



laetus in praesens

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29 July 2019 | Draft

Clarifying the Unexplored Dynamics of 12-fold Round tables

Visualization of patterns of sustainable discourse between 12 systemic archetypes

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Introduction

Round tables: system archetypes versus personality archetypes?

Visualizing a 3D round table of requisite variety

Distinguishing the three "dimensions" of a round table of "global" significance

Dynamics of a "global table" rather than a "round table"?

Indication of integrative insight engendered in a "global table"

Conceptual integration via simple polyhedra and their hemipolyhedral equivalents?

Contrasting 3-fold articulations relevant to dynamics of a "global table"

Reframing a 12-fold pattern of discourse in 3D

Global table: enabling comprehension, credibility, communicability and memorability

Emergency preparedness team design and process

References

Introduction

This exploration follows from previous concern that, despite their symbolic importance, little effort has been made to clarify the possible dynamics between people of wisdom variously configured together at an archetypal "round table". The issue is of continuing importance with respect to 12-person juries and the committees of the wise periodically convened in response to challenges of governance.

There is an unexplored enthusiasm for 12-fold sets of strategic relevance, presented separately (*Checklist of 12-fold Principles, Plans, Symbols and Concepts: web resources*. 2011). The issue is exemplified by the minimal significance attributed to the 12 stars of the [Flag of Europe](#) -- the primary unifying symbol of Europe in a period of extended strategic crisis.

Of archetypal relevance to such symbolism, the question is the nature of the dialogue "at the table" among such as:

- the 12 [Gods of Olympus](#) of Ancient Greek civilization
- the 12 [Gods of the Roman Empire](#)
- the 12 [Apostles](#) assembled at the [Last Supper](#)
- the 12 [Imams](#) as the spiritual and political successors to the Islamic prophet Muhammad in the [Twelver](#) or *Athna'ashariyyah* branch of [Shia Islam](#), including that of the [Alawite](#) and the [Alevi](#) sects.
- the 12 [Tribes of Israel](#)
- the 12 [Knights of the Round Table](#) of Arthurian legend
- the 12 [Jyotirlingas](#) (epitome of God Shiva) in Hindu Shaivism
- the 12 sons of [Odin](#), as the principal Norse god

Although potentially trivial, it is surprising to note the extent to which the gods of empires past are appropriated as iconic symbols of major institutions at this time, including those of the United Nations Specialized Agencies, corporations, and the military. Significant is then the fact that the relationships between those deities does not appear to have fruitfully informed the patterns of communications between those bodies of relevance to governance. Indeed, other than recognizing any "intercourse", the pattern of such divine relationships is not explored, beyond being enshrined in myth studied by disciplines with little interest in governance. Curiously the relationships between the other archetypes above is similarly not explored, despite the symbolic importance which may be accorded to them individually, as with the 12 Apostles, notably appropriated individually by religious institutions..

In this light, previous inquiry has focused on themes evident from the following titles:

- *Eliciting a 12-fold Pattern of Generic Operational Insights: recognition of memory constraints on collective strategic comprehension* (2011)
- *Topological Clues to a Memorable 12-fold Systemic Pattern* (2011)

- *Enabling a 12-fold Pattern of Systemic Dialogue for Governance* (2011)
- *Implication of the 12 Knights in any Strategic Round Table* (2014)
- *Generic Reframing of the 12 Tribes of "Israel"* (2009)
- *12-fold Modalities for "heavy duty" global governance?* (2008)
- *Planetary Challenge of 12-fold Strategic Marriage* (2003).

Most recently the question has been explored within the context of *Time for Provocative Mnemonic Aids to Systemic Connectivity?* (2018). The challenge is seen as fundamental to more fruitful discourse with respect to international governance (*Experimental Visualization of Dynamics of the European Parliament in 3D*, 2019).

The following is effectively introduced by an earlier exploration (with animations) into the challenge of the comprehension of complexity for governance, as suggested by an alternative non-planar configuration of the **complex plane** (*Comprehension of Requisite Variety via Rotation of the Complex Plane: mutually orthogonal renderings of the Mandelbrot set framing an eightfold way*, 2019).

In what follows, any 12-fold archetypal round-table is assumed to be indicative of a single complex plane, whatever reservations may be framed with regard to that approximation. However, **rather than understanding the round-table as simply flat (as is the convention), the exploration here configures two other "tables" as complements to the first.** This follows from the rotation and mutually orthogonal configuration of the complex plane, as previously explored with respect to renderings of the **Mandelbrot set**. Rather than being static (as is the convention), **the three "tables" are then understood as rotating with respect to each other** to honour and reflect the potential complexity of that dynamic. The insights from the Mandelbrot set of wider relevance were explored previously (*Psycho-social Significance of the Mandelbrot Set a sustainable boundary between chaos and order*. 2005) as part of an inquiry into *Sustainability through the Dynamics of Strategic Dilemmas -- in the light of the coherence and visual form of the Mandelbrot set* (2005).

The emphasis here is on how such configurations might be visualized and animated in 3D. Use of virtual reality animations is understood as framing the possibility of imaginative discussion of the dynamics of the potentially unrecognized patterns of discourse "at the table". The approach is therefore a challenge to any assumption that emergence of consensus, within a context of requisite variety, can be adequately enabled, comprehended and communicated in 2D -- as is currently the case.

Round tables: system archetypes versus personality archetypes?

In noting the lack of systemic insight into the interrelationship within each of the 12-fold sets of symbolic archetypes cited above, a preliminary comment is appropriate on the two distinctive approaches to the integrative insight they imply.

System archetypes: There is a very extensive literature from a systems perspective which has engendered insight into archetypal functions of a particular kind. *Wikipedia* offers a very extensive *List of types of system theory*. This also refers to many entries on "closely related subjects", "systems related topics", and "other systems listings". Many of those insights are specifically cited in a remarkably extensive review by Walter Lee Akers (*An Approach for the Development of Complex Systems Archetypes*, 2015). Akers identifies six "archetypes" in the light of the systems literature. The sophistication of systems studies, and the "system archetypes" variously recognized, is apparent from that review and the *Wikipedia* checklists.

Inexplicably, such studies even include recognition of twelve "archetypes" -- echoing the 12-fold pattern noted above (Leyla Acaroglu, *Tools for Systems Thinkers: the 12 Recurring Systems Archetypes*, *Medium*, 29 September 2017). Why? Seemingly no approach to "systems" has been able to provide the coherence for which the times would appear to call -- or rather part of the dynamic is associated with the fact that each proposal would claim to do so in some measure, according to what is held to be relevant.

