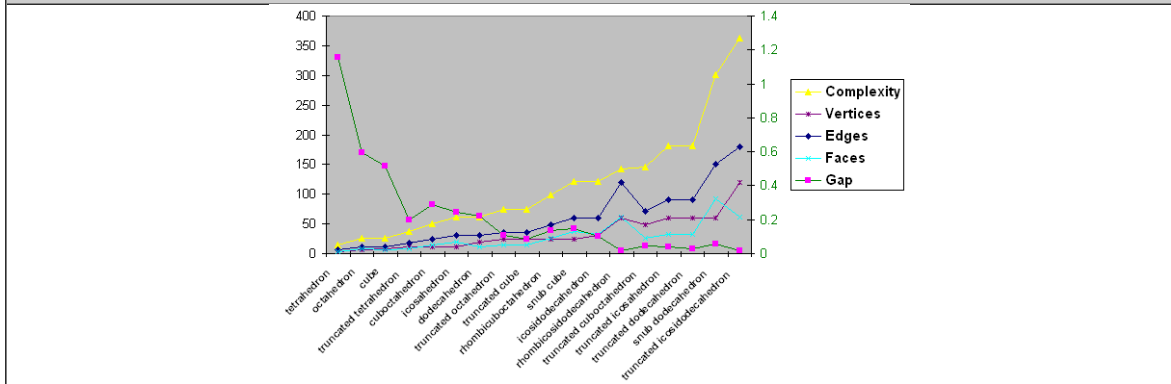
Truncations of octahedron (0.5977 / 26) 2, 3, 4-fold symmetry	Truncations of icosahedron (0.2414 / 62) 2, 3, 5-fold symmetry
1. truncated octahedron (0.1054 / 74)	1. truncated icosahedron (0.0416 / 182)

2. cuboctahedron / vector equilibrium (0.2887 / 50)	2. icosidodecahedron (0.1004 / 122)
3. truncated cuboctahedron (0.0476 / 146)	3. truncated icosidodecahedron (0.0173 / 362)
4. snub cube (0.1491 / 122)	4. snub dodecahedron (0.0553 / 302)
5. rhombicuboctahedron (0.1367 / 98)	5. rhombicosidodecahedron (0.0513 / 142)
6. truncated cube / hexahedron (0.0823 / 74)	6. truncated dodecahedron (0.0288 / 182)

truncated tetrahedron (0.201 / 38)

Relationship between polyhedral complexity and the "inner-outer" gap

The gap is less for the more complex Archimedean polyhedra (on the right) than for the simpler Platonic polyhedra (on the left) that are necessarily easier to comprehend



The above table clarifies the basic mapping/modelling dilemma at the core of governance:

- **challenge for any "council of the wise"**: the greater the consonance (namely the lesser the "gap") between "outer" and "inner" comprehensive (or "global") understanding, the more complex must be the mapping surface -- and hence the more difficult to understand it in its "globality", and conversely,
- **challenge of any media "public relations" presentation**: the simpler the mapping surface required to articulate any strategic governance initiative, the greater the "gap" between "outer" and "inner" comprehensive (or "global") understanding -- and hence the higher the degree of cognitive dissonance that may be experienced (whether by the governors or by the governed)

The key to this dilemma lies in the symmetry properties of the polyhedra which render them comprehensible as integrative meaningful wholes -- irrespective of whether content can be mnemonically attached to the parts of any one of them, thereby distinguished in a mapping/modelling process. The symmetry properties allow the eye to follow pathways around a given structure, thus sustaining an understanding of globality. The maximum number of these delineated "great circle" (geodesic) pathways approximates to the Miller cognitive limit even in the more complex cases above. The number of such circles, for any given Platonic or Archimedean polyhedron, tends to be not greater than the number of the face with most edges -- since the faces are effectively defined by the intersection of great circles.

The challenge then becomes how to employ such "great circle" pathways (as well as "lesser circles" of smaller diameter), to enable, sustain and enhance comprehension and a sense of global coherence. They might usefully be understood as "comprehension pathways" - linking facets of understanding mapped onto faces, edges and vertices of the polyhedron circumscribed by them.

Comprehension pathways could be understood as a form of conceptual "grand circuit" whereby a person fulfills T S Eliot's widely quoted "We shall not cease from exploration / And the end of all our exploring / Will be to arrive where we started / And know the place for the first time" (*Little Gidding*). They might also be understood in terms of the "songlines" that feature in the Australian Aboriginal organization of the Dreamtime topography. The development of the web has resulted in the emergence of hypertext pathways like [web rings](#). A case can be made for the organization of web content in terms of such songlines (cf *From Information Highways to Songlines of the Noosphere: Global configuration of hypertext pathways as a prerequisite for meaningful collective transformation*, 1996; *Cultivating the Songlines of the Noosphere*, 1996). By explicitly recognizing the communication distance between significant content, such pathways may sustain cross-fertilization and variety rather than inhibiting it (cf *Sustaining the Coherence of Dialogue through Apartness: configuration of entities through hypertext*, 1997).

- lightways light pathways****
- inscribed sphere more essential
- octahedron / icosahedron as limit conditions
- Wankel
- tensegrity variants
- stellated
- stretching-constraining: box, tent, sail, architecture
- duals

In the light of an earlier exploration (*Planetary Challenge of 12-fold Strategic Marriage Bonding "Empire" + "Alternatives", "Global" + "Local", and "Behavioural" + "Depth psychology"*, 2003), current concerns with "empire" against the diversity of "alternatives" might be compared with the challenge of "union" in relation to "associations".

Dynamic harmony through music: sonification for governance?

The structures discussed above appear to be in dramatic contrast to the organizing principle to which the majority of the population is attracted, namely the harmony provided through music. It can be argued that the science of harmony offers far more insight into complex forms of "union" than is currently provided by the science of governance -- as noted by [Jacques Attali](#) (*Noise: The Political Economy of Music*, 1985), former president of the European Bank for Reconstruction and Development. This alternative ordering principle is potentially of fundamental importance to governance in Africa as argued elsewhere (*Knowledge Gardening through Music: patterns of coherence for future African management as an alternative to Project Logic*, 2000).

