



# laetus in praesens

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## Embodying Global Hegemony through a Sustaining Pattern of Discourse

### Cognitive challenge of dominion over all one surveys

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## Introduction

This is an exploration of possible global organization of the pattern of value-based polarities by which discourse is significantly characterized: big-small, win-lose, nice-nasty, hot-cold, friend-enemy, clean-dirty, expensive-cheap, and the like.

The point of departure is the extensive study of value polarities undertaken within the [Human Values Project](#) as part of the *Encyclopedia of World Problems and Human Potential*. The project resulted in tabular presentations of a comprehensive set of value-charged words, most notably through clustering 230 value polarities into 45 types.

The issue here is how such such polarities might be organized globally such as to respect the frequency with which a relatively limited number dominate discourse in the moment, with others framing that discourse at lower frequency over longer periods -- whilst others may only rarely be recognized as of any significance, if at all. Thus, rather than the preoccupation in that earlier exercise with a pattern of categories **statically** understood, the concern here is whether their relevance is evident to a far greater degree in the **dynamics** of their use in discourse -- and the cognitive priorities thereby implied.

The approach then frames **the question for the individual** as how cognitively to embody "global hegemony" and the manner whereby it might be sustained through a pattern of discourse. Understood as a subjective "covert operation", the argument follows from a previous discussion (*Eliciting Insight from Covert Operations by US: understanding global governance otherwise in response to THEM*, 2015).

The provocative reference to "global hegemony" serves to emphasize the point that everyone is free to frame their own relationship to global reality (as they experience and understand it). Such a framing may be understood in terms of some process of "dominion", "sovereignty", "imperialism", or otherwise -- however it is fruitful creatively to imagine and engage in the cognitive governance of all one surveys.

Rather than submit to frameworks of external convention (with whatever token protest appears appropriate), it is then for the individual to reimagine how globality and globalization are to be experienced, as previously argued (*Engendering 2052 through Re-imagining the Present*, 2012). This took the form of a critical review of a report to the [Club of Rome: 2052: a Global Forecast for the Next Forty Years](#) (2012) prepared by [Jørgen Randers](#) as a follow-up to *The Limits to Growth*, (1972).

The review frames the challenge of transcending the simplistic understandings of global order which currently dominate conventional discourse and the many suspicions regarding the hidden agendas of vested interests. It follows earlier criticism of the principles on which *The Limits to Growth* report was based (*World Dynamics and Psychodynamics: a step towards making abstract "world system" dynamic limitations meaningful to the individual*, 1971)

Given the seemingly chaotic current situation, how indeed is "global integration" to be imagined and sustained by the individual (*Eliciting a Universe of Meaning -- within a global information society of fragmenting knowledge and relationships*, 2013; *Imaginative Reconfiguration of a post-Apocalyptic Global Civilization: engaging cognitively with the illusion of the "End of the World"*, 2012)?

Ironically, and perhaps appropriately, this challenge bears a strange resemblance to that for any "head of state", "supreme leader", or the like. Their internal dialogue as individuals would of course be echoed and reinforced by the dialogue within any supportive leadership "group of the wise", as can be speculatively argued (*Implication of the 12 Knights in any Strategic Round Table*, 2014).

With the emphasis on the dynamics of such discourse, the question is then how that discourse is to be cognitively "embodied", as might follow from the arguments of [George Lakoff](#) and [Mark Johnson](#) (*Philosophy In The Flesh: the embodied mind and its challenge to Western thought*, 1999). Given the meaning associated by many with sport and dance, of relevance is the subsequent work on the cognitive implications of movement (Mark Johnson, *The Meaning of the Body: aesthetics of human understanding*, 2007; [Maxine Sheets-Johnstone](#), *The Primacy of Movement*, 2011).

Especially intriguing is the relation between the sustaining discourse and the pattern of global organization as this might reflect a sense of "global union", "empire", or a "Caliphate", namely a community of believers -- if not a ["global brain"](#). Each such potential modality highlights the role of belief and credibility -- much as these are recognized to be fundamental to the viability of the global financial system.

The argument is of relevance to individual reappropriation of the agenda of different parties in quest of some form of [strategic dominance](#). Of even of greater relevance is the possibility for an individual to explore a cognitive analogue to the military approach to [full-spectrum dominance](#) (Bruce Gagnon. *The Pentagon's Strategy for World Domination: full spectrum dominance, from Asia to Africa, Global Research*, 2014). As in conventional military terms, this involves achievement of control over all dimensions of the "cognitive battlespace". As a form of memetic warfare, this means ensuring effective "possession" of an overwhelming diversity of the cognitive resources associated with terrestrial, aerial, maritime, subterranean, extraterrestrial, psychological, and bio- or cyber-technological warfare. Any opposition with respect to engagement with air, land, maritime, and space domains and information environment is then wholly contained and encompassed.

For the purposes of this exercise, the control of the political, economic, or military predominance of one cognitive state over others is seen as an analogue to the questionable pattern of [hegemony](#). The issue is the extent to which an individual can then embody that pattern globally as *hegemon*, as the [Great Powers](#) sought to establish [European hegemony](#) over Asia and Africa. The pattern is now evident in the manner in which the "1%" seek to manipulate the value system and mores of a society, so that its view becomes the world view (*Weltanschauung*), as in the understanding of [cultural hegemony](#). Potentially it is through the individual quest for that global embodiment that future governance can be imagined otherwise -- most notably through re-cognition of its limits as can be variously discussed (*Limits to Human Potential*, 1976; [Gyorgy Doczi](#), *The Power of Limits: proportional harmonies in nature, art, and architecture*, 2005; [Ervin Laszlo](#), *Inner Limits of Mankind: heretical reflections on today's values, culture and politics*, 1989).

## Value dynamic "transcendence" through "embodiment"?

Especially problematic in exploration of values fundamental to any discourse is the ambiguity of terms freely used, in addition to confusion regarding the nature of "values" with which such terms may be associated. The confusion is exacerbated by frequent reference to values in political declarations -- as though there could be no possible confusion as to what is signified.

Curiously the confusion is well-illustrated by the failure to provide any checklist of values -- as might be considered consistent with assumptions regarding lack of such confusion. In contrast to its treatment of other themes, *Wikipedia*, for example, provides no such checklist. It does however include a useful summary of the [World Values Survey](#) which however also avoids any explicit listing of the values to which political declarations and strategic articulations might be assumed to refer. A typical euphemism is "family values" -- but again without the suggestion of any checklist. More suspicious is the explicit reference to "democracy" and "peace" as being values -- with little consideration of how interpretations of such references can be manipulatively reinterpreted.

For the purpose of the Human Values Project, this issue was directly addressed (as indicated below) by exploring systematically the terms with which values could be said to be associated -- whether these could be understood "constructively" or "deconstructively". The dynamic ambiguity of interpretation was then "held" and "contained" by clustering the value-charged terms within value polarities.

Use of the constructive-destructive terminology is however itself indicative of challenges unresolved to some degree. Those terms were highlighted in contrast to the more conventional references to "positive values" versus "negative values". The former are typically considered to be unquestionably "good", whilst the latter are then necessarily unquestionably "bad" (even "evil").

This understanding can be fruitfully reviewed, as in the arguments of [Barbara Ehrenreich](#) (*Bright-sided: how the relentless promotion of positive thinking has undermined America*, 2009; *Smile Or Die: how positive thinking fooled America and the world*, 2010). In 2000, the [American Psychological Association](#) (APA) held a symposium on the "(Overlooked) Virtues of Negativity", introduced by Barbara Held (*Stop Smiling, Start Kveething : a 5-step guide to creative complaining*, 2001; *The Tyranny of the Positive Attitude in America: observation and speculation*, *Journal of Clinical Psychology*, 58, 2002, 9, pp. 965-991; *The Negative Side of Positive Psychology*, *Journal of Humanistic Psychology*, 2004; 44: 9-46)

The point can be made more generally, as separately discussed (*Being Positive Avoiding Negativity: management challenge of positive vs negative*, 2005) under the following indicative headings:

<a href="#">Interpersonal games</a>	<a href="#">Dependence of system operation on contrasting modes</a>	<a href="#">Leadership and "negative capability"</a>
<a href="#">Denial of the negative</a>	<a href="#">Dualistic games</a>	<a href="#">Relating to the unknown -- beyond denial</a>
<a href="#">Unchallenged dangers of positive thinking</a>	<a href="#">Reductio ad absurdum?</a>	<a href="#">Dangerous consequences of ignoring the cycle</a>
<a href="#">Vulnerability to disaster</a>	<a href="#">Dangerous associations</a>	<a href="#">Symbolic relationship between positive and negative</a>
<a href="#">Concrete situations</a>	<a href="#">Uncritical thinking</a>	<a href="#">Cognitive singularities</a>
<a href="#">Testing the boundaries of "being positive"</a>	<a href="#">Management challenge: positive vs</a>	
<a href="#">Systems management: value of both</a>		

The argument for a more "transcendent" approach can be illustrated by recognition of the need for [critical thinking](#) -- despite frequent efforts to frame any criticism as necessarily "negative". There are indeed groups concerned with the development of critical thinking capacity and the vital need for its appropriate discernment. This is especially evident from a cybernetic perspective with respect to the need for **both positive feedback** and **negative feedback**.

At the simplest level, the dilemma of the "positive" is readily recognized in the dangers of being "suffocated" by kindness -- otherwise to be understood as unquestionably positive. Hence the case for so-called "**tough love**" and a more general understanding of the paradoxical value of "negative strategies" which featured in the complementary [Global Strategies Project](#) of the above-mentioned Encyclopedia ("*Positive*" vs "*Negative*" strategies). (*Liberating Provocations: use of negative and paradoxical strategies*, 2005) \*\*\*\*

Although use of the polarity approach suggests the possibility of "transcendence", understanding the paradoxical cognitive significance of this is appropriately highlighted by its relationship to the suggested cognitive modality of "embodiment". Such juxtaposition is indicative of the need for more fruitful ways of imagining paradoxical relationships, as discussed separately (*World Introversion through Paracycling: global potential for living sustainably "outside-inside"*, 2013; *Embodying the Paradoxes and Contradictions of the Pursuit of Happiness: en-joying the world through en-joying oneself*, 2011).

### Variety of value dynamics

Detailed descriptions of the background and methodology of the Human Values Project are [separately available](#). It should be emphasized that the project was based on identification of positively or negatively value-charged words in English in *Roget's Thesaurus* -- specifically addressing ambiguity of language by clustering "constructive" and "destructive" words within 230 value polarities. These were in turn clustered as a table of 45 value types (Figure 4) reproduced below. A specific commentary endeavoured to clarify the challenge of **value confusion**. Other commentaries included the following:

- [Methodological preamble](#)
- [Values as attractors](#) \*\*\*
- [Comprehending the complexity of the value surface](#)
- [Self-organization and its catalysts](#)
- [Beyond "equilibrium" values](#)
- [Understanding value systems](#)
- [Interrelating values](#)
- [Values as attractors](#)
- [Wisdom and requisite variety](#)
- [A new global organizational order?](#)

The successive stages of that process are readily evident from a series of tables (with indication of the count of items identified).