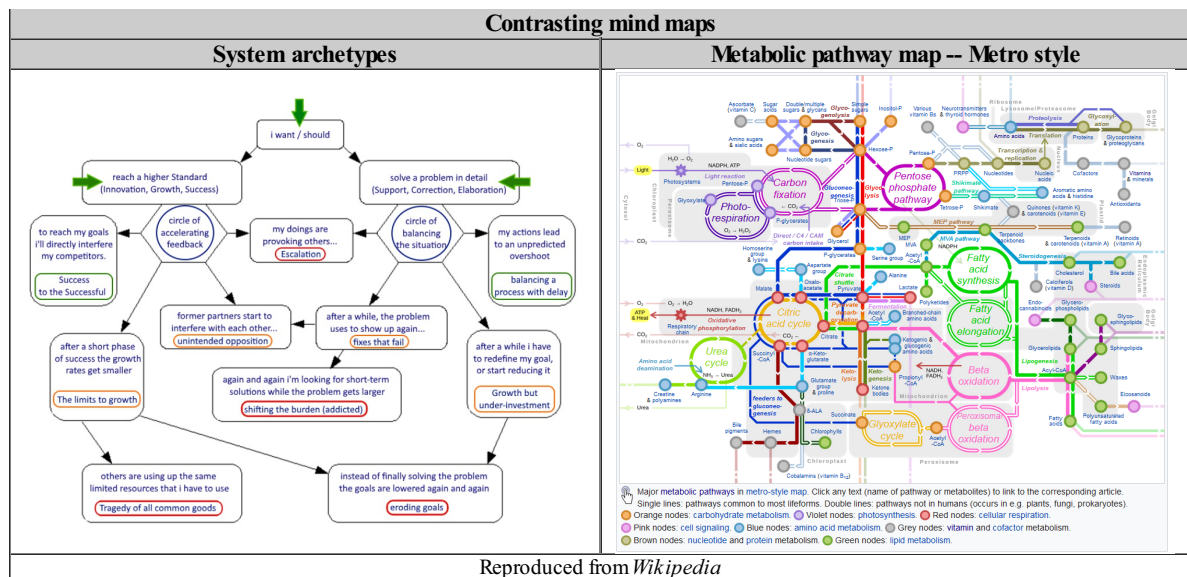
As noted by William Braun (*The System Archetypes*, 2002), there are many ways in which the archetypes can be held to interact with each other. Braun reproduces one mapping originally provided by Michael Goodman and Art Kleiner (*Using the Archetype Family Tree as a Diagnostic Tool*, *The Systems Thinker*, 1993/1994). The work was subsequently republished by Peter Senge (*Fifth Discipline Fieldbook: strategies and tools for building a learning organization*, 1994).

However there appears to be a fundamental cognitive "disconnect" from the general capacity to comprehend their implications -- contrasting strangely and unfortunately with the (intuitive) appeal -- even over centuries -- of those named above, and the cited tendency to articulate 12-fold sets of concepts, principles and strategies. It is only too evident that despite such systemic insights, it has not proved possible to render them widely comprehensible and credible, nor to bring them to bear on the challenges of global governance. Curiously the systems approach is fundamentally handicapped in addressing disagreement, whether between the archetypes or between the advocates of particular patterns of archetypes.

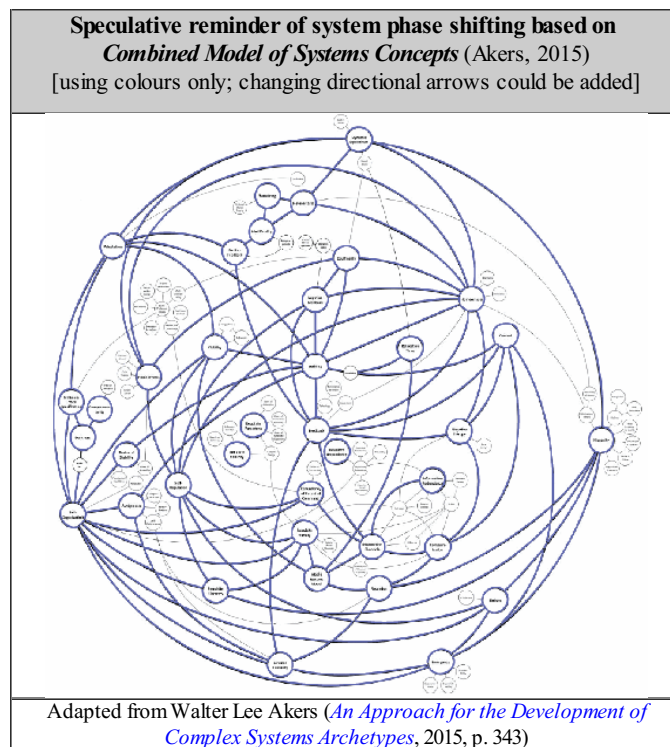
In his review Akers usefully presents numerous systems diagrams proposed in the literature. Arguably, is there is a case for a 12-fold set of system approaches from a "meta-systems" perspective? Through the manner of their depiction these recall the electronic wiring diagrams on circuit boards. The issue which is not addressed is for whom are such diagrams meaningful and who has the inclination to develop the skill to read them? Whilst such diagrams may translate into the skill set of systems engineers, they are not renowned for being meaningful in policy environments.

To clarify the challenge, the diagram from the *Wikipedia* entry on **systems archetypes** is reproduced below, together with that on **metabolic pathways**. namely the linked series of chemical reactions occurring within the cells of every human body. The latter would imply some level of intuitive understanding of systems operation possessed by everyone. However any appeal to intuitive understanding of systems could also be claimed for the 17 UN **Sustainable Development Goals** and its predecessor the 8 **Millennium Development Goals**. Neither of these appears to have been clarified in systemic terms, despite the convocation of round tables to manage them -- and the manner in which they strangely echo the functions of a secular pantheon.





The original version of the metabolic pathway map (above right) is interactive, as indicated in the note. The *Combined Model of Systems Concepts* usefully provided by Walter Lee Akers (2015) is necessarily static when clues to its dynamic nature are especially desirable. Based on that model (for purposes of illustration), the following overly simplistic animation uses colour as a reminder of such dynamics and the challenges of comprehending a system of archetypes -- equally true of a pantheon or of a complex set of goals (such as the UN's Sustainable Development Goals).



This is a reminder of the complexity which is desirable to embody in a sustainable "global table" of discourse -- or in a set of interlocking roundtables, however that "interlocking" is to be rendered systemically meaningful (*Spherical Configuration of Interlocking Roundtables: Internet enhancement of global self-organization through patterns of dialogue*, 1998; *Interweaving Thematic Threads and Learning Pathways*, 2010).

Personality archetypes: There is a quite distinct literature on [personality types](#) and archetypes. This helps to recall the fact that whilst the deities cited in the pantheons are believed to have systemic functions, they were also described as personalities.

There is a long history of insights into personality archetypes, and -- as for systems archetypes -- with many extant systems (*Table of similar systems of comparison of temperaments*, Wikipedia). It was a particular focus of [Carl Jung](#) who can be understood to have identified 4, 8 or 12 (*Psychological Types*, 1921). These can even be presented in "round table" form distinguished by colours, as by [Conor Neill](#) (*Understanding Personality: the 12 Jungian Archetypes*, 21 April 2018). That of the 12-fold [zodiac](#) of astrology, widely recognized across cultures, exemplifies this mode of understanding -- typically deprecated from a systems science perspective. Some systems are articulated into a pattern of 16 types (*Sixteen Personality Factor Questionnaire*; *Myers-Briggs Type Indicator*). A complex variety of types are measured by the *Minnesota Multiphasic Personality Inventory*.

Behavioural dimensions? It is somewhat ironic to note that the competitive behaviour of the advocates of particular systems is a factor

which is not adequately encompassed by those articulations -- as is the case with both systems archetypes and personality archetypes. Each articulation calls inexplicably for unquestionable "buy-in" as a guarantor of its credibility. There is little understanding in practice of the distinctive kinds of roles that merit representation in fruitful dialogue at a "round table". One pointer in that direction, itself subject to that reservation, is offered by the 6-fold articulations of [Edward de Bono](#) (*Six Thinking Hats*, 1985; *Six Action Shoes*, 1991; *Six Value Medals*, 2005; *Six Frames For Thinking About Information*, 2008). As [Akers](#) (2015) notes in concluding his review, there is a need to develop a "metaphorical model":

While the structure and layout of the system archetypes provides an ordered examination of the behavior of systems as they progress through various responses to variety, it does not currently have a good metaphorical representation. The *Six Thinking Hats* metaphor espoused by de Bono (1985) is an example of one such approach. In it, the color of each hat is linked to a specific way of thinking or perspective. (pp. 132-3)

It is equally evident that the approaches of the non-system sciences sensitive to sets of archetypes have been unable to render particularly relevant their insights -- as exemplified by the case of Carl Jung's 4, 8, 12 personality archetypes.