In this sense, the visualization of "union" proposed by governance may well ignore the possibility that many citizens oppose the "vision" presented by politicians, not because it is not appealing as a vision (as in a glossy presentation), but because -- undetectable by "vision" -- for citizens it "stinks", is of questionable "taste", or "sounds" wrong. The most well-intentioned governance may suffer unknowingly from what might be termed "political halitosis". The body politic may suffer unknowingly from "body odour". The possibilities complementary to "foresight" -- "foretaste", "foresmell", "forelistening" (and "foresound"). It should not be forgotten that options envisioned for responding to the climate change challenge might result in a future that "stinks" -- however good it "looks" (cf *Metaphor and the Language of Futures*, 1992).

Significantly the *Financial Times* (15 October 2005) notes for its readership that:

As the stakes rise higher in the search for the quintessence of luxury, we find ourselves ever more appreciative of hotels that pay attention to details such as music and lighting, and the moods that can be evoked with colour washes, flowers and art... If everything we see, hear, smell and touch pleases us, chances are we'll be happy.

Regrettably few of the Western policy-makers amongst the FT readership recognize the metaphorical implications of such learnings in envisioning future strategies. The intimate relationship between aesthetics and subtler strategy has been far more effectively explored in non-Western cultures (*Enhancing the Quality of Knowing through Integration of East-West metaphors*, 2000). This may yet prove to provide the Japanese and the Chinese with a significant competitive advantage, as argued by Susantha Goonatilake (*Toward a Global Science: mining civilizational knowledge*, 1999).

Why do Live Aid concerts give such worldwide focus to popular concern -- most recently in communicating such concerns to the G8 Summit (Gleneagles, July 2005)?

Given the obvious widespread popular appeal of the annual [Eurovision Song Contest](#), how is it that the European Community did not endeavour to set its proposed Constitution to song, or to music, to anchor it mnemonically and symbolically in the imagination of people? (cf *Structuring Mnemonic Encoding of Development Plans and Ethical Charters using Musical Leitmotifs*, 2001). Curiously there is seemingly so little distinction between "signing" a Constitution or a Declaration -- and "singing" it -- at least for the English dyslexic!

How did Beethoven's *Ode to Joy* get chosen as the most appropriate [anthem for Europe](#)? How symbolically significant to the choice is his deafness at the time he composed it -- and the fact that he himself had ceased playing for the public? What are its cognitive implications and connotations for the young? (cf Jacques Attali. *Noise: The Political Economy of Music*, 1985) How is it that it is essentially the static quality of the EU structure that is emphasized in 448 articles of legalese -- rather than the dynamics, perhaps playfully, through interactive, participative games that would have enabled people to get a "feel" for the operations of the structure and would engage their imagination in its possible development? (cf *Animating the Representation of Europe*, 2004; *Using Research in the Participative Orchestration of Europe*, 2004)

Is it possible that there is a significant correlation between those that identify more with the monolithic coherence of the orchestrated polyphony of the unchanging score of the *Ode to Joy* and with those who voted "Yes" for the European Constitution. How would this compare with the correlation between those who identify more with the participatory evolving chaotic diversity of the European Song Contest and with those who voted "No"?

More fundamentally, does the attraction of music disguise the intuitive response to subtler dynamic patterns of order and "union" -- rather than to those that are understood to be essentially static? (cf *From Statics to Dynamics in Sustainable Community*, 1998). It may well be that the most viable interface between "union" and "associations" is essentially dynamic (as notably implied by Eastern experiential metaphors of sexual congress).

From a more scientific perspective, sonification has recently acquired a degree of importance in the comprehension of complex patterns of data (cf [International Community for Auditory Display](#), *Sonification Report: Status of the Field and Research Agenda*, 1997, prepared for the National Science Foundation; Hans G Kaper, et al. *Data Sonification and Sound Visualization*, *Computing in Science and Engineering*, July/August 1999).

Given the challenge to comprehension of the Archimedean polyhedra, it is possible that their distinct natures could be more readily understood as some form of [soundscape](#). For example, the distinct patterns of great circles by which each is constituted could be given defined by repeating cycles of sound sequences (or tones) such that the points of "intersection" with co-occurring cycles gave rise to chords. The coherence of the whole might then be cognitively accessible. Such an exploration is consistent with classical understandings of musical modes. The classical set of 8 [musical modes](#) -- as mathematically distinguished -- might well be represented by polyhedra with comparable symmetry properties. In 13th century Persia and neighbouring Arabian countries, Safiyaddin Urmiyyayi made known 12 basic kinds of *mugham* and 12 musical modes (Farid Alakbarov, *Music Therapy: What Doctors Knew Centuries Ago*, 2003). A much more extensive, roughly classified, list of 1135 modes from a wide range of cultures is maintained by the [Stichting Huygens-Fokker](#) (Manuel Op de Coul, *List of musical modes*).

In a world riven by various types of fragmentation, it is curious that the powerful musical [theory of harmony](#) -- and its direct engagement of peoples -- has been disassociated from the organization of knowledge in the service of governance for the benefit of

humanity. Is it conceivable that seemingly incompatible factions, beliefs, disciplines and denominations, could be well-modelled by musical modes -- as distinct, but complementary, spheres that lend themselves to a higher pattern of ordering? Could this point to a new significance to the phrase "ringing true"?

These reflections, and the cognitive significance of the closest-packing arrangement of 12 spheres, point once again to the possible relevance of the traditional insight into the "music of the spheres" [more]. The astronomer Johannes Kepler (1571-1630) published his work *Harmonices Mundi* based on geometry, from which he derived first a theory of musical harmony and then a cosmology of the heavens and the earth. His music of the spheres is based on the relative maximum and minimum angular velocities of the planet measured from the sun. Using his theories, Kepler allotted to the planets musical intervals and musical motion. Experiments have been undertaken to give a musical representation of his insights [more]. The challenges of global governance may be waiting for insights equivalent to those of Kepler.