<a href="#">Figure 1: Value words: constructive (987)</a>	<a href="#">Figure 3: Value polarities (230)</a>	<a href="#">Figures 5: Value type data</a>
<a href="#">Figure 2: Value words: destructive (1992)</a>	<a href="#">Figure 4: Value types (45 value polarity clusters)</a>	<a href="#">Figure 6: Value frequency by type</a>

The table below (originally Figure 4) clusters value polarities included in [Figure 3](#) (with others omitted from it). The words were used as a basis for relating values to [world problems](#) (understood in terms of "destructive values") and organizational [strategies](#) ("constructive values") in the *Encyclopedia of World Problems and Human Potential*. An analysis of the original data corresponding to each cell is presented in [Figure 5](#) and [Figure 6](#).

Value types clustering value polarities					
Cluster type names are only indicative.					
	FOCUS IN CONTEXT	CERTAINTY	INTRINSIC CONSTRAINT	NECESSITY	EXTERNAL CONSTRAINT
ORDER	<b>Existence*complex</b> Existence-Nonexistence Intrinsicity-Extrinsicity Substantiality-Unsubstant.	<b>Relationship*complex</b> Relatedness-Unrelated. Uniformity-Nonuniformity Originality-Imitation Equality-Inequality Identity-Difference Similarity-Dissimilarity Agreement-Disagreement	<b>Quantity*complex</b> Greatness-Smallness Increase-Decrease Conjunction-Separation Completeness-Incomplet. Superiority-Inferiority Simplicity-Complexity Cohesion-Disintegration	<b>Order*complex</b> Order-Disorder Inclusion-Exclusion Continuity-Discontinuity Conformity-Nonconformity	<b>Number*complex</b> Numbered-Unnumber. Numerousness-Fewness Unity-Duality
CHANGE	<b>Time*complex</b> Durability-Transience Futurity-Antiquity Youth-Age Frequency-Infrequency Perpetuity-Instantaneous. Newness-Oldness Timeliness-Untimeliness Regularity-Irregularity	<b>Change*complex</b> Change-Permanence Continuance-Cessation Evolution-Revolution Stability-Changeableness Conversion-Reversion	<b>Causation*complex</b> Eventuation-Imminence Attributability-Chance Causation-Culmination	<b>Power*complex</b> Power-Impotence Energy-Moderation Production-Reproduction Influence-Influenceless. Strength-Weakness Productiveness-Unproduct. Ancestry-Posterity Concurrence-Counterac.	<b>Space*complex</b> Location-Dislocation Container-Content Presence-Absence
FORM	<b>Dimension*complex</b> Bigness-Littleness Nearness-Distance Height-Lowness Expansion-Contraction Breadth-Narrowness Depth-Shallowness	<b>Contextuality*complex</b> Centrality-Environment Circumscription-Intrusion	<b>Structure*complex</b> Form-Formlessness Opening-Closure Symmetry-Distortion	<b>Motion*complex</b> Motion-Quiescence Impact-Reaction Swiftness-Slowness Attraction-Repulsion	<b>Relative motion*complex</b> Direction-Deviation Progression-Regression Convergence-Divergen. Elevation-Depression Leading-Following Approach-Recession Overrunning-

					Shortcom. Oscillation-Agitation
Q U A L I T Y	<b>Absolute properties*complex</b> Heat-Cold Transparency-Opaque. Light-Darkness Weight-Lightness	<b>Relative properties*comp.</b> Hardness-Softness Colour-Colourlessness Elasticity-Toughness	<b>Life*complex</b> Materiality-Immateriality Humanity-Nonhumanity Masculinity-Femininity Life-Death Sexiness-Unsexiness	<b>Sense*complex</b> Sensation-Insensibility Savouriness-Unsavour. Vision-Blindness Appearance-Disappear. Silence-Loudness Tangibility-Intangibility Fragrance-Stench Visibility-Invisibility Audibility-Inaudibility Harmony-Discord	<b>Intellectual faculties*.</b> Intelligence-Unintell. Knowledge-Ignorance Intuition-Reason Sanity-Insanity Thought-Thoughtless.
S I G N I F I C A N C E	<b>Evaluation*complex</b> Research-Discovery Judgement-Misjudgement Discrimination-Indiscrim. Overestimation-Underest.	<b>Credibility*complex</b> Belief-Unbelief Limitation-Unlimitedness Certainty-Uncertainty Provability-Unprovability Possibility-Impossibility Truth-Error	<b>Truth*complex</b> Illusion-Disillusionment Affirmation-Denial Assent-Dissent	<b>Attitude*complex</b> Curiosity-Incuriosity Carefulness-Neglect Remembrance-Forgetful. Broadmindedness-Narrow. Attention-Inattention Imaginativeness-Unimag. Expectation-Inexpectation	<b>Meaning*complex</b> Meaning-Meaninglessn. Interpretability-Misinterp. Intelligibility-Unintellig.
I N I T I A T I V E	<b>Communication*complex</b> Education-Miseducation Elegance-Inelegance Eloquence-Uneeloquence Communicativeness-Unco. Representation-Misrepres. Conciseness-Diffuseness	<b>Choice*complex</b> Willingness-Unwillingness Desire-Avoidance Resolution-Irresolution Choice-Necessity	<b>Motivation*complex</b> Conventionality-Unconvent. Motivation-Dissuasion Formality-Informality	<b>Adaptation*complex</b> Oversufficiency-Insuffic. Expedience-Inexpedience Goodness-Badness Appropriateness-Inapprpr. Importance-Unimportance Perfection-Imperfection	<b>Integrity*complex</b> Cleanness-Uncleanness Health-Disease Improvement-Impairm. Refreshment-Relapse Healthfulness-Unhealthf. Selfactualization-Neuros. Restoration-Destruction Safety-Danger
A C H I E V E M E N T	<b>Action*complex</b> Action-Inaction Preparedness-Unprepar. Exertion-Rest	<b>Achievement*complex</b> Victory-Defeat Facility-Difficulty Behaviour-Misbehaviour Accomplishment-Nonacco. Prosperity-Adversity Skillfulness-Unskillfulness	<b>Compliance*complex</b> Authority-Lawlessness Freedom-Restraint Observance-Nonobserv. Leniency-Compulsion Obedience-Disobedience Consent-Refusal	<b>Interaction*complex</b> Support-Opposition Attack-Defence Accord-Disaccord Neutrality-Compromise	<b>Possession*complex</b> Possession-Loss Wealth-Poverty Economy-Prodigality Sharing-Appropriation Expensiveness-Cheap.
C O N S E Q U E N C E	<b>Feeling*complex</b> Feeling-Unfeelingness Patience-Impatience Pleasure-Displeasure Cheerfulness-Solemnity Amusement-Boredom Excitement-Inexcitability Pleasantness-Unpleasant. Contentment-Discontent. Exultation-Lamentation Comfort-Aggravation	<b>Anticipation*complex</b> Hope-Hopelessness Caution-Rashness Courage-Fear	<b>Discriminative affection*complex</b> Taste-Vulgarity Naturalness-Affectation Modesty-Vanity Wonder-Unastonishment Beauty-Ugliness Pride-Humility Repute-Disrepute	<b>Socialization*complex</b> Sociability-Unsociability Friendship-Enmity Conjugality-Celibacy Hospitality-Inhospitality Love-Hate	<b>Benevolence*complex</b> Courtesy-Discourtesy Compassion-Pitilessness Congratulation-Envy Kindness-Unkindness Forgiveness-Vengeance Gratitude-Ingatitude
R E A D A P T A T I O N	<b>Appropriateness*complex</b> Rightness-Wrongness Respect-Disrespect Dueness-Undueness	<b>Judgement*complex</b> Approval-Disapproval Justice-Injustice Probity-Improbity	<b>Morality*complex</b> Unselfishness-Selfishness Innocence-Guilt Temperance-Intemper. Virtue-Vice Chastity-Unchastity	<b>Retribution*complex</b> Legality-Illegality Atonement-Punishment Vindication-Condemnation	<b>Redemption*complex</b> Godliness-Ungodliness Sanctity-Unsanctity Orthodoxy-Unorthodoxy Piety-Impiety

The dynamics in discourse implied by the set of polarities suggest that they can be fruitfully understood as "oscillators" -- reflecting alternation between radically opposing perspectives.

Whilst somewhat useful as an initial pattern, the above table presents a challenge as to the nature of a more meaningful and useful organization of those "oscillators". Specifically this may be understood as how the challenge is to be understood in terms of global organization of discourse -- understood especially in terms of the integrative sense of global, rather than its planetary sense, as discussed separately (*Future Generation through Global Conversation: in quest of collective well-being through conversation in the present moment*, 1997).

## Discourse patterning methodology

Although the intent of highlighting and enabling global cognitive organization can be clearly stated, far less evident is what might any such order then imply and how it might be envisaged and elicited. The above table, as a first iteration, can be seen as necessarily embodying a variety of inadequacies in terms of any such intention.

**Iterative process envisaged:** If the patterning exercise is to be explored through a tabular presentation initially, a useful question is how any transformation to a more valuable later iteration could then be understood to require possibilities such as:

- changing the order purportedly associated with the labels of columns and rows, by changing those labels to indicate other dimensions
- shifting the content of cells of the table to other cell positions in the table.
- shifting a given cell cluster into a new positions, grouping it with one or more other clusters
- moving polarities from within current clusters to other positions, namely disassociating the current attribution from the cluster where it is found

The process as a whole might be compared to operations with a [Rubik Cube](#), or even to those with an [abacus](#). The question is how any such movement would then better highlight a sense of global organization.

Rather than focus on the possibility of definitive closure on a satisfactory pattern -- if such is as useful as might be assumed -- considerable benefit could however be derived from a preliminary exercise in considering how the pattern of columns and rows might be understood, irrespective of the ability to attribute content to the cells within the table in a satisfactory manner. This was the approach taken with respect to *Functional Classification in an Integrative Matrix of Human Preoccupations* (1982) -- used for ordering international organizations, world problems, and global strategies in the *Yearbook of International Organizations* and the *Encyclopedia of World Problems and Human Potential*.