"Interdisciplinarity"? How, asks [Russell Ackoff](#) (*Systems, organizations, and interdisciplinary research*, *General Systems Yearbook*, 5, 1960), is a practitioner of any one discipline to know in a particular case whether another discipline is better equipped to handle the problem? It would be rare indeed if a representative of one of the many disciplines in some way related to the problem in question did not feel that his particular approach to that problem would be very fruitful, if not the most fruitful. This tendency is also institutionalized, as noted by [Hasan Ozbekhan](#) (1969):

This almost subconsciously motivated attempt, that of a sector to expand over the whole space of the system in its own particular terms and in accordance with its own particular outlooks and traditions, compounds the problem by further fragmenting the wholeness of the system. For sectors cannot become systems, they can only dominate them; and when they do they warp them.

On the same point, Ackoff notes (1960):

...few of the problems that arise can adequately be handled within any one discipline. Such systems are not fundamentally mechanical, chemical, biological, psychological, social, economic, political, or ethical. These are merely different ways of looking at such systems. Complete understanding of such systems requires an integration of these perspectives. By integration I do not mean a synthesis of results obtained by independently conducted undisciplinary studies, but rather results obtained from studies in the process of which disciplinary perspectives have been synthesized. The integration must come during, not after, the performance of the research.

As with philosophy in particular, it is curious that disciplines in general have been content to ignore the mutual incomprehensibility of modes of knowing alternative to that which they individually advocate ([Nicholas Rescher](#), *The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985). The various forms of interdisciplinarity and transdisciplinarity have proved to be of little significance to the experience of incomprehension of those obliged to wander the streets between the [ivory towers](#) and [information silos](#) of the disciplines.

"Global discourse"? The quarrels between advocates of any pattern of archetypes suggest that they are very much their "own metaphor", as in the argument of [Gregory Bateson](#). They would be much challenged to apply their particular archetypal insights, or to accept those of others "at the table", such as collectively to manage the discourse fruitfully. The difficulty would seem to lie in the paradox implied by the degree of closure characteristic of a discipline or model builder and the constrained ability to recognize "correspondences" with other modalities (*Theories of Correspondences -- and potential equivalences between them in correlative thinking*, 2007).

Curiously it could be argued in a binary mode that systems thinkers do not distinguish personalities -- and personality typologists have little interest in systemic patterns (other than that which they may advocate). Provocatively it could then be asked who could be asked to organize a "global table" given the unresolved relationships between archetypal insights -- whether from a systemic perspective or from a personality typology perspective. Expressed otherwise, which would be able to organize a "good party"? Who would be invited and who most definitely not -- and why? How could the conflict between "organization" and "self-organization" be resolved in order to ensure the event was sustainable?

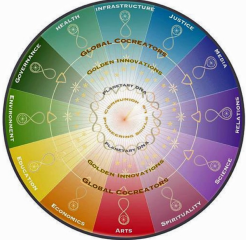
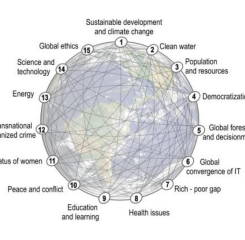
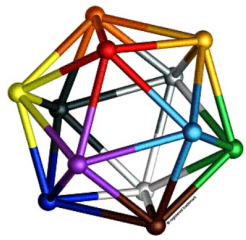

The challenge remains of enabling and comprehending fruitful discourse at a "round table" for "global governance". Is this to be imagined by the future as having been a "Last Supper" -- a final effort before the predicted collapse (*Enacting Transformative Integral Thinking through Playful Elegance: a Symposium at the End of the Universe?* 2010).

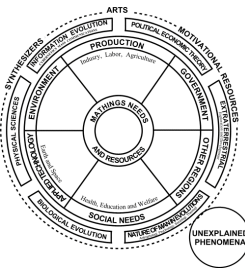
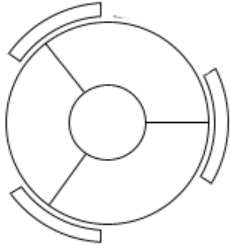
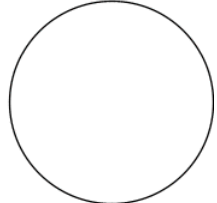
Of historical relevance to enhancement of global discourse have been:

- the initiative of [R. Buckminster Fuller](#) to organize a [World Game](#), namely an educational simulation developed in 1961 to help create solutions to overpopulation and the uneven distribution of global resources (*The World Game: integrative resource utilization planning tool*, Buckminster Fuller Institute). This has continued to be used and adapted in various forms. is played on a 70-by-35-foot [Dymaxion map](#) developed by Fuller based on the 16-faced icosahedron folding into a sphere
- the effort by [Barbara Marx Hubbard](#), co-founder of the World Future Society and the [Committee for the Future](#), to engender a [Synergistic Convergence](#) (SYNCON) process in the the 1970s, which used the following 12-fold organizing template over many

years -- with the sectors changed according to the purpose and community in which the process took place. The process was reprised globally via the internet in March 2019 by the [Evolutionary Ambassador Academy](#).

- the [Syntegration process](#) developed using a 12-vertex icosahedral configuration on the basis of the cybernetic insights of [Stafford Beer](#) (*Beyond Dispute: the invention of team synergy*, 1994), as described by Gunter Nittbaur (*Stafford Beer's Syntegration as a Renaissance of the Ancient Greek Agora in Present-day Organizations*, *Journal of Universal Knowledge Management*, 2005)
- the [Millennium Project](#) (founded in 1996) framing a circular configuration of 15 [Global Challenges](#), as engendered by [Jerome Glenn](#), an early coordinator of the SYNCON processes and their development

SYNCON Wheel of Co-Creation	Global Challenges of Millennium Project	Icosahedron: communication structure for a Syntegration®	Dymaxion Map used in World Game process
			
Used by Barbara Marx Hubbard in SYNCON processes	Reproduced from Millennium Project	Reproduced from Syntegration®	Chris Rywalt [CC BY-SA 3.0], via Wikimedia Commons

Evolution within SYNCON process	from small groups	into composite groups	into total / plenary format
<p>The inner sections of the SYNCON Wheel (on the right) represent the different orientations or major elements of fragmented society. The outer sections represent growing potentials of civilization. People meet in groups to explore the future and then merge with other groups to build a composite future that integrates these different orientations. The process is usually on live television with computer communications to link those unable to be present..</p>			
Reproduced from Jerome C. Glenn (<i>Participatory Methods: Futures Research Methodology</i> , V3.0, The Millennium Project, 2009)			

With respect to the argument here it is appropriate to note that these various approaches cannot be said to have "taken off" to the point of providing vital templates for dialogue between stakeholders variously opposed to each others perspectives -- and strongly so. They have greater merit in situations where participants effectively contract into such processes in the light of a pre-existing consensual commitment. A magical formula for dialogue has yet to emerge to reconcile strongly opposing perspectives. Despite development of computer-enhanced groupware, the rate of innovation does not seem to correspond to the urgency of the underlying challenge, as discussed separately (*Multi-option Technical Facilitation of Public Debate: eliciting consensus nationally and internationally*, 2019).

Visualizing a 3D round table of requisite variety

As noted separately, why should a flat "round table" be considered appropriate to the challenges of global governance (*Increasing the dimensionality of the archetypal Round Table?* 2018). The following argument focuses on a third dimension only, with a fourth implied by animation.