Higher order questions

As explored elsewhere (*Engaging with Questions of Higher Order: cognitive vigilance required for higher degrees of twistedness*, 2004), there is a potential relationship between the 12 cognitive modes, tentatively identified above, and particular styles of question. The challenge for governance is how to highlight and engage collectively with higher order questions.

It could be argued that many contemporary challenges of governance are framed by lower order questions focusing on mundanities and technical explanations. Preoccupation with these is however to be contrasted with widespread preoccupation with:

- communication driven by public relations, news management, photo opportunities and sound bites
- shows and happenings, whether media driven or not
- widespread use of drugs and alcohol
- continuing fascination with superstition and mystery
- widespread mental disturbance, including depression, and possibly leading to suicide
- continuing, if not increasing, importance of faith to compensate for the mindset of contemporary civilization
- developing interest in occult and esoteric frames of reference, of increasing concern to traditional religions

These each highlight the importance for many of cognitive challenges that are not effectively addressed by much vaunted advances in mainstream understanding and explanatory power in response to lower order questions. Many are effectively trapped by the mundanities arising from that mindset. These does not appear to offer or highlight a sustaining framework

- nature of transcendence (intellectual/ spiritual property) --> "developers" --> reflected back as a conditioning pattern

fragmentation modes

- decivilization
- how is wholeness lost?
- integrative failure?
- why

Impatience

The institutional track record of the 20th century has been one characterized by much patience:

- the patience of those to whom promises are made that next year will be better
- the patience of those with a vested interest in justifying the time it takes for planted seeds to bear fruit

The UN Summit on the occasion of its 60th Anniversary in 2005, with its failure to respond significantly to the millennial challenges it had itself articulated, has been accompanied by typical discourse calling for more patience in a long process. There is every likelihood that most listeners will be dead before much is achieved -- especially since many problems are increasing at a far greater rate than the implementation of remedies for them. Whole careers have, for example, been devoted to the challenge of "reforming the United Nations". Countries may even be governed by "30-year strategic plans" that are constantly rolled over (following the classic principle of dangling a carrot in front of a donkey to keep it motivated to move forward).

This call to patience creates patterns of dependency which severely inhibit the individual (as much as any group) in responding innovatively and appropriately. Many are forced into a mode of effectively "hanging about" by factors such as the following:

- **qualifications:** the implication that acquiring appropriate qualifications is a desirable, if not necessary, precursor to meaningful action. Many are thereby sidetracked into forms of what may amount to indoctrination that kill any inspiration, innovative capacity or energy that they may have originally had.
- **information:** the implication that much more information must be acquired before meaningful action can be undertaken -- typically given a respectable scientific framing as "monitoring". The fact that such information may be unobtainable or costly to obtain is considered unfortunate. The fact that such dependency may sap initiative is not considered relevant.
- **experience:** the implication that months, if not years, of experience are required before it is reasonable to expect to be able to act meaningfully diverts attention from the nature of meaningful action that is possible in the moment
- **comprehension:** the implication that only with some form of maturity will it be possible to determine what initiative is appropriate. This may divert energy into acquiring such comprehension at some future time in such a manner as to undermine the capacity to act in the present
- **resources:** the implication that adequate resources are necessary to undertake a meaningful initiative with any hope of successful

achievement. Since desirable resources for a "professional" approach to any challenge may be difficult to obtain, diverting attention from the capacity to do something with resources to hand.

- **agreement:** the implication that other individuals or groups must reach agreement as the basis of viable collective action switches the focus to obtaining such agreement and away from the nature of valid action that is possible without such agreement.
- **support:** the implication that some form of support, benediction or patronage is necessary before it is possible to undertake any meaningful action diverts attention in to the processes of obtaining such support and away from what it is immediately possible to achieve

Each of the above contributes to a psychology of delay and dependency, justified with the most authoritative arguments -- by those whose status may well benefit significantly from engendering such patterns of dependency. The pension funds of development agents guarantee them a quality of life irrespective of any failure of their efforts.

Questionable merit of engaging with existing structures and processes

The previous section focuses recognition of the challenges of using scarce personal resources to engage with existing structures and processes -- which tend to be designed to engender delay and absorb available resources. They can therefore be understood as acting to some degree as energy sinkholes. This can be specifically understood in relation to:

- **institutions:** most institutions (whether governmental or nongovernmental) are much challenged to engage with external parties. This is exemplified by their technique of placing telephone callers "on hold" -- however much the message is "we value your call". Equivalent techniques are associated with mail communications or interpersonal encounters with their officials. The consequences are most evident in concerns about voter apathy in relation to political institutions or the apathy of the young confronted by a faceless society. However they choose to frame their competence, the problematic nature of institutions becomes especially clear when they are called upon to deal with each other.
- **disciplines:** especially when they are to any degree professionalized, disciplines are much concerned to define their preoccupations so as to exclude matters with which they are not equipped to deal. Sophisticated rationalizations are used to define boundaries in practice, although implying in principle a much broader mandate. However they choose to frame their competence, the problematic nature of disciplines becomes especially clear when they are called upon to deal with each other in an interdisciplinary context.
- **belief systems:** whether as ideologies, religions or cultures, these may well empower people to a significant degree. They may also inhibit the capacity of an individual to develop potentials -- as many creative people have indicated. Typically they effectively make it a condition of recognition as a "believer" that insight should only be expressed through the framework of the belief system and should not seek to challenge or adapt it in ways that are perceived as adulteration. Belief systems, supposedly with compatible values (peace, etc), are severely challenged in any dialogue with each other (cf *Learnings for the Future of Inter-Faith Dialogue: Questions arising from the Parliament of the World's Religions*, 1993). Curiously, problematic dynamics, even leading to violence between rival factions, also obtain within religions, as within the four Tibetan Buddhist denominations: [Nyingma](#) (Red Hats), [Sakya, Kagyu](#) (Black Hats) and [Gelug](#) (Yellow Hats) [[more](#)].
- meetings
- etc

On their own terms, the above are all amplifiers of delay -- in effect designed to build temporal delay into experience:

- "slow death" cults ***
- promising meaning sometime -- promissory notes
- not designed to capture meaning of the particular quality of the moment
- leadership -- dampers / radioactivity
- temporal thermodynamics of delay
- communication distances

In search of radical coherence

Strategic challenge: How might a new strategic quest be understood and how might an individual or group engage in it?