The following are usefully considered as catalysts for imaginative engagement with discourse for which a case has been separately made (*In Quest of Mnemonic Catalysts -- for comprehension of complex psychosocial dynamics*, 2007)

**Column "dimensions"** potentially valuable to an integrative patterning, on the assumption that those on left would hold polarity dynamics of greatest significance (frequency) to discourse:

- Objective to Subjective / Explicit to Implicit / Tangible to Intangible / External to Internal / Concrete / Abstract (*Defining the objective ∞ Refining the subjective ?!: Explaining reality ∞ Embodying realization*, 2011).
- Reflexivity: from unself-reflexive discourse to highly self-reflexive discourse ([Douglas Hofstadter](#), *I Am a Strange Loop*, 2007; [Hilary Lawson](#), *Reflexivity, The Post-Modern Predicament*, 1986)
- Orders of cybernetics: from first-order cybernetics through to fourth order cybernetics ([Maurice Yolles and Gerhard Fink](#), *A General Theory of Generic Modelling and Paradigm Shifts (part 2): cybernetic orders*. *Kybernetes*, 2015).
- Degrees of definitional closure: from enclosure through to openness ([Hilary Lawson](#), *Closure: A Story of Everything*, 2001)
- Metaphors, including: (cognitive) "gears", from first to highest; (cognitive) "limb" systems, from simple to multiple (*The Future of Comprehension: conceptual birdcages and functional basket-weaving*, 1980)
- Cognitive development stages, as explored for example by [Jean Piaget](#) with respect to children: *Sensorimotor stage*, *Preoperational stage*, *Concrete operational stage*, and *Formal operational stage*.
- Meditation stages as understood by various (spiritual) disciplines (*Navigating Alternative Conceptual Realities: clues to the dynamics of enacting new paradigms through movement*, 2002). Of particular interest is the extent to which cognitive states in the left-most columns could be related to what is recognized in Zen Buddhism as *Shoshin*, namely "beginner's mind" ([Shunryu Suzuki](#), *Zen Mind, Beginner's Mind*, 2011). It could be potentially indicative of a mode of discourse characterized by an attitude of openness, eagerness, and lack of preconceptions in relation to the topic, even in one involving the most subtle insights. It is significant that it the attitude is valued in [Japanese martial arts](#).
- Degrees of cognitive embodiment and "attachment"), however they might be articulated
- Degree of "need", as articulated in by [Abraham Maslow](#) in his much-cited [hierarchy of needs](#).
- Pattern of categories in [Roget's Thesaurus](#) (revisiting the source for the original pattern of value polarities, cited above)
- Aesthetics and surrealism, as exemplified by [Gertrude Stein](#) (*Rose is a rose is a rose is a rose*, 1913) and [René Magritte](#) (*Ceci n'est pas une pipe*, 1929)
- Spherically symmetrical polyhedra: from tetrahedron, through other Platonic forms, to Archimedean forms, according to the preoccupation of [R. Buckminster Fuller](#) (*Synergetics: Explorations in the Geometry of Thinking*, 1975; and *Synergetics 2: Explorations in the Geometry of Thinking*, 1979) as discussed separately (*Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009). It is remarkable that so little considerations is given to the metaphorical

implications of the geometrical forms with which the governance of the world is associated, most notably the Pentagon. Given the enthusiasm for 12-foldness in strategic articulations, it is especially intriguing in that case to note the configuration of 12 pentagons to form a dodecahedron, for example -- with whatever that might imply (*Eliciting a 12-fold Pattern of Generic Operational Insights: recognition of memory constraints on collective strategic comprehension*, 2011). The dodecahedron is particularly significant in that it is one of the closer polyhedral approximations to a sphere -- in any quest for global "full spectrum dominance" (as noted above). It is curious how poorly explored is the cognitive and strategic "gap" between local ("flat Earth") use of polygons, like the Pentagon and the Hexagon, and spherical preoccupations with globality.

Row "**dimensions**" could, for example, be considered in terms of

- Variety of cognitive dynamics within each column
- Complementary forms of cognitive operation associated with each column. In the case of the most tangible, for example, a fourfold distinction might be made (metaphorically) with respect to a "pumping" function, a "stabilizer" function, a "navigational" function, and an "intentionality" (questing) function. These correspond somewhat to the explorations of [Arthur M. Young](#) (*Geometry of Meaning*, 1976).

Explicitness / Objectivity	Physically explicit / tangible	Psychosocially explicit / implicit	Cognitively explicit / implicit	Existentially implicit / intangible
Reflexivity	Recognition of other	Self-recognition (mirror-test)	Self-reflexivity-I	Self-reflexivity-II
Cybernetic orders	first order cybernetics	second order cybernetics	third order cybernetics	fourth order cybernetics
Metaphor: cognitive gears	first gear	second gear	third gear	fourth gear
Metaphor: cognitive limbs / feet	1-2 limbed 3-6	4-8 limbed	10-12 limbed	multi-limbed
Metaphor: cognitive levels				
Metaphor: polyhedra	Tetra	Cube-Octa	Icosa-dodeca	Archimedean
Periodic table: shells				
Patterns >>				

Aside from the number of rows and columns, the **tabular form as a whole** could be considered in terms of how best to reflect:

- Various arrays of cognitive states and psychological types, most notably the [Myers-Briggs Type Indicator](#) (MBTI®), which tend to be notable for the manner in which they are subject to intellectual copyright, with implications discussed separately (*Future Coping Strategies: beyond the constraints of proprietary metaphors*, 1992).
- Understandings and applications of so-called **multiple intelligences**. That of [Howard Gardner](#) distinguishes the following intelligence modalities: **Musical-rhythmic and harmonic**, **Visual-spatial**, **Verbal-linguistic**, **Logical-mathematical**, **Bodily-kinesthetic**, **Interpersonal**, **Intrapersonal**, **Naturalistic**, and **Existential**. (*Frames of Mind: The Theory of Multiple Intelligences*, 2011)
- Axes of bias as distinguished in terms of extremes by [W. T. Jones](#), namely: *Order vs disorder*, *Static vs dynamic*, *Continuity vs discreteness*, *Inner vs outer*, *Sharp focus vs soft focus*, *This world vs other world*, and *Spontaneity vs process* (*The Romantic Syndrome: toward a new method in cultural anthropology and the history of ideas*, 1961)
- Types of questions, namely the so-called 7 WH-questions: *Where?*, *When?*, *What?*, *Which?*, *How?*, *Who?*, and *Why?*. These can be variously considered (*Conformality of 7 WH-questions to 7 Elementary Catastrophes: an exploration of potential psychosocial implications*, 2006; *Towards a Periodic Table of Questions: strategic opportunities from ordering WH-questions*, 2006). The mathematical implication is consistent with the arguments of [George Lakoff](#) and [Rafael Núñez](#) (*Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2000).

Of particular interest is the sense in which the tabular presentation could be recognized as forming a periodic table, as noted above (*Functional Classification in an Integrative Matrix of Human Preoccupations*, 1982) and subsequently explored (*Tuning a Periodic Table of Religions, Epistemologies and Spirituality -- including the sciences and other belief systems*, 2007; *Periodic Pattern of Human Knowing: implication of the Periodic Table as metaphor of elementary order*, 2009; *Towards a Periodic Table of Ways of Knowing -- in the light of metaphors of mathematics*, 2009).

However the exploration of this metaphor from chemistry highlights the distortion associated with the tabular representation of the globality of the nested **electron shells** of the chemical elements. This serves to emphasize the need to consider the possibility of spherical configuration, irrespective of the illusion resulting from the relative ease of manipulation of a tabular representation. More intriguing is metaphorical use of "weight" variously used to distinguish the elements of discourse.

## Spherical representation consistent with sense of globality

Whilst the argument can be most readily presented in tabular form, this is necessarily in fundamental contrast with any global sense that might be enabled by a spherical representation. The case for this can be variously argued (*Spherical Configuration of Categories -- to reflect systemic patterns of environmental checks and balances*, 1994; *Spherical Accounting: using geometry to embody developmental integrity*, 2004; *Engaging with Globality through Cognitive Crowns*, 2009; *Adhering to God's Plan in a Global Society*, 2014). It is also the case that some consideration was originally given in the Human Values Project to the spherical configuration of value polarities.

**Insights suggested by spherically symmetrical polyhedra:** With respect to the table as a whole, it is intriguing to consider the


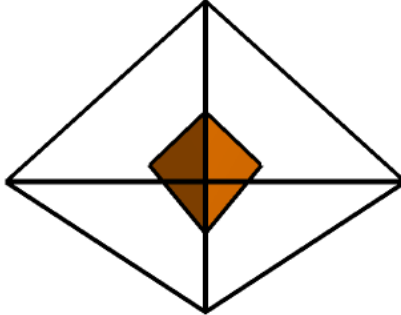

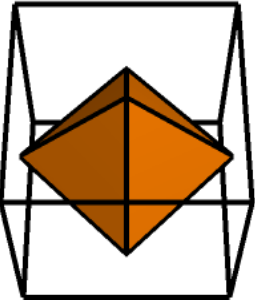
implications of the suggested column sequence being mirrored in some way with the row configuration.

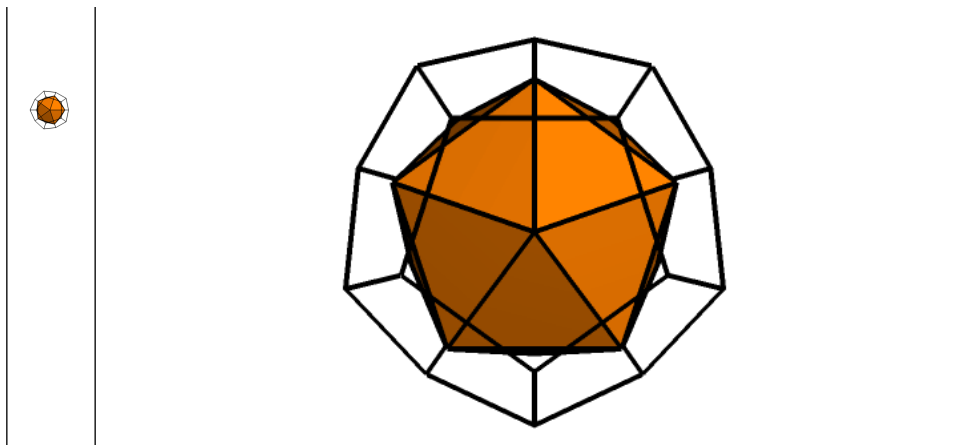
	Tetrahedron	Cube Octahedron	Icosahedron /Dodecahedron	Archimedean polyhedra
Tetrahedron				
Cube Octahedron				
Icosahedron Dodecahedron				
Archimedean polyhedra				

The possibility acquires greater interest through relating value polarity to the [duality](#) of projective spherical geometry. This is the manner in which a given polyhedron is transformed into its dual -- with an apex becoming the centre of a face, and a face becoming an apex. The above table might then be presented such as to distinguish columns and rows in those terms. \*\*\* points/lines

	Tetrahedron	Cube	Icosahedron	Archimedean polyhedra
Tetrahedron				
Octahedron				
Dodecahedron				
Archimedean polyhedra ****				

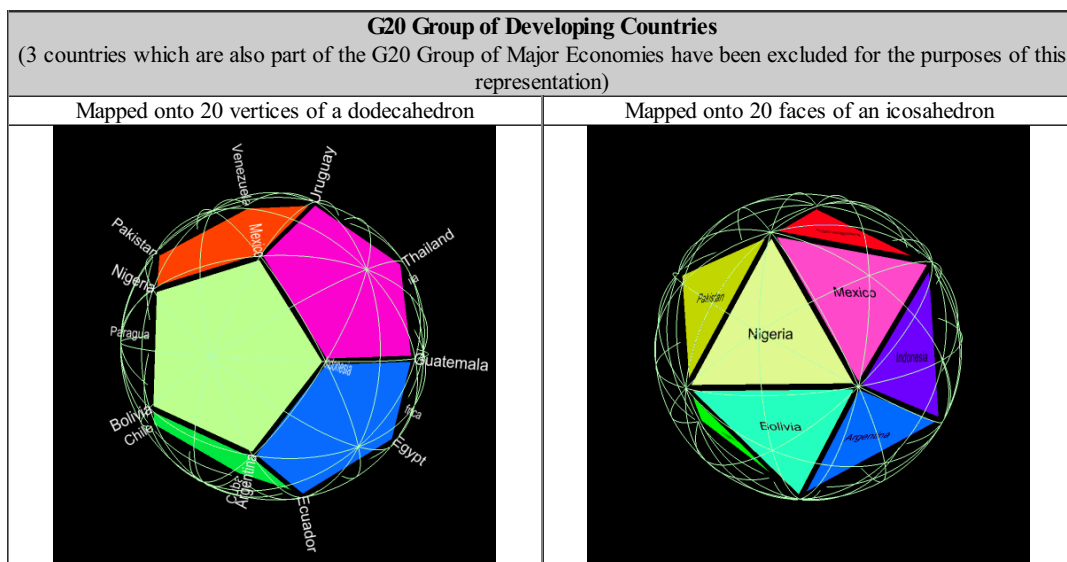
Of particular interest is the fact that the tetrahedron is its own dual.