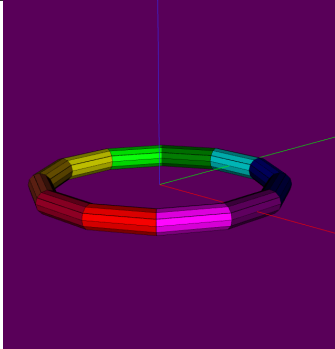
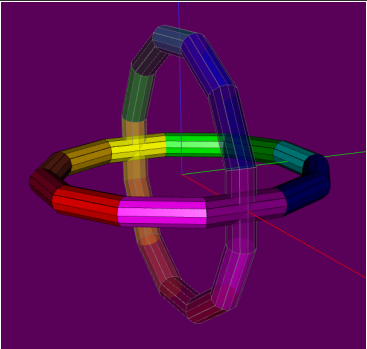
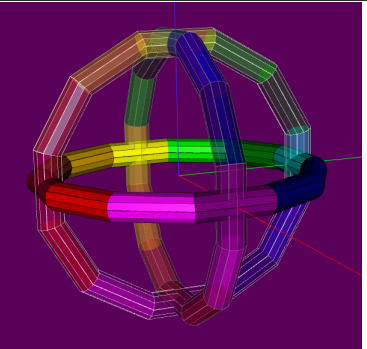
For this exercise in visualization, an adequate indication of distinctive modalities "at the table" is required. These can be understood as archetypal or systemic functions, cognitive modalities, modes of intelligence, and the like. The least controversial approach to visualizing such distinctions is through colours. Use can then be made of articulations of [12 complementary colours](#) which may well be configured as a [colour wheel](#) -- effectively a "table" in its own right. There is however the difficulty that there are various versions of such articulations -- some with more than 12 colours, and with various understandings of the complementary organization of colours around the wheel. For this purpose use was made of that in *Wikipedia*.

The question remains as to what is to be understood as "complementarity" of requisite variety at a round table -- and how it plays out in the dynamics "at the table", fruitfully or otherwise? What is the systemic significance of the discourse within any pantheon of 12 deities, among 12 disciples, or among the Knights of King Arthur -- or indeed within any modern "council of the wise"? Gatherings of the congenial, characterized by mutual appreciation, cannot be said to embody the requisite variety for which the complexity of the crisis calls. Congenial gatherings of the "self-righteous" are necessary but not sufficient, as argued separately (*Confrontation of highly "incompatible" frameworks as a vital necessity in times of chaos?* 2019).

The following screen shots are variously indicative of an archetypal round table. That on the left is of a "flat" table as typically understood, with 12 seats around it -- coloured to distinguish them. This was developed from a torus to facilitate the construction of the model. That in the centre shows the first with the addition of a second at right angles to it. That on the right shows the addition of a third

-- the three constituting a mutually orthogonal configuration -- characteristic of conventional [three-dimensional Cartesian coordinate scheme](#). A slight distinction is made from the first in that the second and the third are more transparent -- suggesting that they are less evident physically than is so readily assumed in the case of the first.

Note that the orthogonal additions are achieved by rotation of the original table, the second on the red axis, the third on the green axis.

Stages in complexification of 12-seated "flat round table" into 3 mutually orthogonal variants		
Conventional flat table (distinguished by black lines)	Addition of one orthogonal table (distinguished by high transparency)	Addition of second orthogonal table (distinguished by white lines)
		
Toroidal table prepared using Stella Polyhedron Navigator ; subsequently configured using X3D-Edit Development of some features of the model was enabled with the kind assistance of Sergey Bederov of Cortona3D		

One of the merits of using colours is that they are derived from a spectrum. It is seemingly a matter of convention how "12 complementary colours" can be usefully distinguished. However it is also the case that politics has long been assiduous in distinguishing a political spectrum with which colours are frequently associated. Arguably a fruitfully representative gathering "at the table" would require all the colours of any political spectrum to be represented. Restricting representation to only parts of the table could then be understood as both misleading and dysfunctional in systemic terms.

Distinguishing the three "dimensions" of a round table of "global" significance

The argument here is that participation at a round table obscures the subtler dimensions by which its dynamics are distinguished. They tend to be "conflated" and "confused" (if not "squashed flat") with minimal recognition of contrasting functions and dynamics, especially as cognitive modalities. Recognition may be accorded only through relatively crude reference to stakeholders, possibly expressed in symbolic terms. This compounds the difficulty of recognizing the value of what those represented tend to say to each other as representatives of a pattern of checks and balances which plays out "around the table". This could be articulated in terms of the systemic functions they represent and express. It could be articulated in archetypal psychosocial terms.

The preference here is not to suggest the possibility of definitive closure on a 3-fold "mutually orthogonal" tabular configuration of a generic 12-fold pattern. Beyond the catastrophic failure to comprehend fruitfully any binary dynamic, there is however a strong case for noting the variety of ways in which attempts have been made to indicate the nature of the threefold irrespective of whether it is controversial or mysterious. Potentially each may offer clues to the value of a threefold articulation at this time.

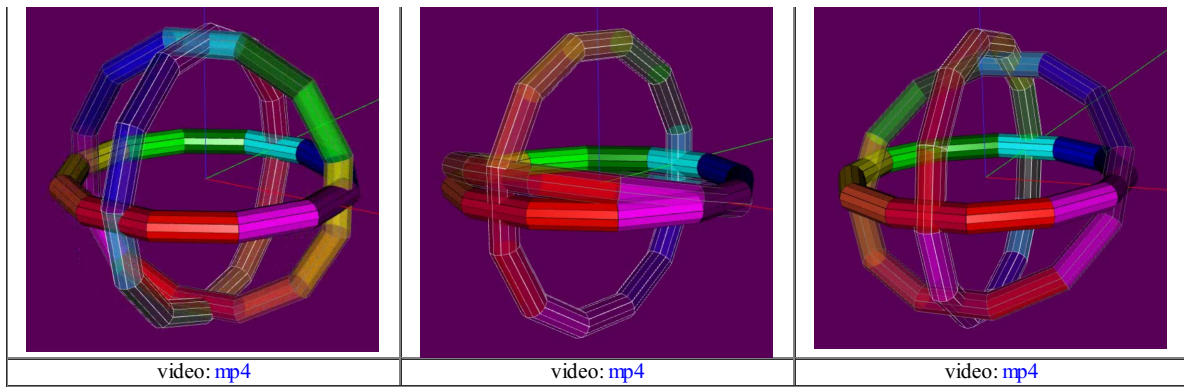
There is clearly a case for such clues as a stimulus to imagination -- in order to transcend humanity's evident inability to comprehend the twofold such as to reframe the violent conflicts to which it gives rise. There is of course considerable irony to the manner in which the binary may be celebrated and appreciated in a wide variety of games -- and in exercises in triumphal marginalization of others in order to "be great again".

It may well be the case that there are cognitive biases in favour of one or other set of clues to the threefold, each implying a degree of closure which would be experienced as alienating from another perspective. This exercise is necessarily one such.

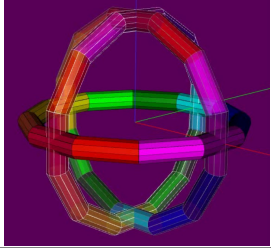
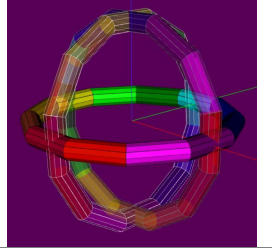
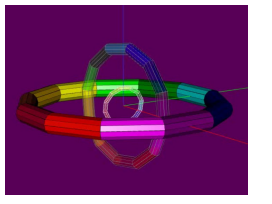
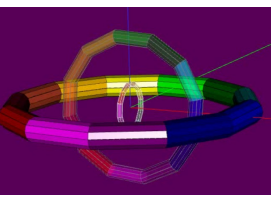
A summary of the range of clues to what might be projected onto the three mutually orthogonal "tables" is presented below. However **the focus here is on the dynamic patterns onto which relevant distinctions might be projected** -- as first presented below. As a form of [pattern language](#), the configuration is presented as a container for requisite variety -- with features onto which distinctions can be variously "mapped" (or "hung") as an aid to the imagination, and as a mnemonic aid. It is this an exercise in the design of a container for highly contrasting qualities -- if not readily understood as incommensurable.

Dynamics of a "global table" rather than a "round table"?