- How will the future perceive the opportunities that the present is not currently exploring or able to see?
- How can people find a way to get some worthy excitement back into life reframing the dreary challenges of daily life and the many social and other problems which many so tragically face? What would make the hearts of young people sing?
- How could one person, or a group, radically reframe their relationship to their environment?
- How can individuals and groups safeguard against the many traps and illusions associated with such enterprises especially any group enterprise? How can they avoid the deadly sins of action in a group pride, arrogance, sloth, and the like?
- How can they safeguard any coherence and zest that is evoked, whether individually or collectively? How can they guard against dilution, adulteration and dispersion? How can they avoid misinterpretation and cooptation? How can they avoid turning such an initiative into an exercise in self indulgence and self righteousness?
- How can individuals and groups more fruitfully reframe individual weaknesses and strengths in any collective enterprise? What might be the framework for a new form of collective intensity? How can focus be given to such coherence? What might be the new challenges that such an initiative could seek and evoke?

Strategic style: Does the secret of such a quest not lie in some way with the coherence that individuals and groups have already achieved in their lives rather than in a coherence to be engendered by some form of externally negotiated agreement or mutual understanding?

- It would seem that people can only build on individual life momentum and the associated insights and learnings. Where possible, people need to count on significant others to challenge those patterns which appear to hold back any needed changes.
- The gift that individuals can bring, each in their own way, is to reframe the group they constitute on any such quest. It is an individual responsibility to uncover its coherence, each according to their particular style, and to the extent of their ability. Each therefore creates and holds the coherence of the group it is not an external artefact, charter or rule to which individuals subscribe. There is no need to seek vainly to agree or to conform.
- This could not be a onetime process. Rather each is continuously confronted with "playing" the pattern of energies perceived as part of the enterprise. Each "plays" the others as instruments, weaving in external themes as appropriate. Each is the instruments of other. Individuals design each other in or out of their personal understanding of the quest.
- Despite the radical privacy of individual involvement, the mystery of the group process lies in how each is affected by the coherence of the themes played by others in the group without "hearing" them in any normal sense of communication. There is subtle reinforcement and mutual entrainment. There is challenge. There is whatever one can individually dare to perceive and sustain.
- How people individually communicate with each other, and what they communicate, is a matter of personal choice. Such communications do not define the group. They may aspire to do so, with each tugging valiantly in a particular direction according to a particular style possibly evoking the support of some others. But the group coherence lies beyond or behind such exercises.
- The style of the quest involves great uncertainty and calls for radical questioning. Everything may prove to be both asset and liability at different times during the quest. But the fact that one may cease to play a particular note or chord, does not mean that note or chord will not be played again in another context perhaps by another instrument or in another key.

Images:

- The world seen as each individual's orchestra. The challenge being to understand how it is playing "my very own music" and in what sense each composes and directs it.
- Life as an exercise in playing the *Glass Bead Game* of Herman Hesse with the rest of the world with all the aesthetic and scientific harmonies that need to be evoked to prevent the world from falling apart. The future must still be played into existence as in some older belief systems.
- Variants of the above with the group as the world or the player. The Sufi tale of the *Conference of the Birds*.

Membership: Who would be part of such a collective quest? And who is not?

- Each can endeavour to design new people into the pattern of coherence that they bring. In this way each defines the membership of the group to which they belong. Whether others reinforce this initiative by also designing the same new people into their own pattern of coherence is another matter.
- Whether new people themselves design a pattern of coherence out of those they encounter will strongly influence their own degree of subsequent involvement. Some people may therefore effectively design themselves in whilst others design themselves out. Parts of some people may be in, whilst other parts are out.
- How in is "in" will be determined by the coherence of the pattern the individual designs for the group, each in their own way and essentially unbeknown to the others. How much of such a pattern is recognized by others will depend on the degrees of mutual reinforcement and fruitful challenge.

Functions: What might radical coherence be understood to be?

- Something to do with an unforeseen balance between unity and diversity? A form of emergent order?
- Diversity may be understood as a range or set of functions vital to the viability of the pattern of coherence. But it is quite possible to have certain kinds of music omitting many octaves, chords or notes. Viable ecosystems can function without many species.
- How much diversity is therefore a question in endeavouring to understand the kind of unity or coherence that is individually sought. This may be a personal challenge to growing understanding.
- But in any pattern of diversity there needs to be some kind of coherence to the functions present. What those functions are and how they are distinguished is a challenge for the individual patternmaker playing with the group environment. Insights from many disciplines and traditions can be used to order individual understanding as well as personal learnings.
- The energy of the collective enterprise will increase as each distinguishes more essential functions and develops a richer patterning for them. The music of the group, composed and heard by the individual, then becomes richer and more powerful. It is this coherence which is in some way heard by the rest of the group, affecting and guiding it in mysterious ways.

Paradox: For any such coherence to be radical, it must be challenged by paradox or else be trapped in dualities.

- Stressing coherence must necessarily evoke incoherence. Any such quest must live with a counterbalancing incoherence from which new degrees of coherence may be born.
- Stressing radical new depths of understanding must necessarily evoke the trivial and mundane. Any such quest must work with the ordinariness of daily life as a framework for the extraordinary. Lead is essential to the formation of gold.
- Stressing a new form of collective quest must necessarily call for a new degree of individuality. Any such quest requires radical individuality to free and form group relationships in new ways.
- Stressing the essential privacy of the quest must necessarily call for a new relationship to the wider world. Any such quest must be challenged and nourished by the dramatic problems of others in the wider world.
- Stressing a transcendent intensity to interpersonal relationships must necessarily be challenged by the undynamic, flatness of many daily encounters. How is the topography of mountains and valleys to be completed?
- Stressing a quest for the unknown is presumptuous in the extreme and necessarily evokes lessons of humility. It is the humility that ensures the originality and appropriateness of the quest.