<b>Animation of morphing between Platonic polyhedra and their duals</b> (all animations prepared using <a href="#">Stella Polyhedron Navigator</a> )	
Variants of Tetrahedron-to-Tetrahedron morphing potentially indicative of a "tetrahedral conversation" and the challenge to it?	
	
Variants of Cube-to-Octahedron morphing potentially indicative of a "cubic conversation" and the challenge to it?	
	
Variants of Icosahedron-to-Dodecahedron morphing potentially indicative of a "dodecahedral conversation" and the challenge to it?	



The potential significance of morphing between duals was highlighted in animations in previous exercise in the case of both the [G-20 major economies](#) and of the [G20 developing nations](#) (*Global strategic significance of 20-fold configurations*, 2015). Each may be mapped onto a dodecahedron morphing into an icosahedron raising valuable questions as to the discourse connectivity in either or both modalities. The animation for the developing country group is reproduced below.

As indicated previously, this may also be explored in terms of polyhedral representation (*Polyhedral Pattern Language: software facilitation of emergence, representation and transformation of psycho-social organization*, 2008; *Towards Polyhedral Global Governance: complexifying oversimplistic strategic metaphors*, 2008). The latter presents a mapping of the G20 Group onto an icosahedron then complexified to an icosidodecahedron and a rhombicosidodecahedron.



## Point and line considerations in discourse mapping

In the mathematics of projective geometry, points and lines play a major role in definitions and theorems relating to understandings of symmetry. Duality, as illustrated above, provides a formalization of this. The term duality is also significant in other domains. *Wikipedia* provides an extensive [List of dualities](#), distinguishing the significance of the principle in mathematics, philosophy, engineering and physics.

**Comprehension geometry:** With respect to this exploration, of considerable interest is the metaphorical role of points and lines in discourse. This has been previously discussed (*Experience of Cognitive Implication in Fundamental Geometry: unexamined metaphoric framing of strategic discourse*, 2012) under the following headings:

- |   |   |
|---|---|
| Comprehension framed by "Point"                             | Comprehension framed by "Cylinder"                            |
| Comprehension framed by "Line"                              | Comprehension framed by polyhedra: "Tetrahedron", "Cube", etc |
| Comprehension framed by polygons: "Triangle", "Square", etc | Comprehension framed by "Sphere"                              |
| Comprehension framed by "Circle"                            | Comprehension framed by "Torus"                               |

The argument there with respect to such use of point and line is a development of an earlier discussion (*Cognitive Realignment: making points and aligning a target*, 2009). Point is extensively used with regard to *making a point* and clarification of a *viewpoint*, for example. It is typically expected that *points* are configured in terms of a *line* of argument which can be followed, with several such lines framing a more general concern. In psychosocial settings, notably in the language of electronically enabled discourse, use may be made of *node* rather than point, and of *link* rather than line. The sense of *non sequitur* of fundamental concern to the coherence of an argument may then be partially understood in terms of "following" (or not), as in social media.

**Metaphorical implications for pillars and monuments:** Of further relevance is the transformation of points and lines into legal and

strategic discourse, as with the points in a declaration or plan, and adaptation of lines into "pillars", as is typical of the language of the European Union (*Coherent Value Frameworks: pillar-ization, polarization and polyhedral frames of reference*, 2008).

Such intangible pillars may even be represented symbolically in stone -- echoing the architecture of classical temples (*Enstoning in Memorials and Monuments*, 2012).

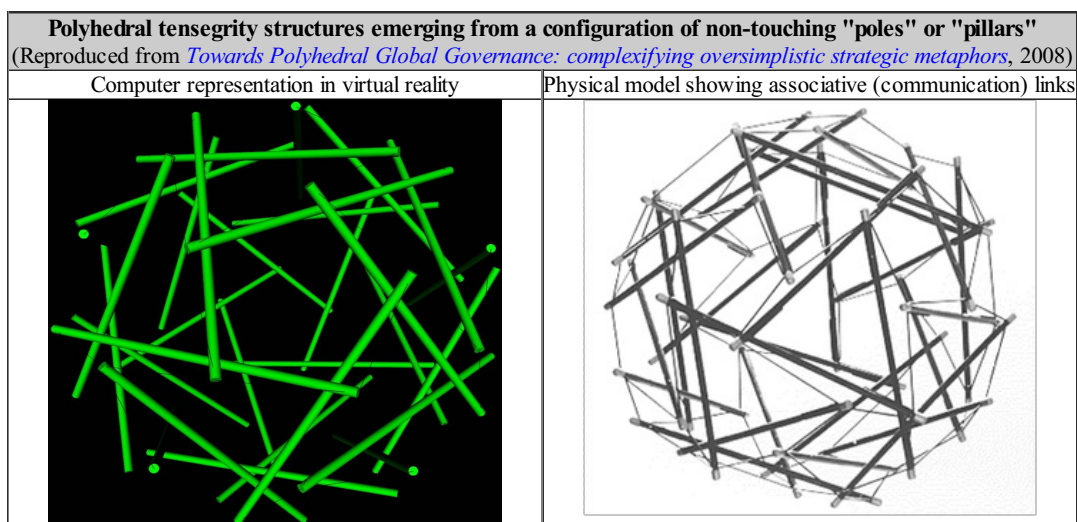
**Passing patterns in dialogue?** It is remarkable to note the extremely limited effort made to record networks of points and lines representative of any dialogue process. This is all the more astounding in the case of social media networks -- although software applications are indeed used in their analysis as a feature of surveillance by security agencies. Far greater effort is commonly made to record so-called **passing patterns** in ball sports, as a basis for improvement of their efficacy.

Some concern for such possibility is evident in the literature relating to social network analysis, citation analysis, concept mapping, semantic mapping, and the like. It might be expected to be central to **argument mapping**, but this possibility itself seldom figures with respect to discourse of any critical or strategic significance (Charles R. Twardy, *Argument Maps Improve Critical Thinking, Teaching Philosophy*, 2004). Where are the argument maps relating to climate change, the Middle East, terrorism, and the like? The results of one illustrative exercise are presented separately (*Mapping the Network of Terror*, 2002).

**Configuring patterns of dialogue:** The concern here with regard to discourse is the possibility of configuring networks of discourse, as might be suggested by the configuration of parties engaged in it (*Polyhedral Empowerment of Networks through Symmetry: psycho-social implications for organization and global governance*, 2008). This requires consideration of the presence of disagreement, as implied by the polarization of values (*Using Disagreements for Superordinate Frame Configuration*, 1992).

**Mapping value polarities as points, lines or otherwise:** The geometry indicated and depicted above suggests various ways of understanding how value polarities active in a particular form of discourse might be imaginatively represented:

- value polarities as points in a polyhedron: This has the disadvantage of obscuring recognition of the incompatibility between the values held by the polarity through reducing the polarity to a point -- conflating values otherwise held to be incompatible. It might possibly be useful for a more abstract analysis, treating such polarities as data points.
- value polarities as lines in a polyhedron: Through associating a line with the implied "pole" of the polarity, this enables ways of configuring poles to be envisaged -- recalling a range of possibilities from architecture, as indicated in the images below of tensegrity structures (*From Networking to Tensegrity Organization*, 1984). Such use may fruitfully recall the contrasting axes of bias in dialogue, as indicated above. The disadvantage is that the opposition between the ends of the pole is then only implicit in the structural stress, typically only readily recognized in the use of poles in architecture. It implies a degree of continuity which may well be completely incompatible with the opposition recognized between the values in dialogue (as associated with the ends of the pole). A related approach was used in an effort to map the strategic dilemmas in debate at the 1992 **UN Earth Summit** (*Configuring Globally and Contending Locally: shaping the global network of local bargains by decoding and mapping Earth Summit inter-sectoral issues*, 1992).
- value polarities as implied by the relationship between a polyhedron and its dual: This has the considerable advantage of emphasizing the fundamental incompatibility between the modes so mapped. A sense of non sequitur and irrationality is then associated with the absence of structure "passing through" the centre of the configuration.

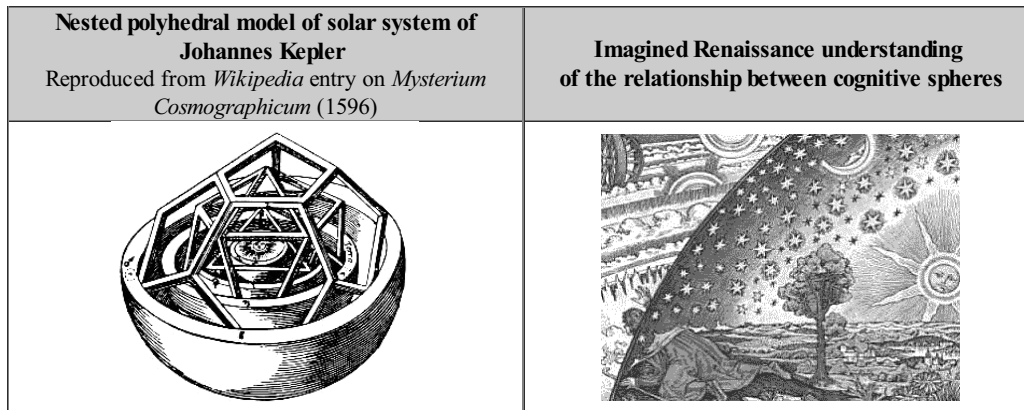


There is some considerable irony to the representations above in that they are suggestive of the fundamental incompatibility in polarized discourse that is represented metaphorically by a missile and its trajectory from one party in a "global conversation" to another. The metaphor can be extended to missives dispatched around the globe in what may well be a parody of global integration (*Missiles, Missives, Missions and Memetic Warfare: navigation of strategic interfaces in multidimensional knowledge space*, 2001; *Enhancing Sustainable Development Strategies through Avoidance of Military Metaphors*, 1998). The point is made otherwise through the emphasis on use of "bullet points" in elaborating strategic arguments and proposals.