Screen shots indicative of subtle global dynamics with respect to a conventional round table (see videos for complete cycle in each case)		
Animation of singular rotation	Animation of singular rotation	Animation of locked double rotation

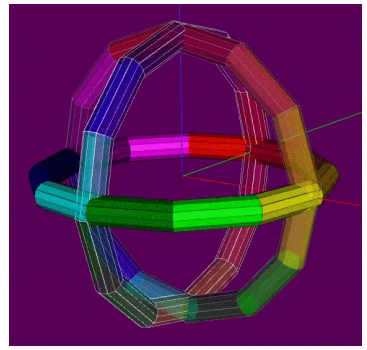
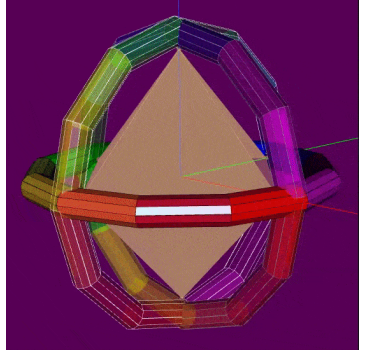
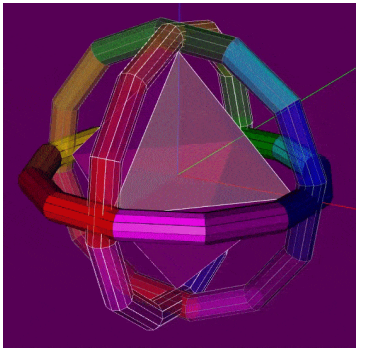


The model lends itself to representation of a variety of ways in which the three "tables" may be stationary or variously rotating (at different rates), in or out of phase with each other, or of different relative size -- as partially illustrated by the following. The radius of the toroidal "tube" could of course be increased or decreased, as can the transparency and colouring of the different tori. The three tori could indeed be rendered more strikingly different if appropriate -- as an aesthetic choice.

More complex animations indicative of subtle global dynamics with respect to a conventional round table (see videos for complete cycle in each case)			
Screen shots of multiple rotations		Screen shots indicative of relative scaling	
Animation of double rotation	Animation of multiple rotation	Relative scaling of subtle tables	Rotation locked to axes
			
video: mp4	video: mp4	video: mp4	video: mp4

Indication of integrative insight engendered in a "global table"

The configuration of mutually orthogonal "tables" is presented below with each rotation centred on a particular axis, passing through the centre of the "table". In that **below left**, nothing is presented visually as engendered by the dynamics. In the **central animation** below, it is assumed that an **octahedron** is engendered -- with colours shifting through the sequence of the animation. In the **animation on the right** it is assumed that the form engendered is a **tetrahemihexahedron** (or hemicuboctahedron) -- a form for which some faces of the octahedron are "hollowed out" (as discussed below). Both the octahedron and the tetrahemihexahedron have six vertices which are matched in each case in the animations with the junction points of any two "tables". The forms are presented in the animations with a degree of transparency to enhance aesthetic effects -- which could of course be increased or decreased.

Animations of 3-fold rotation centered on an axis and in plane of orthogonal axis (NB: Allow animations time to fully load or use videos)		
Without engendering an integrative form	Engendering an octahedral form	Engendering a tetrahemihexahedral form
		
video: mp4	video: mp4	video: mp4

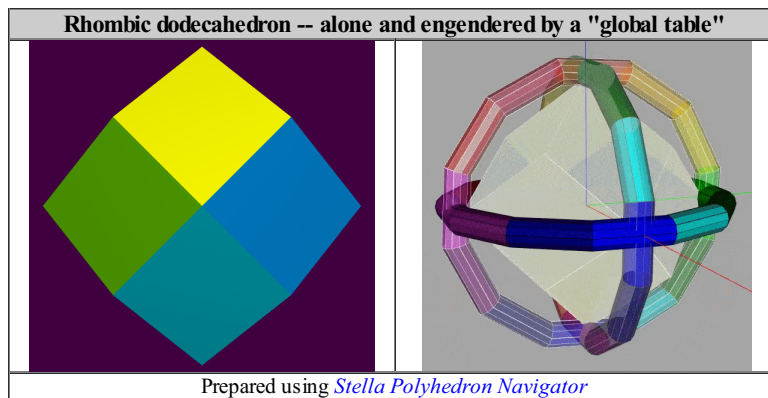
Conceptual integration via simple polyhedra and their hemipolyhedral equivalents?

The animations above point to the role of simple polyhedra as indicative of patterns of conceptual integration. That argument has been previously developed in the light of the symbolic commitment of the European Union to a set of 12 stars (consistent with the symbolism noted above), most obviously on the **Flag of Europe**. It remains unclear with what fundamental significance the set of stars is associated -- even given the possibility of "variable geometry". The only detectable significance is through the *12-Point EU Action Plan to support the Millennium Development Goals* (2010). The question of how their implied principles might be interrelated, to exemplify strategic

coherence, is explored separately (*Imagining the Flag of Europe otherwise?* 2018; *Navigating Europe's 12 "dimensional space": 12 rotating stars on icosahedron as "propellers"?* 2019).

Logical integration? As extensively discussed separately, there is continuing interest in polyhedral patterns as a means of clarifying distinctions in logic (*Neglected recognition of logical patterns -- especially of opposition*, 2017) . What could be considered amazing at this time is the manner in which this focus is restricted to an extremely limited range of polyhedra. **No questions seem to be asked as to why related polyhedra are not of significance** -- even when extensively studied by other disciplines.


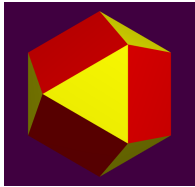
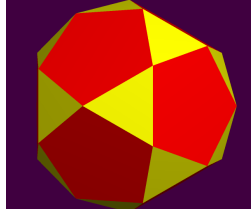
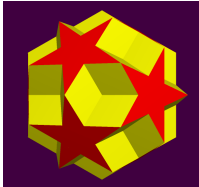
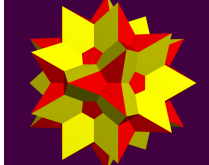
This is especially striking in the case of the **rhombic dodecahedron**, favoured as a pattern in the study of logical connectivity. This polyhedron is a geometric dual of the **cuboctahedron** whose particular characteristics with respect to transformation between polyhedral forms have been highlighted by **Buckminster Fuller** (*Synergetics: Explorations in the Geometry of Thinking*, 1975/1979) and notably proved fundamental to enabling him to design geodesic domes. Arguably it did not enable its claimed cognitive implications (*Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009). The rhombic dodecahedron has been used (as noted below) as a pattern to order Boolean connectives.

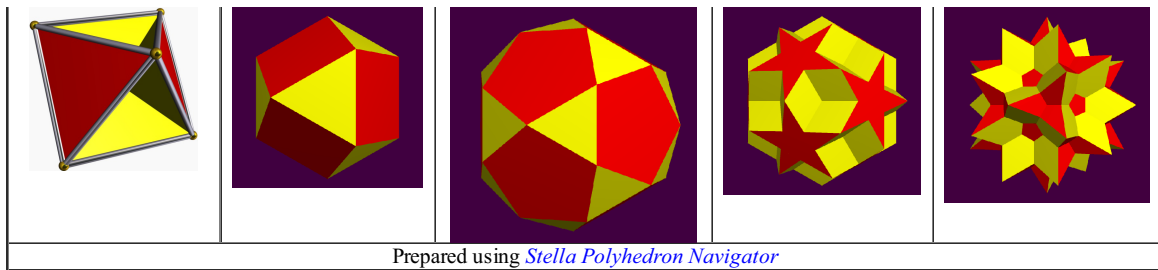


Inside/Outside? It is of further interest what the hemipolyhedral equivalents might be imagined to signify in this respect. In geometry, a **hemipolyhedron** is a **uniform star polyhedron** some of whose faces pass through its center. These "hemi" faces lie parallel to the faces of some other symmetrical polyhedron, and their count is half the number of faces of that other polyhedron -- hence the "hemi" prefix. The animations above contrast one of the simplest polyhedra, the octahedron, with its hemipolyhedral equivalent, namely the tetrahemihexahedron.