- Stressing the novelty of any quest must necessarily evoke a sense of its banality. Paradoxically the quest maybe for insight considered self-evident to others, or even to the person discovering it for the first time.

Next steps? How can such a radical quest take form?

- Can it be "talked up" by a creative design process each feeding onto interpretations of the other's insights, as a form of "psyching up"? Playing on each others sensibilities? Or each endeavouring to "entrance" others by capturing them in a story that defines them offering them entrance to a new vision of the world? Endeavouring to lay a "spell" upon them?
- How should a proposal like the above itself be challenged?
- What is the most challenging way in which the following question may be framed and understood: *To what form of action does such an enterprise lead?*

Power of the imagination

The 21st century has started with the evident, if not blatant, assertion of "imperial" ambitions, as is apparent in the :

- the declared imperial ambitions of the USA, notably through the Project for a New American Century and its evident consequences in Afghanistan and Iraq
- the widely-recognized manipulative role of an increasingly dominant and interlocked global media, with the complicity of subtle forms of expedient self-censorship
- the arrogant and unconstrained role of multinational corporations, irrespective of their impact on local communities and economies
- the shameless role of arms manufacturers and traders in ensuring the widespread proliferation of increasingly sophisticated weaponry, aided and abetted by governments hypocritically deploring the trend
- the increasing emergence of global networks of organized crime and their role in money laundering, and traffic in drugs and people
- the constrained evolution of mainstream research in academic and other institutions, complicit in framing the criteria of the government and corporate worlds, notably such as to exclude unconventional approaches
- a degree of hyper-possessiveness of property, notably intellectual property offering remedies for tragic problems facing humanity and the planet -- and increasingly extended to include spiritual insights and methodologies of therapeutical potential (cf [Future Coping Strategies: Beyond the constraints of proprietary metaphors](#), 1992)
- the rapid evolution of exclusive faith-based approaches to government, research and policy that marginalize contrary perspectives if not actively demonizing them

These developments would appear to leave very little opportunity for individuals. However these initiatives, and the distortions of evidential truth with which they are associated, effectively constitute an encouragement to all to have proportionately greater confidence in their own imagination and innovative capacity. As in the 1960s, it is once again a case of "l'imagination au pouvoir". Just as each of the above may be understood as an exercise in imposing and eliciting particular imaginative strategies, so individuals are now free to dissociate themselves from such "stories" and develop their own (cf [Imaginal education: Game playing, science fiction, language, art and world-making](#), 2003).

*** Truth

Examples include:

- policy stories: as explored by alternative groups, exemplified by the World Social Forum (Porto Alegre, etc), and notably contrasted with the narratives of the World Economic Forum
- traditional stories: as continue to be valued in traditional indigenous communities and as a focus of recovery initiatives by those discovering the value of such community imagination as a guarantor of collective identity and esteem
- dreams: as continuing to play a powerful role in the lives of people in every walk of society, as well as being seen as a guide to self-development individuation
- channelled stories: as continuing to emerge and constitute a source of inspiration, even in the interstices of highly developed societies
- fictional fantasies: as a personal inspiration, even in the most developed societies, exemplified by the works of [J R R Tolkien](#) and [J Rowling](#), with amplified effects in their movie representations.
- mental stories: as exemplified at one extreme by those (potential exemplars) who cultivate in themselves a sense of a particular destiny, and at the other by those (possibly in care) who cultivate illusions in which they have particular roles
- self-reinvention: as exemplified at one extreme by media personalities in transiting between career phases, and at another by those who redefine their lives as a result of the experiences of a vision quest or some analogous facilitated process designed to elicit a new vision
- drug experiences: for many, access to an alternative sense of reality (to that imposed by external forces) through the use of drugs which may reinforce the significance of other approaches
- celebrity **
- advertising

The above all suggest that in many important respects people are increasingly attaching importance to non-dominant stories and narratives about reality -- some of which they feel free to invent for themselves or to buy into as they please. The fragmentation of mainstream knowledge and ideology reinforces this process. This is of course anathema to those promoting stories intended to be dominant. The process has been described elsewhere ([Dynamically Gated Conceptual Communities: emergent patterns of isolation within knowledge society](#), 2004). It might also be described in terms of the freedom to create a metaphoric habitat (cf [Reinventing Your](#)

Metaphoric Habitat, 1992).

** 21st century -- coming of age

"Union" as an emergent container for process: the "space between"

The challenge, as noted above, is to avoid premature definition of "union", or indeed any form of overdefinition of it. For Heraclitus of Ephesus, who might be said to have used the term "logos" to signify an understanding of "union" in relation to the tangible world (physis):

Men have no comprehension of the Logos, as I've described it, just as much after they hear about it as they did before they heard about it. Even though all things occur according to the Logos, men seem to have no experience whatsoever, even when they experience the words and deeds which I use to explain physis, of how the Logos applies to each thing, and what it is. (quoted in Sextus Empiricus, *Against the Mathematicians*)

The challenge may lie in the nature of the "comprehension" sought and the nature of the effort to "grasp" reality -- exemplified in the yearning for union with another (cf *Beyond Harassment of Reality and Grasping Future Possibilities: learnings from sexual harassment as a metaphor*, 1996). The attitude of Lao Tzu, in commenting on claims to define the Tao, help to clarify the challenge (cf *Hyperspace Clues to the Psychology of the Pattern that Connects in the light of 81 Tao Te Ching insights*, 2003). The role of what is not, or cannot be, said is also a factor (*Global Strategic Implications of the Unsaid: from myth-making towards a wisdom society*, 2003; *Globalization within a Global Potemkin Society*, 2000).

From such perspectives "union" may perhaps be understood as an emergent container, best defined by the dynamic relationship between the variety of efforts to define it -- as with the classic Indian story of the seven blind men encountering different parts of an elephant (cf Frederick Turner, *Seven Blind Men and an Elephant: the Future of World Religions*).