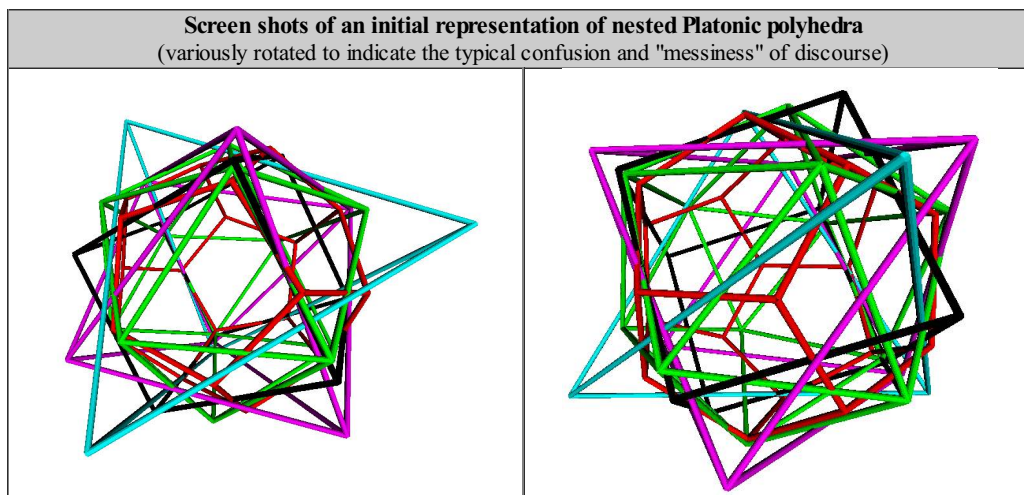
## Nesting polyhedra to enable comparison of patterns of discourse

**Classical representations:** There is a curious irony to the potential significance of the image of Johannes Kepler from his *Mysterium Cosmographicum* (1596), reproduced on the left below. The book is a work of astronomy and cosmological theory, based on the Copernican system, in which the five Pythagorean regular polyhedra dictate the structure of the universe -- purportedly reflecting God's plan through geometry. The image is widely reproduced, as with that on the right below from the same period, notably with respect to speculation regarding the *Musica Universalis* (Music of the Spheres).

The potential significance of Kepler's image for patterns of dialogue follows from the work of the Renaissance author *Marsilio Ficino* (*De Vita Coelitus Comparanda*) as variously explored (Thomas Moore, *The Planets Within: the astrological psychology of Marsilio Ficino*, 1990; Vernon Wells. *Tempering Heaven: a commentary on the first chapter of Marsilio Ficino's De vita coelitus comparanda*, 2010). The nature of the internal mirroring implied by the understanding of Ficino is evident in the works of recent authors (Joseph Campbell, *The Inner Reaches of Outer Space: metaphor as myth and as religion*, 1986; Henryk Skolimowski, *The Participatory Mind: a new theory of knowledge and of the universe*, 1994; Carl Jung and Wolfgang Pauli, *The Interpretation of Nature and the Psyche*, 2012), as discussed separately (*Composing the Present Moment celebrating the insights of Marsilio Ficino interpreted by Thomas Moore*, 2001).



**Possibility of dynamic variants in virtual reality:** The argument above suggests that there is a case for exploring whether such nesting provides an imaginative language through which to explore the dynamics of value polarities in discourse. Whilst Kepler's image is complex and is **static** in its emphasis, visualization technology now allows new **dynamic** and interactive variations of it to be reproduced to facilitate integrative comprehension of patterns of dialogue. It should be noted that any web search for images relating to "nested polyhedra" offers many striking images indicative of imaginative possibilities. Most appear to be static, whereas those below are constructed using virtual reality techniques -- especially appropriate to the argument.



**Technical note on virtual reality applications on the web**

The above images, and those which follow, have been constructed by software configuration of the five Platonic polyhedra using coordinates from the *Virtual Polyhedra: The Encyclopedia of Polyhedra* of George W. Hart. After formatting in a separate program, these were then pasted as text from a into the *X3D-Edit Authoring Tool for Extensible 3D Applications*, further modified, and then exported from it as *virtual reality VRML97 files* -- of which versions are accessible below. With skill, this process could undoubtedly have been undertaken with greater coding efficacy avoiding redundancies. Whilst polyhedra can be readily represented by lines and coloured faces, a particular challenge lies in their VRML representation with transparent faces using cylindrical edges.

Whilst virtual reality standards have long existed, a major issue is the compatibility with various standard browsers, platforms and plugins. Hence the use here of the VRML97 "legacy" standard which enables viewing and manipulation with the freely downloadable *Cortona3d Viewer* browser plugin. Also useful is the *H3DViewer* -- which tends to be more tolerant of file standards. [see also *How to Display Virtual Reality Files*]

A considerable advantage of VRML files is that the configurations (colours, etc) can be easily modified using any text editor -- without requiring any recompilation. With greater skill, many such modifications (especially animations) could be incorporated directly into more sophisticated virtual reality representations to enable user interactivity (but potentially with further potential constraints on browser/plugin compatibility). The *X3D* standard

(used by the above-mentioned editing software) is intended to replace the legacy VRML standard. It offers a greater range of facilities, but for which viewer/platform compatibility remains an issue.

Extensible 3D (X3D) Graphics is the newer royalty-free open standard for authoring, publishing, viewing and archiving interactive 3D models on the Web. Numerous [resources are available](#) to support both X3D Graphics and its compatible predecessor, the Virtual Reality Modeling Language (VRML).

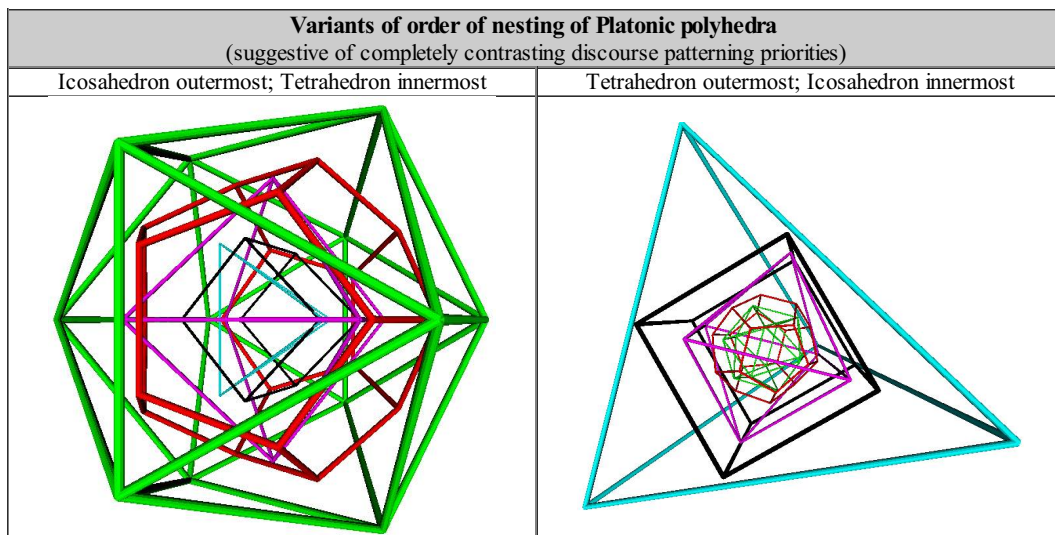
**Indicative modifications to images:** Relevant modifications indicative of contrasting **static patterns of discourse**, could include:

- changing distinctive **colours** of polyhedra: according to user preference or the significance of elements of the discourse, as suggested by contrasting colour coding
- changing relative **size** of polyhedra: possibly according to the frequency of a particular mode of discourse. The tetrahedral pattern could be rendered dominant or effectively repressed, for example. Of particular interest are conditions of discourse in which the tetrahedral pattern "contains" the others, as being the most external. The contrast is one in which the dodecahedral pattern is effectively repressed to invisibility.
- changing relative **edge thickness** of polyhedra:
- changing relative **positions** of polyhedra: possibly to emphasize the eccentric nature of particular modes relative to any assumption of a common centre for all. Some could be centred in a manner distant from any such. Doing this for all of them might indicate situations in which none of the polyhedra shared a common centre
- changing relative **orientations** of polyhedra: possibly using the degrees of symmetry between them to emphasize "openings" from one level (shell) to another
- inclusion of the **dual**, as indicative of a particular degree of incompatibility
- inclusion of **circumspheres**, indicative of globality -- possibly obscuring inner shells
- **combinations** of any of the above (all of which can be accomplished by relatively simple editing of the WRL file using a text editor)

Relevant modifications indicative of contrasting **dynamic patterns of discourse**, could include:

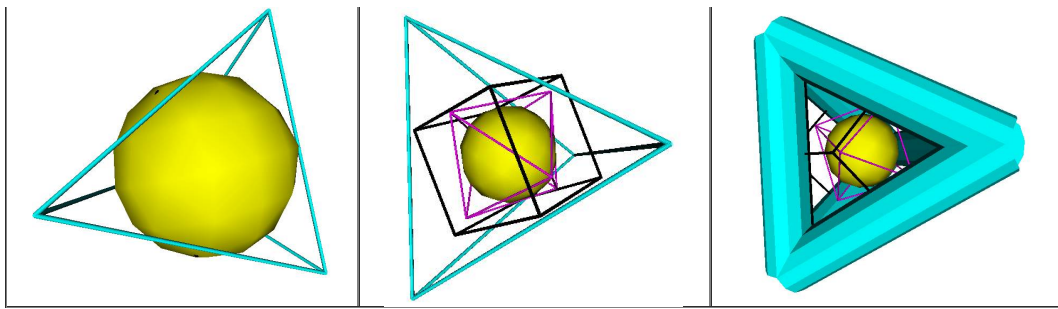
- ensuring **cycling of changes** (above) through a succession of static patterns (changing colour, size, edge thickness, position)
- **rotation** of one or more polyhedra relative to their own centre or to any common centre
- **dual morphing** (as shown in animations above), especially in the case of the tetrahedral pattern

**Inversion of nesting order:** The image on the left below recalls the pattern of the Kepler image above. In both cases below, no attempt has been made to determine suitable size proportions or orientations -- of the polyhedra relative to one another. Both suggest the value of more aesthetic considerations. Specifically relevant is the failure to orient the cube-octahedron and dodecahedron-icosahedron in a manner consistent with the functions of these pairs as duals.



**Superficial globality through occlusion:** Incorporation of one sphere (or more) into the image is consistent with Kepler's original image (above), but also offers the possibility of perspectives consistent with that of the second classical image reproduced with it (above). Such circumspheres may of course be associated with each of the nested polyhedra (as implied in the Kepler image), namely as concentric nested circumspheres.

<b>"Globality" framed by discourse patterned by the simpler Platonic polyhedra</b> (assuming <b>total occlusion</b> of more complex patterns)		
All but the tetrahedron occluded	Dodecahedron and Icosahedron occluded	Dominant emphasis on tetrahedral pattern



The transparency of the spheres can be readily adjusted from minimal to maximal opacity. Any such changes may well occur dynamically during discourse -- reflecting any failure to take account of more complex patterns.