With respect to speculative reflection on the nature of "integration" as it might be valued and articulated at a "global table" -- and implied in a "round table" -- one possibility is the complementarity between an objective-extensive focus and a subjective-intensive focus. The octahedron could be indicative of the former and the tetrahemihexahedron of the latter, given the manner in which some faces are "hollowed out" in that case, even passing through the centre of the form. This could be understood as addressing the dilemma of "outside vs. inside", as it plays out in various domains, as separately discussed (*World Introversion through Paracycling: global potential for living sustainably "outside-inside"*, 2013; *Cognitive Osmosis in a Knowledge-based Civilization: interface challenge of inside-outside, insight-outsight, information-outformation*, 2017).

Of particular interest, in the light of their relation to the simpler Platonic and Archimedean polyhedra, are the following nine forms (**extensively discussed** and depicted in *Wikipedia*). In the following presentation, the normal polyhedron is presented in the row above an animation between the two alternative patterns in each case. This lends itself to interpretation of a form of inside-outside alternation -- metaphorically to be potentially understood as a kind of "cognitive breathing".

Indication of relation between selected polyhedra and their equivalent hemipolyhedra (lower row being an animation between pairs of hemipolyhedra derived from the upper row)				
Octahedron	Cuboctahedron	Icosidodecahedron	Dodecadodecahedron	Great icosidodecahedron
				
Tetrahemihexahedron	"Morphing" between Octahemioctahedron Cubohemioctahedron	"Morphing" between Small icosihemidodecahedron Small dodecahemidodecahedron	"Morphing" between Small dodecahemicosahedron Great dodecahemicosahedron	"Morphing" between Small dodecahemidodecahedron Great icosihemidodecahedron



Hyperdimensionality: Mathematics and physics have long been very comfortable with their articulations of higher dimensional significance to the appropriate understanding of reality and its representation. There is little attention to the possible need to adapt such insights to the enhancement of psychosocial understanding of the world of experience -- and its governance (*Hyperaction through Hypercomprehension and Hyperdrive: necessary complement to proliferation of hypermedia in hypersociety*, 2006; *Engaging with Hyperreality through Demonique and Angelique? Mnemonic clues to global governance from mathematical theology and hyperbolic tessellation*, 2016; *Envisaging the global dynamics of a "hyperbolic round table" through tessellation*, 2016). A related point is provocatively argued by Neel Burton (*Hypersanity: Thinking Beyond Thinking*, 2019).

An important key to the significance for governance of hyperdimensionality is the work on logical geometry, most notably the Aristotelian **square of opposition** and its relationship to the rhombic dodecahedron featuring in **Hasse diagrams** -- both involving discussion of the **hypercube** in the work of Lorenz Demey and Hans Smessaert (*The Relationship between Aristotelian and Hasse Diagrams*, 2014; *Logical and Geometrical Distance in Polyhedral Aristotelian Diagrams in Knowledge Representation, Symmetry*, 9, 2017, 204; *Geometric and Cognitive Differences between Logical Diagrams for the Boolean Algebra B_4*). Arguably if there is one characteristic of psychosocial reality which is a fundamental challenge to governance it is that of "oppositon" and the framework within which it can be appropriately integrated.

Given that the logical connectives of Boolean algebra number 16 (namely 2^4), after discarding the non-contingent (1001 and 0110), the remaining 14 (forming a pattern of contingent bitstrings) can be associated with the vertices of a rhombic dodecahedron. As indicated in the animation on the right, proximate vertices differ by a single bit in the 4-bit pattern.

16 logical connectives ordered in a Hasse diagram																																																																							
Nodes on the right are connected like the vertices of a 4 dimensional cube with light blue edges forming a rhombic dodecahedron																																																																							
Contingent bitstrings (omitting 1001 and 0110)	Showing 1001 and 0110 in green (omitted on left)	Logical formulas	Equivalent Venn diagrams																																																																				
		<table border="1"> <tr><td>A</td><td>0</td><td>1</td><td>0</td></tr> <tr><td>B</td><td>0</td><td>0</td><td>1</td></tr> </table> <table border="1"> <tr><td>false</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>$A \wedge B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \downarrow B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>$A \uparrow B \Leftrightarrow \bar{A} \wedge B \Leftrightarrow A \downarrow \bar{B} \Leftrightarrow \bar{A} \uparrow B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>B</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>$A \uparrow B \Leftrightarrow \bar{A} \downarrow B \Leftrightarrow A \wedge \bar{A} B \Leftrightarrow \bar{A} \uparrow B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>A</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>$A \oplus B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \oplus B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>$A \vee B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \vee B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>$A \downarrow B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \downarrow B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>$A \leftrightarrow B \Leftrightarrow \bar{A} \oplus B \Leftrightarrow A \oplus \bar{B} \Leftrightarrow \bar{A} \leftrightarrow B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>\bar{A}</td><td>0</td><td>1</td><td>0</td></tr> <tr><td>B</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>$A \uparrow B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \vee \bar{B} \Leftrightarrow \bar{A} \uparrow B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>$A \uparrow B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \uparrow B$</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>true</td><td>1</td><td>0</td><td>0</td></tr> </table>	A	0	1	0	B	0	0	1	false	0	0	0	$A \wedge B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \downarrow B$	0	0	0	$A \uparrow B \Leftrightarrow \bar{A} \wedge B \Leftrightarrow A \downarrow \bar{B} \Leftrightarrow \bar{A} \uparrow B$	0	0	0	B	0	0	1	$A \uparrow B \Leftrightarrow \bar{A} \downarrow B \Leftrightarrow A \wedge \bar{A} B \Leftrightarrow \bar{A} \uparrow B$	0	0	0	A	0	0	1	$A \oplus B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \oplus B$	0	0	0	$A \vee B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \vee B$	0	0	0	$A \downarrow B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \downarrow B$	0	0	0	$A \leftrightarrow B \Leftrightarrow \bar{A} \oplus B \Leftrightarrow A \oplus \bar{B} \Leftrightarrow \bar{A} \leftrightarrow B$	0	0	0	\bar{A}	0	1	0	B	0	0	1	$A \uparrow B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \vee \bar{B} \Leftrightarrow \bar{A} \uparrow B$	0	0	0	$A \uparrow B \Leftrightarrow \bar{A} \uparrow B \Leftrightarrow A \uparrow \bar{B} \Leftrightarrow \bar{A} \uparrow B$	0	0	0	true	1	0	0	
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Adapted from Lorenz Demey and Hans Smessaert (2017)	Reproduced from Wikipedia <i>Logical connectives Hasse diagram</i>																																																																						

The recent **widely appreciated** proof of the sensitivity conjecture may be especially relevant (Hao Huang, *Induced subgraphs of hypercubes and a proof of the Sensitivity Conjecture*, July 2019).

Contrasting 3-fold articulations relevant to dynamics of a "global table"

As noted above, the purpose of this presentation is to explore ways of imagining a three-dimensional "round table" in contrast to one that is "flat" in various possible senses of the term. With what each dimension might be associated is then a feature of that imaginative process. The intention is to indicate -- as clues -- some of the ways they might be distinguished. The challenge can be recognized in the case of a "global table" acknowledging three principles or values whose relationships are complex and dynamic. Immediate closure is not helpful.

The following summary is partially reproduced from an earlier presentation (*Cognitive Implications in 3D of Triadic Symbols Valued in 2D*, 2017).