It could be argued that, with respect to "union", what we need to understand may only be expressible in a language that we do not yet know. This points to the opportunity of designing new languages more appropriate to the challenge [more] -- in the spirit of the many experiments to invent artificial languages, or to hypothesize on the integrative nature of mysterious "lost languages" (a theme of J R R Tolkien) [more].

The set of such languages might be understood as offering temporary interfaces through which to engage with aspects of the coherence of meaning. Natural languages might also be viewed in that light -- with the increasing dominance of English to be understood as a warning signal regarding loss of vital variety. Of the 6000-odd languages in the world, one is said to disappear every fortnight [more]. Many offer little-recognized insights into ways of understanding reality (cf Adam Jacot de Boinod, *Tingo*, 2005; Howard Rheingold, *They Have a Word for It: a lighthearted lexicon of untranslatable words and phrases*, 1988; *Encyclopedia of Conceptual Insights from the World's Cultures*, 1988).

The governance challenge for the individual, or for the engaged group, is how to navigate the spaces of an underdefined evolving reality - and a turbulent one at that. Some of the extreme possibilities are:

- definition:
 - commitment to a selected over-definition of "union", whether offered by dominant groups or a self-imposed set of rules
 - acceptance of under-definition of "union" and of fragmentary, unpredictable experience
- objectivity:
 - dependence on an externally defined sense of "union", as offered by mainstream institutions
 - reliance on a subjectively defined sense of "union", as advocated by enactivism and the work of Francisco Varela in recognizing the merits of "laying down a path in walking" [***]

Such multi-polar dimensioning of "union" as a container is a feature of a range of studies (cf *Systems of Categories Distinguishing Cultural Biases*, 1993), notably the seven axes of methodological bias detected by W T Jones (*The Romantic Syndrome: toward a new method in cultural anthropology and the history of ideas*. Martinus Nijhoff, 1961):

1. *Order vs disorder*: Namely the range between a preference for fluidity, muddle chaos, etc. and a preference for system, structure, conceptual clarity, etc.
2. *Static vs dynamic*: Namely the range between a preference for the changeless, eternal, etc. and a preference for movement, for explanation in genetic and process terms, etc.
3. *Continuity vs discreteness*: Namely the range between a preference for wholeness, unity, etc and a preference for discreteness, plurality, diversity, etc.
4. *Inner vs outer*: Namely the range between a preference for being able to project oneself into the objects of one's experience (to experience them as one experiences oneself), and a preference for a relatively external, objective relation to them.
5. *Sharp focus vs soft focus*: Namely the range between a preference for clear, direct experience and a preference for threshold experiences, felt to be saturated with more meaning than is immediately present.
6. *This world vs other world*: Namely the range between preference for belief in the spatio-temporal world as self-explanatory and preference for belief that it is not and can only be comprehended in terms of other frames.
7. *Spontaneity vs process*: Namely the range between a preference for chance, freedom, accident, etc and a preference for explanations subject to laws and definable processes.

Appropriately configured these might be understood to outline (rather than define) the "space between" (cf *Spherical Configuration of*

Categories to Reflect Systemic Patterns of Environmental Checks and Balances, 1994). Such configurations of polarizing dimensions might metaphorically be understood as a set of semantic "monkey bars" through and over which people can cognitively swing (cf *Configuring Conceptual Polarities in Questing: metaphoric pointers to self-reflexive coherence*, 2004).

Inhabiting the "space between"

Whether such polarities are understood as metaphorical "bars" or, more organically as "trees", the container for the "space between" offered by "union" raises questions such as:

- the identity of the "swinger", possibly defined as much by the movement as by "that which swings"
- the pathways followed, notably as highlighted by reflection on the cognitive pathways people follow when surfing the web
- the extent to which the "swinger" does indeed "lay down a path" when swinging, thus defining the space and "union" as an implicate order

In addition to recognizing the existence of that "space between", the challenge for individuals and groups is then both how to "navigate" it and how to "inhabit" it. These related challenges have been discussed elsewhere (*Navigating Alternative Conceptual Realities: clues to the dynamics of enacting new paradigms through movement*, 2002; *Envisaging the Art of Navigating Conceptual Complexity: in search of software combining artistic and conceptual insights*, 1995; *The Isdom of the Wisdom Society: Embodying time as the heartland of humanity*, 2003).

In this context the challenge of the nature of the interface between "union" and "associations" as a polarity is intimately related to the challenge of the polarity of "subject" and "object" -- and the extent to which the subject "grasps" the object, or is "grasped by it" (as noted above).

As is characteristic of any explicit binary logic (notably the "Them vs Us" currently driving global policy making), there is a case for eliciting a form of "periodic table" of polar relationships. Interestingly, it is indeed binary logic that is fundamental to both the periodic table of atoms and to the taoist *I Ching*. The first describes a sequence of atoms according to the interplay between numbers of protons and electrons, the second purports to map the patterns of change and transformation between psychosocial conditions that are polarized in different ways. The latter was considered as a vital guide to the challenges of governance in Imperial China (cf *Transformation Metaphors derived experimentally from the Chinese Book of Changes (I Ching): for sustainable dialogue, vision, conferencing, policy, network, community and lifestyle*, 1997). Governance as currently envisaged lacks approaches of comparable sophistication in responding to the policy and value dilemmas by which society is riven.