<b>"Globality" framed by discourse patterned by the simpler Platonic polyhedra</b> (as above, but assuming only <b>partial occlusion</b> of more complex patterns)		
All but the tetrahedron occluded	Dodecahedron and Icosahedron occluded (with inclusion of a second sphere, partially occluding all but vertices of the tetrahedron)	Dominant emphasis on tetrahedral pattern

**Ordering the nesting of polyhedra:** The Kepler image offers a classic suggestion of how the polyhedra might be ordered -- as a means of articulating "universal" insight through his cosmological model (George W. Hart, *Johannes Kepler's Polyhedra*, *Virtual Polyhedra*, 1988). Because of their contrasting symmetries, the Platonic polyhedra do not in themselves however offer a coherent pattern whereby they might be ordered and nested -- whatever this might imply in cognitive terms in relation to discourse.

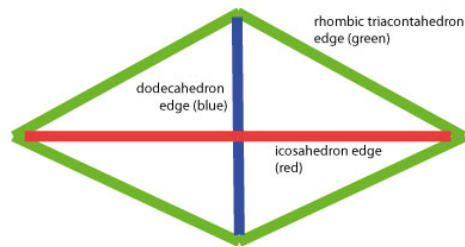
A far more coherent approach to the nesting is offered by the **rhombic triacontahedron** -- having 30 rhombic faces 60 edges and 32 vertices of two types. It is the dual of the **icosidodecahedron**, one of the Archimedean polyhedra, and is also a **zonohedron**, namely a convex polyhedron where every face is a polygon with **point symmetry** or, equivalently, symmetry under rotations through  $180^\circ$ . There is extensive commentary on the geometry of this polyhedron (*Rhombic Triacontahedron*, *Wolfram Mathworld*; Robert W. Gray, *Rhombic Triacontahedron*, *Encyclopedia of Polyhedra*, 2007; Paul Bourke, *Rhombic Triacontahedron*, 2002) As indicated by Stefan Schwarz, it consists of 30 uniform rhombi and shows the Golden Ratio in its diagonals (*Wooden Polyhedron: rhombic triacontahedron*, *VisMath*). The center of each rhombic face is the intersection point of the edges of a dodecahedron and icosahedron; the edges of the dodecahedron and icosahedron form the diagonals of the rhombic faces.

With respect to the nesting of the Platonic polyhedra, the most extensive study would appear to be that of Kenneth J. M. MacLean (*The Rhombic Triacontahedron*) -- namely an extract from his more general study (*A Geometric Analysis of the Platonic Solids and Other Semi-Regular Polyhedra*, 2007) in which reference tables are included for its construction. Unique amongst those authors with an interest in the geometry, MacLean also explores a theme of relevance to the discourse focus above (*Dialogues: Conversations with My Higher Self*, 2003).

**Virtual reality representation:** For MacLean, the rhombic triacontahedron elegantly describes the nesting of the five Platonic solids in the following order: icosahedron, dodecahedron, cube, tetrahedron, octahedron, as remarkably **illustrated** (presumably extracts from his study), most notably with an **animated gif**. As the dual of the icosidodecahedron, the rhombic triacontahedron is usefully understood as a combination of the icosahedron and the dodecahedron, demonstrating the proper relationship between the 5 nested Platonic solids. He notes that the nested solids may not only grow and contract to infinity, but do so in a perfectly harmonious way.

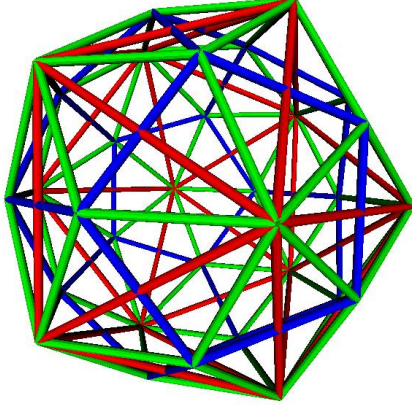
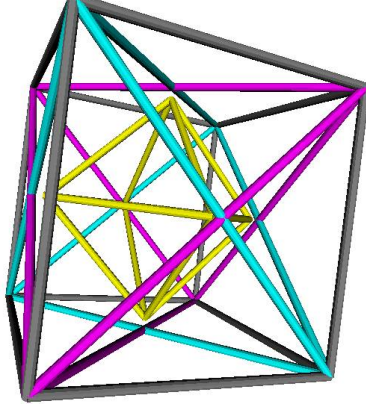
Of particular interest is the manner in which the rhombic faces (diamonds) of the rhombic triacontahedron assure a form of "reconciliation" between discourse patterned in icosahedral or dodecahedral form -- between 20-fold and 12-fold patterns. This is illustrated below in relation to the outer pattern of edges in the image on the left which follows:

**"Reconciliation" between discourse in icosahedral or dodecahedral form:--  
20-fold and 12-fold patterns**




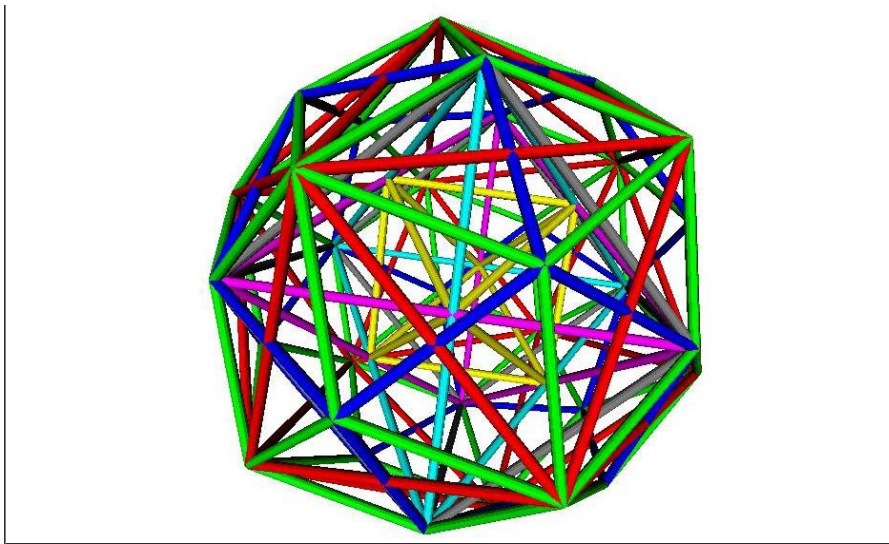
The cross-over midpoint could be understood as the intermediate position in any value polarity -- a form of "middle way", centered on each of the 30 faces of the rhombic triacontahedron. It is not a vertex on any of the three defining polyhedra indicated above. It corresponds to a vertex of the dual of the rhombic triacontahedron, namely the icosidodecahedron. Of further interest is the cybernetic work of [Stafford Beer](#) with respect to the icosahedron in its relation to discourse (*Beyond Dispute: the invention of team synergy*, 1994) leading to development of the process of [Syntegration](#)<sup>®</sup>. The schematic above raises the valuable question of how a polarized discourse can be "crossed" by another -- whether to naturalize it or to recognize and give credibility to such an intermediary position.

Clarification of the nesting of polyhedra then offers a sense of the fruitful connectivity between levels of discourse -- whatever this may imply.

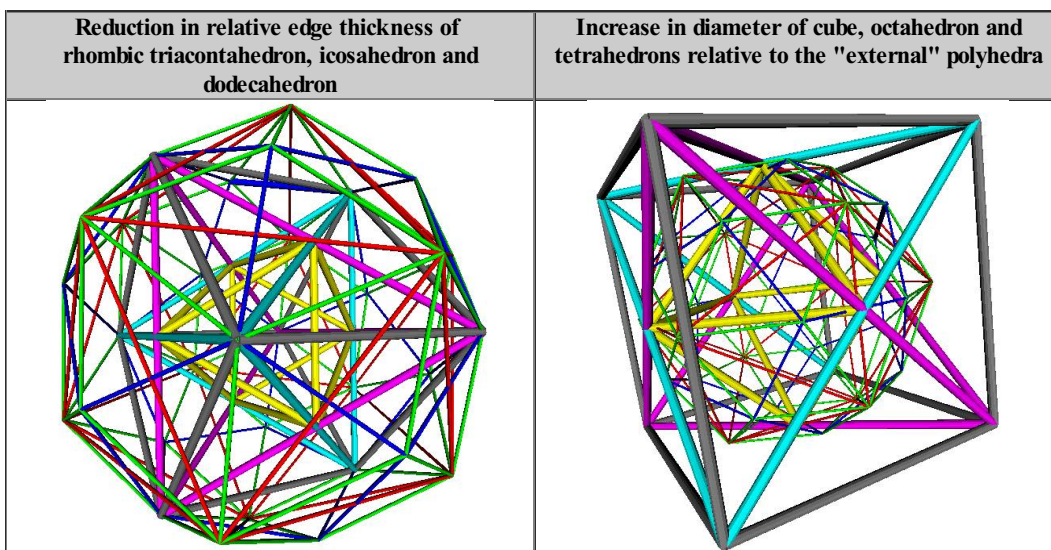
<b>Dodecahedron (blue) and Icosahedron (red) nested within Rhombic Triacontahedron (green)</b> (accessible via virtual reality viewers/browser plugins -- <a href="#">VRML97 version</a> or <a href="#">X3D version</a> )	<b>Tetrahedron (cyan) and Tetrahedron (magenta), with Octahedron (yellow) nested within Cube (grey)</b> (accessible in virtual reality viewers/browser plugins -- <a href="#">VRML97 version</a> or <a href="#">X3D version</a> )
	

By combining the two structures above, the complete nesting configuration becomes evident -- a more consistently ordered version of Kepler's original image (above). The virtual reality viewers (including browser plugins) enable rotation and zooming into the structures. Of particular interest is the view from within the image on the left above or within that below. This recalls the work of [Keith Critchlow](#) both with respect to patterns in architecture and those in flowers, following his work on polyhedra (*The Hidden Geometry of Flowers: living rhythms, form and number*, 2011; *Islamic Patterns: an analytical and cosmological approach*, 1999; *Order in Space: a design source book*, 2000). It is of some interest that the flower metaphor -- in relation to polyhedra -- can be fruitfully associated with communication processes in the rise and fall of civilizations (*Flowering of Civilization -- Deflowering of Culture: flow as a necessarily complex experiential dynamic*, 2014)

<b>Rhombic Triacontahedron (green) as a nesting framework (combining the images above)</b> with Dodecahedron (blue), Icosahedron (red), Cube (grey), Octahedron (yellow), with Tetrahedron (cyan) and Tetrahedron (magenta) (virtual reality variants <i>static</i> : <a href="#">vrml</a> or <a href="#">x3d</a> ; <i>mutual rotation</i> : <a href="#">vrml</a> or <a href="#">x3d</a> ; <i>"pumping"</i> : <a href="#">vrml</a> or <a href="#">x3d</a> ; videos: <i>"pumping"</i> <a href="#">mp4</a> ; <i>"rotation"</i> <a href="#">mp4</a> )




As indicated earlier, modifying the relative proportions of the polyhedra in the above image (as shown below) can enable greater comprehension of the pattern as a whole and of the possibilities of its distortion in practice.