Beyond the binary: Much has been made of the conflictual dynamics of binary relationships and the strategic difficulties of dilemmas. To the extent that it is claimed that the dynamics of the three-fold are comprehended, it can also be claimed that such "comprehension" is constrained in ways which render it inapplicable in practice -- where it could be said to be most needed. Examples are provided by:

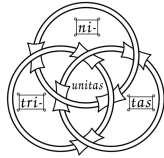
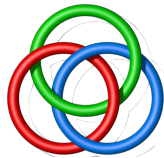
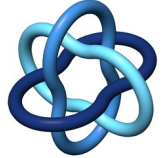
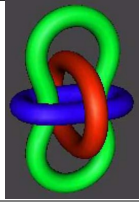
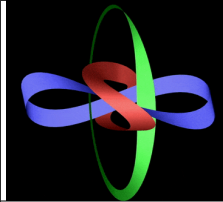
- **Three-fold patterns of divinity:** Seemingly, whatever the religion, any fundamental trinity is claimed to be comprehended by the priesthoods as explicated definitively in learned texts. Ultimately the relationship is typically held to be a "mystery" beyond ordinary

comprehension, as with the [Christian Trinity](#).

- Threefoldness has of course been cause for reflection in theology over centuries, as most clearly made and illustrated in an extensive analysis of how [Dante Alighieri](#) describes the three rings (*tre giri*) of the Holy Trinity in *Paradiso 33* of the *Divine Comedy* (Arielle Saiber and Aba Mbirika, *The Three Giri of Paradiso XXXIII, Dante Studies*, 131, 2013, pp. 237-272). That remarkable interdisciplinary exploration combines insights from speculative theology, geometry and knot theory, as discussed separately (*Engaging with Elusive Connectivity and Coherence: global comprehension as a mistaken quest for closure*, 2018).
- **Abrahamic religions:** There is clearly little comprehension of the relationship between the three primary [Abrahamic religions](#) which is of relevance to reframing fruitfully the conflicts they reinforce and in which they have engaged over centuries. These are clearly fundamental to global dynamics at this time. Islam considers any trinitarian relationship to be blasphemous. The monotheism of Judaism excludes the possibility of any trinity. However any such acknowledgement of subtlety has seemingly not informed the challenges of those religions in engaging with others.
- **Eternal triangle:** On a personal level, experience of the "[eternal triangle](#)", which is such a challenge to the binary ideal of family life, remains beyond fruitful comprehension by those involved and affected. It is typically a source of great existential suffering and tragedy.
- **"Third way":** In contrast with 2-fold polarization, a third axis could then be understood as indicative of what is variously and mysteriously indicated as a "[third way](#)" -- with which strategic initiatives have been variously associated, notably as articulated by [Anthony Giddens](#) (*The Third Way: the renewal of social democracy*, 1999; *The Third Way and its Critics*, 2000). From the perspective of the above argument, it has been unclear with what part of "strategic space" such initiatives are associated -- and how to distinguish it from other parts. Reference is also variously made to an elusive "middle way", notably the [Middle Way](#) described by Siddhartha Gautama as the path leading to liberation.
- **Analytical methods:** These offer explanatory capacity which has proven to be of limited value in reframing conflictual relationships in practice. These include:
 - **Dialectical method:** Recognized in terms of "[thesis, antithesis, synthesis](#)" as originated by [Georg Hegel](#), this ideal has proven to be of limited relevance to psycho-social domains in which "synthesis" is desperately required in practice.
 - **Semiotic triangle of meaning** of [Charles Ogden](#),
 - **Oedipus complex** as articulated in the triangulation of [Jacques Lacan](#),
 - **Phenomenological epoché** of [Francisco Varela](#)

The challenge of elusive triadic comprehension can of course be depicted in that of [Borromean rings](#) with their [Brunnian property](#) (as noted above) -- but with limited relevance to the psycho-social domain, despite its occasional use in depicting the Trinity. The nature of the challenge can be rendered more explicit through a triangular pattern basic to the mathematical argument of [q-analysis](#), as developed by Ron Atkin (*Multidimensional Man; can man live in 3-dimensional space?*, 1981). As separately summarized (*Comprehension: Social organization determined by incommunicability of insights*), Atkin illustrates the challenge of comprehension in relation to experience "within" the geometry of a triangle -- especially with regard to the perspective necessary to comprehend the geometry of the triangle as a whole -- namely the trinity.

Visual alternatives? The challenge to the imagination, illustrated by the following, was the focus of an earlier argument (*Engaging with Elusive Connectivity and Coherence: global comprehension as a mistaken quest for closure*, 2018).

Examples of 3-fold articulations of Borromean rings of relevance to coordination of political systems?				
Representation of rings interlocking according to the Borromean condition				
Early depiction of Christian Trinity	Common representation in 2D	International Mathematical Union Logo	Toroidal version	3 Möbius strips (animation)
				
Reproduced from <i>Wikipedia</i>			Reproduced from <i>Kauffman (2006)</i>	Video (mp4); Virtual reality (x3d ; wrl)

Triadic thinking? Various approaches to triadic thinking are cited (notably clustered as [Triadic Thinking](#) by Academia.edu):

- Norman D. Cook:
 - *Harmony, Perspective and Triadic Cognition* (Cambridge University Press, 2012).
 - *Triadic Insights in Astronomy, Art and Music* (2010)
- Anna Burhouse:, *Now We are Two, Going on Three: triadic thinking and its link with development in the context of young child observations* (*International Journal of Infant Observation and Its Applications*, 4, 2001, 2).
- *What is Triadic Thinking?* as articulated by [John G. Bennet](#) (*The Triad*, 1956)
- Martin Brown: *The Triadic Trap*. (18 May 2014) as author of *Civilizing the Economy: a new economics of provision* (University

of San Francisco, 2010)

- Sigmund Ongstad: *Bakhtin's Triadic Epistemology and Ideologies of Dialogism (Bakhtinian Perspectives on Language and Culture)*, 2004, pp 65-88)
- Michael Giesecke: *Triadic Thinking and Post-Typographic Epistemology* (In: Torsten Meyer, et al: *Education Within a New Medium. Knowledge Formation and Digital Infrastructure*, 2008, pp. 290-297).
- Giuseppe Naimo: *Consciousness: a triadic process* (Murdoch University, 2002)

There is extensive interest in the dynamics of the "triple bond" in molecular chemistry. That understanding has also been used to frame aesthetic forms (Joseph G. Price (Ed.), *The Triple Bond: plays, mainly Shakespearean in performance*, Pennsylvania State University Press, 1975; Wouter Davidts, *Triple Bound: Essays on Art, Architecture and the Museum*, Valiz/Antennae, 2017).

Triple helix: Given the manner in which it is constituted by three interweaving Archimedean spirals, the **triskelion** could well be understood as a form of triple helix -- as projected into 2D (as noted [separately](#)). **Double helix DNA** structures in 3D are the primary form among all life forms on this planet; **triple helix DNA** has been reported occasionally and for transient periods -- and is explored as a molecular structure. The geometry of the triple helix -- as a symbol -- is now closely associated with the triple helix approach.

As described by the Triple Helix Research Group of Stanford University, the Triple Helix thesis is that the potential for innovation and economic development in a knowledge society lies in a more prominent role for the university and in the hybridisation of elements from university, industry and government to generate new institutional and social formats for the production, transfer and application of knowledge. (*The Triple Helix Concept*; [publications](#)).