The variety of such "associations" between polar extremes distinguishes forms of "union" of a "lighter touch" from those of a "heavier touch" -- given that both may have their role and that the art of governance lies in the capacity to shift between them. The challenge of relating to any contextual "union" -- of inhabiting the "space between" -- may then be suggested by such behaviours as:

- without:
 - seeking to dominate it (in a sad replication of historical patterns of geopolitical, territorial and interclass behaviour)
 - inappropriate, and often counterproductive, efforts to possess the space, exemplified by the deployment of proprietary patenting of remedial technology and insights (cf *Future Coping Strategies: Beyond the constraints of proprietary metaphors*, 1992)
 - polluting it (through inappropriate disposal of trash, in an irresponsible replication of historical patterns of waste disposal and destruction of resources -- householding)
 - being parasitical of it (as exemplified by exploitation of non-renewable natural resources)
 - defacing it (through inappropriate forms of decoration)
- through:
 - befriending that union (cf Sallie McFague. *Models of God: Theology for an Ecological, Nuclear Age*, 1987, who has experimented with metaphors of God as Mother, Lover, and Friend of the world, with the world conceived of as God's own body)
 - "union with the world" as envisaged by many mystics [[more](#)]
 - "composing a life" (cf Mary Catherine Bateson, *Composing a Life*, 2001)
 - enacting that space, through "laying down a path in walking" (cf Francisco Varela. *Laying Down a Path in Walking: essays on enactive cognition*).
 - cultivating the space (through behaviours analogous to those of farming and animal husbandry)
 - embodying it (cf *Psychology of Sustainability: Embodying cyclic environmental processes*, 2002; *Embodying the Sphere of Change: Reframing metaphors of the I Ching as a codification of the patterns of change*, 2001)

The challenge would appear to be one of determining when the "heavier touch" -- the bureaucratic "lead" characteristic of so many approaches to **leadership** -- is appropriate. When indeed is a "lighter touch" appropriate in governance -- as metaphorically implied by the attractiveness and reflective power of "gold"? How does "leadership" get transmuted into "**goldership**" for purposes of governance? When is "not-doing" appropriate -- as acclaimed as the highest skill in some traditional Eastern approaches to governance?

The curious relationship of the "heavy" to the "light" is exemplified in a Celtic myth recalling an elder race (the *Tuatha Dé Danaan*) who through their wisdom were eventually able to "withdraw into the stones" (as discussed in *Thinking in Terror: Refocusing the interreligious challenge from "Thinking after Terror"*, 2005). There is now extensive modern myth-making in relation to "intra-terrestrials" at another "vibratory level". Elsewhere (*Psycho-social Significance of the Mandelbrot Set a sustainable boundary between chaos and order*, 2005) the question was raised whether some implications of meditational insight suggest that people can in some way withdraw into the "fabric of reality" as embodied in the dynamics encoded by the M-set?

The development and evolution of identity of any quality, in a "grid-locked" society, may only be possible in some such "space between". Perhaps the oft-cited insight of Gregory Bateson:

Break the pattern which connects the items of learning and you necessarily destroy all quality...The pattern which connects is a metapattern. It is a pattern of patterns. It is that metapattern which defines the vast generalisation that indeed it is patterns which connect. (*Mind and Nature; a necessary unity*, 1979).

should however be augmented, by emphasizing its dynamics, to read:

Destroy the dynamics of the pattern which connects and you destroy all quality

Such seemingly abstract considerations are intimately related to personal nourishment and income and to any significance to be attached to a more general understanding of "income inequality". As is increasingly discussed, in their most material expression these may well be quite inadequate to satisfying psychic needs -- irrespective of the comparative advantage they appear to give.

The "space between" is also the space within which initiative can be elicited and enhanced. This is exemplified in interpersonal relations, and in the dynamics of sexual relations experienced as most mutually enhancing. The *Kama Sutra* might even be understood as designed to encode pointers to understandings more explicitly addressed in the subtler forms of Tantra (cf *An Approach to Systematic Classification of Interpersonal Relationships*, 1978). The dynamics between people in the moment might well be understood through the patterns identified by catastrophe theory (Denis Postle, *Catastrophe Theory; predict and avoid personal disasters*, 1980):

- do we see movement or catastrophes? ***
- seeing the child in the elderly) UIA/self seeing the elderly in the child)

It is also worth recognizing ways in which the "space between" may be momentarily inhabited in transformative moments -- the "magical moments" of meetings. These might be understood as associated with a form of experiential or cognitive "flash mob".

More generally the challenge for the individual or the group -- especially with governance preoccupations and responsibilities -- is how the significance is held that exceeds their capacity of recognition or understanding. More problematic is the status and authenticity of those who are purportedly "wisdom keepers".

Embodying cultural resources

There tends to be a fundamental distinction made between any "union" of "associations", understood as external and objective, and any subjective, internal analogue. The first disassociates individual experience from the consequent understanding, the second disconnects the understanding from shared external reality. Both have considerable justification, but neither has as yet opened the way to insights that transcend their limitations.

Less well recognized is the possibility that each of these approaches in some ways echoes or encodes for the other:

- external patterns can be recognized as holding or catalyzing internal patterns, just as
- patterns, internally or intuitively recognized, can structure realities conventionally labelled as external

In the first case, for example, an organization (including a "Union of International Associations") may then be understood as something that has been concocted or composed (possibly inadvertently) by the beholder as :

- a crafted drama
- a simulation
- a conundrum

In this sense any cultural artefacts can be used in a radical manner to pattern experiential understanding -- whether they were intended for this purpose or not. All of culture and its artefacts might then be appropriated in this way -- rather than experiencing them in some way as an imposition and a constraint.

The second case has been well-explored through the work of Francisco Varela and colleagues (*Embodied Mind*\$\$\$) discussed elsewhere (***).

The interrelationship between these two approaches has been explored elsewhere (*Being the Universe : a metaphoric frontier: Co-existent Immanence of Evolutionary Phases*. 1999). It has been applied to the particular case of the UN Summit on Sustainable Development in Johannesburg (*My Reflecting Mirror World: making Joburg worthwhile*, 2002) in relation to the challenges that were the subject of that event:

To what extent is the world around me merely a mirror of my very own successes and failures in world governance -- in governing "my world"? It may indeed suit me to hold the world at arm's length -- as an object with its own dynamics quite beyond any responsibility of mine. And there may be many ways that this can be understood to be a useful, healthy, minimally presumptuous, perspective.

The question then is how to explicate the nature of the "union" of "associations" and to sustain the bridge between "external" and "internal". This grounding -- is effectively ensured through the pattern.