With respect to the question of whether the rhombic triacontahedron as a nesting framework indicates ways of ordering the 230 value polarities in discourse, one obvious approach is to treat the edges in the structure as indicative of such polarities. The following tables suggests how the various polyhedra might then hold such a pattern.

Polyhedral characteristics				
Polyhedra	Characteristics			
	Faces	Edges	Vertices	(Total)
Tetrahedron	4	6	4	14
Cube	6	12	8	26
Octahedron	8	12	6	26
Dodecahedron	12	30	20	62
Icosahedron	20	30	12	62
Rhombic triacontahedron	30	60	32	122
Icosidodecahedron	32	60	30	122
(Total)	112	210	112	434

It is however the dynamics between the dual forms which are potentially more indicative of the challenging reality of value polarities in discourse. Exactly what "role" the icosidodecahedron might perform (as the dual of the rhombic triacontahedron) remains to be explored. It was a focus of previous mapping exercises with respect to global governance groups and strategic dilemmas (*Configuring Global Governance Groups: experimental visualization of possible integrative relationships*, 2008; *Sustainable development issues from Earth Summit (1992)*), in the latter case with an extensive [commentary](#) and detailed [net representation](#).

Intellectual copyright considerations
Especially intriguing, and of some relevance to any possibility of global discourse, is the role of intellectual copyright in the depiction and mapping considered here. There is an irony to the fact that the "points" associated with indication of the globality of discourse are represented by coordinates to be found in documents subject to the intellectual copyright required by the polyhedral mappings. There is clearly a degree of tolerance to the wider use of such coordinates -- as with the points made in any global discourse, typically in documents subject to copyright

restrictions.

There is a further irony to the fact that any question of copyright could be avoided by multiplying all such coordinates by a factor (say 1.1 or 0.9) since the resulting configurations can be readily rescaled. The argument remains that the globality of discourse is effectively constrained by copyright control of coordinates -- as might be compared with the latitude and longitude coordinates of a city on a global map, now understood to be in the public domain.

Potentially intellectual copyright also constrains the manner in which polyhedral configurations can be freely inspected and manipulated on the web. With some exceptions, this is evident in the case of proprietary virtual reality viewers. Fortunately browser plugins are typically freely downloadable, unless for non-commercial use.

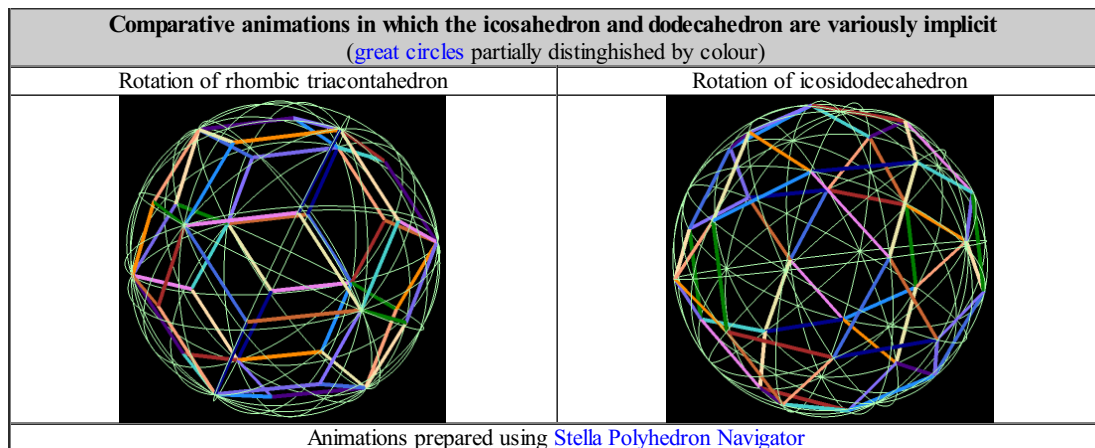
The issue extends to any generated mapping, especially when generated through proprietary software. Even when created through open-source software, the resulting mappings of significance to global discourse can be subject to intellectual copyright when disseminated over the web. Of related interest is the manner in which any communication process enabled by such mapping may itself be subject to intellectual copyright, as in the case of the [Syntegration](#)<sup>®</sup> process resulting from the work on the icosahedron of Stafford Beer (as indicated above).

In the light of such concerns, it is considered appropriate to enable the images and animations presented here to be disseminated in terms of a [Creative Commons Licence](#) -- in order to facilitate exploration of possibilities of global discourse and dialogue of global significance.

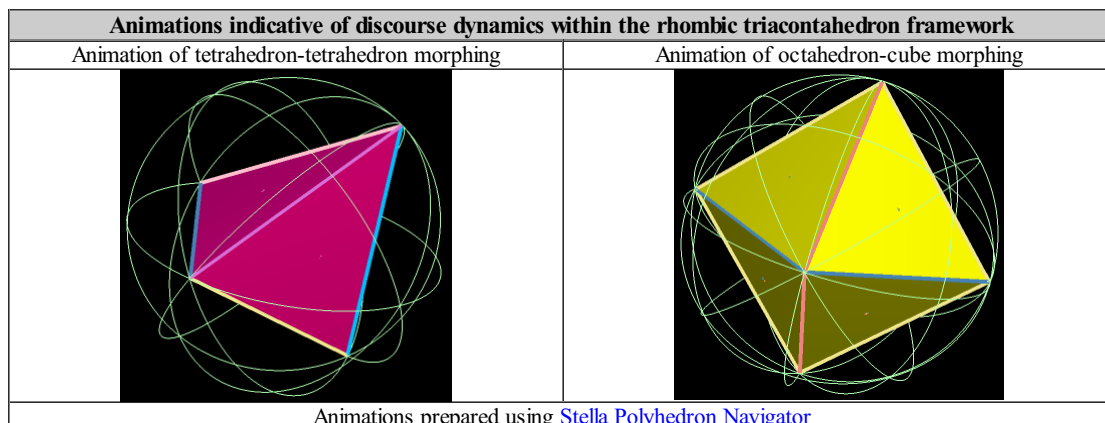
## Dynamic patterning of discourse by nested polyhedra?

The presentation above of an interlocking pattern of nested polyhedra obscures the sense in which -- in terms of discourse -- **the pattern is fundamentally dynamic rather than static**. It is effectively generated by particular mutually sustaining forms of discourse of which each polyhedron is indicative. It is then better understood as a potentially emergent pattern. In total contrast to the static structures depicted above, they are effectively to be recognized as a form of [standing wave](#). Whether and how any such pattern emerges is another matter.

The "external" framework of the nested polyhedra can be recognized to some degree through the animations below -- suggestive of some understanding of a sustaining pattern of global discourse.



The dynamics of morphing between duals was depicted above. The following animations are indicative of the "internal" dynamics at the core of the rhombic triacontahedron framework. The self-duality of the tetrahedron is potentially of the greatest significance to understanding of this dynamic since a single tetrahedron would otherwise be inherently asymmetric -- a dynamically "unstable" -- within the configuration of nested polyhedra.



The issue to be explored (and depicted) is how these dynamics "connect" with each other, notably to engender that between dodecahedron and icosahedron within the rhombic triacontahedron-icosidodecahedron framework. The interconnectivity might be explored in terms of [interference patterns](#). The polarities in each case thus establish extreme "points" within more complex frameworks -

- thereby engendering and defining the possibility of value polarities within those contexts, effectively as "containers" for the dynamics of the simpler core patterns.

In this way the morphing (usefully recognized as the "heart beat") of the complementary tetrahedral forms establishes the points of the cube. The octahedron, framed by the cube, morphs such as to define (at its most expansive) other points within the "external" framework. This definition provides a basis for the triangulation through which the dodecahedral and icosahedral patterns are defined -- thereby defining the rhombic triacontahedral framework as global container.

This "beating heart" of global discourse could best be illustrated in virtual reality -- especially one enabling user intervention to experiment with changes in the rates of morphing and to harmonise the rates of different pairs.

## Second experimental iteration of value polarities?

As noted above, the influences on possible comprehension of a desirable ordering of value polarities merit further consideration in anticipation of any further iterations in their ordering -- tabular or otherwise.

As stressed, the question is how the imagination is engaged, through imagery and metaphor, to recognize patterns of discourse. Clearly there is every possibility of enabling this to a greater degree with interactive computer applications of which virtual reality offers but one example. With an emphasis on non-closure, a process is required which bears some resemblance to engagement with Rubik's Cube.

Metaphors and distinctions were indicated above as providing clues to comprehension of "levels" or "shells" of value polarities when arranged in tabular form -- imaginable ways of thinking about them. Given the cybernetic work of Stafford Beer with respect to discourse framed by the icosahedron, it is especially interesting to consider the recent work of [Maurice Yolles](#) and [Gerhard Fink](#) (*A General Theory of Generic Modelling and Paradigm Shifts: cybernetic orders, Kybernetes*, 2015). This could be understood as raising the question as to whether the tetrahedral dynamic could be interpreted in terms of first order cybernetics, that of the cube-octahedron with second order cybernetics, that of the dodecahedron-icosahedron with third order cybernetics, and that of the rhombic triacontahedron-icosidodecahedron with that of the fourth order.

Such distinctions are of course in complete contrast to the current prevalence of first order cybernetics in global discourse and strategic thinking -- readily to be compared with that of the Stone Age (Nick Cullather, *Bomb them Back to the Stone Age: an etymology*, *History News Network*, 10 June 2006; Sophie Jane Evans, *'Bomb them back to the stone age': Obama urged by Republicans to take decisive action against ISIS as security experts warn group will target U.S. and 'kill with abandon'*, *Mail Online*, 31 August 2014). The tendency of "them" to respond in kind is only too obvious.

## Meta-discourse possibility of nested polyhedral configurations

**Disagreement and passing patterns:** The argument here has focused on using polarization in discourse -- namely radical disagreement -- as an unexplored key to global discourse and its configuration, as noted above (*Using Disagreements for Superordinate Frame Configuration*, 1992). A nested polyhedral configuration can therefore be understood as a configuration transcending the disagreements associated with those polarizations. The possibilities associated with use of polyhedra to this end -- as offering a sense of communication "pathways" -- have previously been explored otherwise (*Polyhedral meta-patterns of relationships?* 2015; *Pathway "route maps" of potential psychosocial transformation?* 2015). With respect to global discourse, these could be understood in terms of the metaphor of "passing patterns", so intensively explored in ball sports (most notably football and basketball), as noted above..

**Triangulation:** Especially intriguing in the light of the laconic subtitle of this document -- *Cognitive challenge of dominion over all one surveys* -- is the fundamental role of [triangulation](#) in the process of "surveying". The argument indicates how the dynamics of the polyhedra establish what amounts to triangulation points on the circumsphere of the rhombic triacontahedron. The importance of this process in establishing the coherence and credibility of a survey is noted separately (*Triangulation of Incommensurable Concepts for Global Configuration*, 2011). Consistent with the preoccupation with radical disagreement, that document is an annex addressing the fundamental issue of the times (*Reframing the Dynamics of Engaging with Otherness*, 2011).