Singing one's own song

The above argument points to the merits of empowering people to sing their own particular song. It offers a contrast between following the linearity of textual scripts as opposed to the potentially magical associations of music. There is a sense of making one's own meaning. This might be seen as somewhat analogous to the fundamentals of food acquisition and production driven by metaphorical equivalents of "sunlight" and "photosynthesis". Nourishing meaning is then acquired or cultivated through:

- "growing / farming" -- fruits of knowledge
- "making / industry" -- cultural objects and artefacts

At a more fundamental level, there is a sense in which, through creativity, one constructs and configures the space one inhabits -- a cognitive "Big Bang" -- with the emergence of personally significant laws of astrodynamics governing that universe (cf *Entering Alternative Realities -- Astronautics vs Noonautics: isomorphism between launching aerospace vehicles and launching vehicles of awareness*, 2002) . As with the creation of the primary atoms, key concepts and constructs are invented:

- purpose
- values
- meaning
- etc

This process may give rise to necessary conceptual "shelters" and even to "castles of the mind" from which one's domain is defended. Such architectural metaphors segment and distribute significance in ways that have however already demonstrated their limitations. The design and proportions of rooms may carry reminders of larger and more integrative metaphors -- as with the role of cathedrals, also with their limitations. Architectural and design metaphors may inform the structuring of information schemas, as with websites. On a still larger scale their relation may be understood in terms of information highways -- and the songlines of the noosphere (cf *From Information Highways to Songlines of the Noosphere: Global configuration of hypertext pathways as a prerequisite for meaningful collective transformation*, 1996).

As argued elsewhere (*Innovative Global Management through Metaphor*, 1989) in recommending a programme of metaphoric development, the key question is whether metaphor can in reality be effectively used to enhance innovative policy-making for global management. Can metaphors, used non-rhetorically, provide the conceptual scaffolding for new policies and the structures resulting from them? A speculative example given there suggests:

An imaginative stimulus for such investigation is provided by a science fiction scenario explored by a number of writers. It focuses on the challenge of comprehending high degrees of complexity calling for decision-making under operational conditions (as is the case in global global management). The problem is that of piloting or navigating a spacecraft through "hyperspace" or "sub-space", as imagined in the light of recent advances in theoretical physics and mathematics. Because of the inherent complexity of such environments, writers have explored the possibility that pilots and navigators might choose appropriate metaphors through which to perceive and order their task in relation to qualitative features of that complexity - for example, flying like a bird, windsurfing, swimming like a fish, tunneling like a mole, etc. The mass of data input derived from various arrays of sensors, and otherwise completely unmanageable, is then channelled to the pilot in the form of appropriate sensory inputs to the nerve synapses corresponding to his "wings" or his "fins". Perception through the chosen metaphor is assisted by artificial intelligence software and appropriate graphic displays. The pilot switches between metaphors according to the nature of the hyperspace terrain. Such speculations do at least stimulate imagination concerning a possible marriage between metaphor and artificial intelligence in relation to governance.

This suggests, as argued elsewhere (*Governance through Metaphor*, 1987), that it is possible to elaborate a vision of desirable forms of governance based on the meaningful movement of metaphor within society. The radicalness lies essentially in the approach to ordering knowledge rather than in institutional change. The apparent similarity to the prevailing system, with all its defects, was also stressed. But it also pointed to the possibility of the emergence, or the existence already in some form, of highly undesirable forms of governance based on the deliberate design and manipulation of metaphor-models and the control of their movement through the international community.

Because of the prevailing focus on conceptual models, whether for academic or ideological reasons, little attention is paid to the manner in which they lend themselves to manipulation as metaphor. If, as has been argued in this paper, metaphors can exert a more powerful influence than paradigms, then the international community is highly vulnerable to manipulation at the metaphoric level. This is vaguely perceived in disguised form in concerns with "cultural imperialism" and various forms of "disinformation". But current processes of governance are more or less important in responding to them because the metaphoric level cannot be taken seriously at this time.

Conclusion

As founder of the "Union of International Associations" in 1910 and in the light of his work on the Universal Decimal Classification, Paul Otlet reflected on the challenges in relation to his achievements in a future-oriented treatise in 1935 (*Monde: Essai d'universalisme -- connaissance du monde, sentiment du monde, action organisée et plan du monde*. Bruxelles):

Beyond the pluralities, the separations and the compartments -- whether of doctrines or of particular sciences, of the harmonies

of distinct arts, or of fragmentary programmes and plans -- is it possible to recognize an essential unity to things? Should not an effort of the spirit be made to encompass all such plurality within the artifice of a system that would then give rise to a coherent form of cooperation through a general plan? And such a system and plan, are they achievable without it being necessary to predetermine things, without any pretention to determine the future, or to rigidify life in its eternal process of evolving new combinations, or to limit reality to the splendour of its productions?

Fundamental problems dominate all others. Problems constantly renewed, if not completely new, since thinkers have been searching for the solution to them since the origin of thought. Problem of problems....

Dealing with the world (*de Mundo*) is to explicate in essential generalities the state of development of our knowledge with regard to the principal elements, that is to say the sentiments to which they evoke in us, and the organizing action that derives from them.

Dealing with the world is then to expose a conception of the world (of all time and all philosophical work). It is to bring together the arts into a harmonious expression of the universe (of all time and all artistic work). It is to interrelate and coordinate activity in a world plan (*œuvre des réalisateurs*). Such a tripartite exposition is the purpose of the book, but it is but one of the expressions and a mode rendered obsolete by the subject matter. In fact, dealing with the world requires a three-fold instrument of globalization. *Nota synthetica, Emota Sympathica, Acta synergica*. This instrument has been conceived to be the *Mundaneum*. [translated from the French]

Subsequently held to be a visionary precursor regarding the operational modalities of the web, the significance Otlet attached to the UIA as the creator of the Mundaneum call for further reflection (cf *Union of International Associations -- Virtual Organization: Paul Otlet's 100-year hypertext conundrum ?* 2001).

How then to explore the possibilities of a "Union of Intelligible Associations" in the 21st century?

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