**Reframing dominion:** The interpretation of "dominion" can be readily recognized as having positive and negative connotations. Both are evident when it is understood politically (colonialism, imperialism, etc) or theologically. The ambitions of ISIS for an Islamic Caliphate resemble those of [dominion theology](#) (or dominionism), namely that Christians should work toward either a nation governed by Christians or one governed by a conservative Christian understanding of biblical law, as variously described with respect to the USA (*The Rise of the Religious Right in the Republican Party*; Sarah Posner, *The Christian right's "dominionist" strategy*, *Salon*, 21 August 2011; Daniel Burke, *5 Facts About Dominionism*, *The Huffington Post*, 9 January 2011; Bruce Wilson, *"Wage War To Restore a Christian America"*, *The Huffington Post*, 30 January 2015). If [Christian radicalism](#) is driving the Republican agenda, how is this now to be compared with [Islamic radicalism](#) to gain insight into the nature of [radicalism](#)? And why does *Wikipedia* not have an equivalent entry on Christian radicalism?

The issue is usefully clarified by an exploration of the exotic nature of the Enlightenment ([G. S. Rousseau](#) and [Roy Porter](#), *Exoticism in the Enlightenment*, 1990). The authors note in their introduction (pp 1-2):

There is a potent unifying and universalising drive in western culture's creed of *nihil humanum alienum a me puto* (I think nothing foreign to me that concerns humanity), adopted from Classicism and encoded into the theory in the writings of of Enlightenment giants... We may, however, read this drive in radically distinct ways. It can be condoned by primitivists and the pious, as a crazy lust for universal domination -- the itch to be monarch of all one surveys: everything must be subjugated, intellectually, physically, and economically, to the order of things as understood by men in Paris, London or Washington. Or we may admire it as the very essence of the odyssey of the mind -- the noble Promethean thirst for universal knowledge, the

extending of the Baconian maxim of *plus ultra* (further yet) into every field of endeavour. And we may also praise it as the paradigm of the civilising mission, the Roman's *tu regere* (thine is to rule), the white man's burden. It bespeaks an edifying faith that ultimately there is one single family of mankind which can sing in unison the message of human unity.

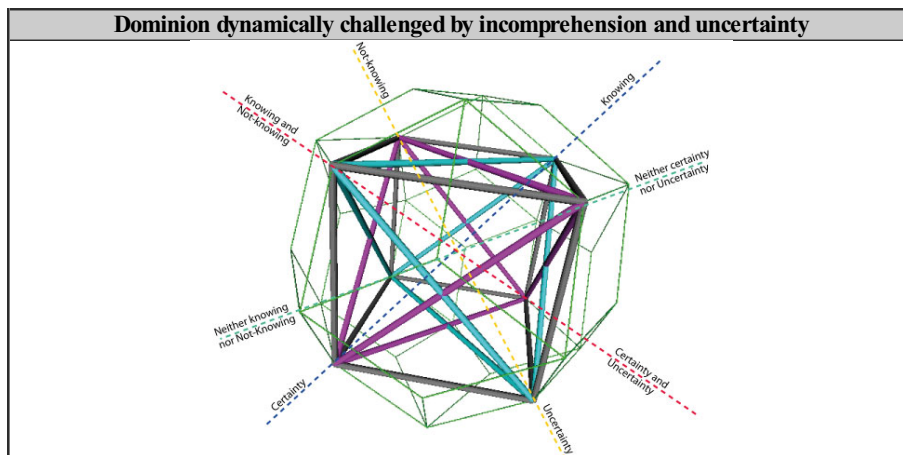
Such understandings of dominion can therefore be variously challenged. A potentially fruitful approach is through the challenge to knowing and comprehension of subjugating everything -- intellectually, physically, and economically -- to the order of things as understood by elites. This aspiration is of course evident in "full spectrum dominance" in whatever form it takes, as currently exemplified by the desperate global effort to acquire every shred of information to safeguard and extend certain vested interests. There are cognitive constraints on this endeavour, especially those of comprehension, as separately argued (*Comprehension of Numbers Challenging Global Civilization*, 2014).

**Incomprehensible dominion?** Given the sense of completeness of understanding implied by dominion, there is a case for exploring an extension or generalization of the **incompleteness theorems** elaborated by Kurt Gödel. The first could be understood to state that no consistent system of axioms is capable of proving all truths about relationships in their most abstract sense. For any such system, there will always be statements about them that are true, but that are unprovable within the system. As an extension of the first, the second incompleteness theorem shows that such a system cannot demonstrate its own consistency. The theorems could be used as a means of framing the challenges of global comprehension and understanding, namely those of knowing with certainty in a context in which much necessarily remains unknown in any aspiration to be "monarch of all one surveys". There is a continuing challenge of incompleteness and incomprehension in relation to any global overview. This can then be explored in terms of *Living with Incomprehension and Uncertainty* (2012) by **reframing the varieties of non-comprehension and misunderstanding through metaphor -- Towards the dynamic art of partial comprehension** (2012). The capacity for dominion is then to be questioned in terms of the capacity for comprehension.

There is the possibility that the associated dynamics can be fruitfully mapped into the core dynamics of the nested polyhedra in a manner consistent with the notorious strategic "poem" of Donald Rumsfeld, as US Secretary of Defense, regarding the **known knowns**:

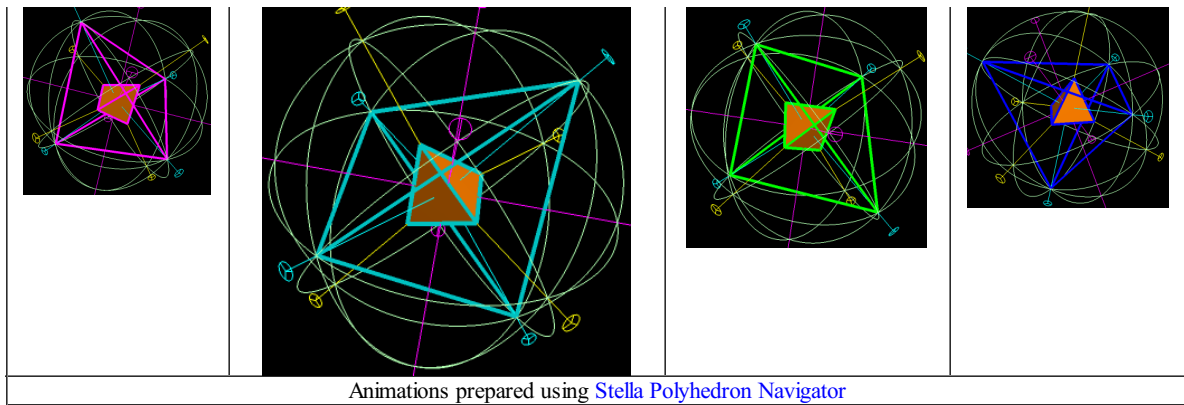
Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns -- the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones

Such considerations can be combined with the quadrilemma articulated by Kinhide Mushakoji (*Global Issues and Interparadigmatic Dialogue; essays on multipolar politics*, 1988) relating: A, B (as not-A), neither A nor not-A, and B (as not-A). Using the polyhedral framework (above), the dimensions in relation to knowing (comprehension, understanding, certainty) and to not-knowing (incomprehension, misunderstanding, uncertainty, ignorance) can be suggestively interrelated as follows.



With respect to knowing and unknowing, the dynamics between the complementary tetrahedra framed by the nesting of polyhedra can also be explored in terms of the paradoxes of relative subjectivity and objectivity with which the "monarch" is faced in "surveying" reality in any quest for its meaningful "dominion" (*âĶâĶ Defining the objective & Refining the subjective ?! Explaining reality & Embodying realization*, 2011). The quest for such comprehension continues to be framed by the Greek aphorism "know thyself" inscribed at the **Temple of Apollo at Delphi**. Inspection of the above schematic also suggests the possibility that the tetrahedral morphing may be 4-fold or 8-fold -- thus framing cognitively the "chambers of the heart" underlying the dynamics of value polarities.

Exploratory animations of tetrahedral morphing -- whether to be understood as distinctively 2-fold, 4-fold or 8-fold			



A (token) effort was made to orient the set of animations according to the axes of the image above. More effort could be usefully made to ensure that their phasing was distinctively complementary. The fundamental issue is the extent to which the axes of morphing of the two tetrahedra with their duals (across the cube) call for the recognition of 2, 4 or 8 conditions ("cognitive ventricles"). In the spirit of [flow psychology](#), what might be considered to circulate through 4 chambers? Given the heart metaphor, how are the respected flows to be distinguished? What gets transformed into what and where? Knowing to Uncertainty? Uncertainty to Knowing?

**Portals to globality:** Curiously the triangulation points recall the sense of "portals" (or "power points") -- as imaginatively explored in mythology and science fiction. The person in the classical image presented with that of Kepler above, could be interpreted as engaging with a sense of globality through such a portal. It is intriguing to note that particular significance is attached to various sets of such portals on the circumsphere of the nested polyhedra. These include the set of 8 associated with the vertices of the cube (perhaps to be compared with the Chinese understanding of *BaGua*), the set of 12 associated with the vertices of the icosahedron, the set of 20 associated with the vertices of the dodecahedron, the set of 30 associated with the vertices of the icosidodecahedron.

**Argument mapping and sonification:** It is interesting to speculate on how a configuration of nested polyhedra might be used in a high tech web environment supportive of global discourse. In contrast to the focus on "taking minutes" and "making notes", there is a case for focusing on the polarity implicit in in any line of argument -- and then to highlight that polarity visibly within the configuration. This could be done cumulatively to summarize the debate, or dynamically to record the evolution of the argument. In contrast to the the prevalent use of "bullet points". Subsequent "reporting" could either display the nested configuration with all the polarities highlighted -- perhaps further emphasizing visually the frequency with which certain polarities were implicitly evoked. Alternatively the debate could be replayed visually to show the dynamic succession of polarities evoked. In both case this would make apparent any degree of imbalance and the extent to which emergent globality was sustained. A complementary step might be to attribute distinctive signature melodies to each polarity in the configuration to benefit from the arguments for [sonification](#) -- to enable any otherwise repetitive debate to be heard otherwise. Would the configuration then constitute a form of "toneship" (*Toneship design to enable noonautics by the voices of civilization?* 2015).

**Revolution via revolution?** There is some irony to Kepler's original global configuration of polyhedra as indicative of the [heliocentric movement of the planets](#) -- their revolution in relation to the Sun, as an imaginative understanding of the dynamics of globality. With respect to the increasingly controversial cognitive and sociopolitical preoccupation with "revolution", the paradigm shifts which might be associated with continuing calls for the "will to change" and "new thinking" might better be understood in terms of "revolution" (*International Organizations and the Generation of the Will to Change: the information systems required*, 1970; Edward de Bono, *New Thinking for the New Millennium*, 1999; Richard A. Slaughter, *New Thinking for a New Millennium: the knowledge base of futures studies*, 2002).

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