It is in this sense that the triadic thinking underlying the activities promoted by the [Triple Helix Association](#) merit particular attention, as instigated by [Henry Etzkowitz](#) (*Triple Helix: a new model of innovation*, 2005). This is suggested by a selection of its [international conference](#) themes and papers since 1996:

- [Addressing ecosystem challenges in an era of crises](#) (Heidelberg, 2016)
- [Academic-Industry-Government Triple Helix model for fast-developing countries](#) (Beijing, 2015)
- [Triple Helix as nucleus of innovation and economic growth](#) (Tomsk, 2014)
- [Triple Helix in a context of global change: continuing, mutating or unravelling?](#) (London, 2013)
- [Emerging Triple Helix models for developing countries: from conceptualization to implementation](#) (Bandung, 2012)
- [Triple Helix in the development of cities of knowledge, expanding communities and connecting regions](#) (Madrid, 2010)
- [Role of Triple Helix in the global agenda of innovation, competitiveness and sustainability](#) (Glasgow, 2009)

As an institutional member, the [World Association of Triple Helix and Future Strategy Studies](#) (WATEF) is a scholarly association that promotes evidence-based methodologies to analyse complex social interactions to understand social and technological change. Despite the manner in which a form of triadic thinking is clearly emphasized, it would seem to be the case that there is little emphasis on the cognitive dimension in contrast with that on the implementation of forms of collaboration engendering innovation. The degree of reification implied by the triple helix model contrasts with the fundamental challenge suggested by the DNA-related metaphor. This is implied to a far greater degree by the triskelion as a symbol and the paradoxical cognitive dynamics with which it has been associated over millennia. However the possibility of projecting it into 3D -- as a form of triple helix -- indeed merits further consideration.

Triangulation and navigation: Curiously, beyond the motivation attributed to each of the Abrahamic religions (despite efforts at interfaith dialogue), the triadic nature of their relationship goes systematically unexplored. There is seemingly no symbol of that relationship as a whole, irrespective of the existence of distinctive geometric symbols for each of them (*Reconciling Symbols of Islam, Judaism and Christianity: catalytic methodology for effective interfaith dialogue*, 2017).

The recourse to triangulation merits consideration of its more general implications, especially in relation to any trinity (*Triangulation of Incommensurable Concepts for Global Configuration*, 2011; *Holiness framed by a triangulated configuration of holes*, 2014). Notable is the focus of [Paris Arnopoulos](#) (*Triple Helix and Triadic Codex: braiding nature, culture and nurture*, Paper for Third Triple Helix International Conference, 2000).

The argument can be presented otherwise in terms of the necessary triangulation fundamental to the process of surveying and navigation. Such triangulation has been fundamental to navigation around the globe, as initially framed through understanding of the [Pentagramma Myrificum](#) in mathematical terms (*Global Psychosocial Implication in the Pentagramma Myrificum: clues from spherical geometry to "getting around" and circumnavigating imaginatively*, 2015).

Provocatively it could be argued that the widespread commitment to "planar thinking" through "plans" and "planning" -- typical of many round table discussions (and reinforced by that 2D surface) -- are now inadequate to the conceptual subtlety required for global navigation (*Spherical Accounting: using geometry to embody developmental integrity*, 2004; *Adhering to God's Plan in a Global Society: serious problems framed by the Pope from a transfinite perspective*, 2014).

"Plans" are more appropriate to Flat Earth assumptions -- as emphasized by [Thomas L. Friedman](#) (*The World Is Flat*, 2005; *The World Is Flat; the globalized world in the twenty-first century*, 2006) and significantly endorsed by the first [Financial Times and Goldman Sachs Business Book of the Year Award](#). Although readily assumed, the "flatness" of the Earth can be explored as inappropriate to the times (*Irresponsible Dependence on a Flat Earth Mentality -- in response to global governance challenges*, 2008). Use of the expression "global table" appropriately offers the paradox as to whether it is to be understood as "flat" or "round".

Logic: ternary and triadic: Despite the overriding emphasis on binary logic, it is appropriate to note the value attached in various contexts to a [ternary framework](#). Examples include use of a [ternary numeral system](#) (a base-3 counting system) and [ternary logic](#), namely a logic system with the values *true*, *false*, and some other value.

Considerable significance has been attached to the triadic logic of [Charles Peirce's three-fold system of categories](#) (Robert Lane, [Peirce's](#)

Triadic Logic Revisited, *Transactions of the Charles S. Peirce Society*, 35, 1999, 2; Asim Raza and Asim D. Bakhshi, *An Application of Peircean Triadic Logic: modelling vagueness*, *Journal of Logic, Language and Information*, 2019). Insights into *triadic relations* are collected in *Inquiry into Inquiry*.

In the light of the manner in which 3-fold and 4-fold category systems can be considered as interrelated, it is appropriate to note the complementary categorization of conditions of the *Tao Te Ching*, notably as experimentally related to another classic of that period, the *T'ai Hsüan Ching* (*9-fold Magic Square Pattern of Tao Te Ching Insights: experimentally associated with the 81 insights of the T'ai Hsüan Ching*, 2006). As discussed separately, rather than the binary coding system of the *I Ching*, giving rise to 64 hexagrams, it uses a ternary coding systems that gives rise to 81 tetragrams (*Strategic Patterns in terms of Knowing, Feeling and Action*, 2008).

The assumption here is that there are 3 dimensions which merit distinction at a round table, however these may come to be more fruitfully described. For example:

- one might be more readily associated with the obvious and tangible following from a need to assemble stakeholders to demonstrate representativity
- a second might be more readily associated with the emotional relations of sympathy and antipathy elicited by distinct cognitive styles
- a third could be imagined to be a subtler appreciation (or deprecation) of the values and principles that each represents -- or of what is otherwise left unsaid (*Global Strategic Implications of the "Unsaid"*, 2003).

The degrees of subtlety are reflected in some measure by the degrees of transparency in the screen shots and animations above.

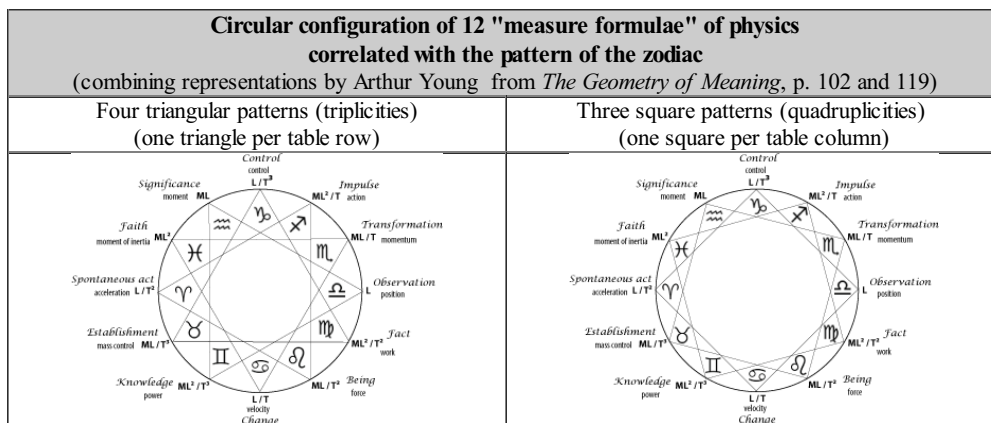
Reframing a 12-fold pattern of discourse in 3D

Geometry and dynamics of meaning: There is some irony to the fact that the developer of the Bell Helicopter engendered insights from his work of relevance to the cognitive processes of its navigation -- necessarily in 3D. The irony is all the greater in that the framework used to articulate the 12 systemic functions highlighted is presented using a zodiacal framework abhorrent to any scientific perspective (Arthur M. Young, *Geometry of Meaning*, 1976). This usefully frames the challenge of how any "alienating" 12-fold framework may be "mined" for generic insights -- or simply recognized in metaphorical terms as a useful mnemonic aid (for some).

Of particular value is the degree of articulation in Young's approach, and the manner in which the system functions (as "archetypes") are attentively interrelated -- borrowing from a traditional system comprehensible to many to some degree. Young explicitly indicates his effort in terms of the symbolism of the Rosetta stone, as discussed separately (*Geometry of meaning: an alchemical Rosetta Stone?*2013). The framework can be variously adapted to apply to concerns of relevance to governance and the articulation of policy, as illustrated by the following:

- *Characteristics of phases in 12-phase learning-action cycle* (1998)
- *Typology of 12 complementary strategies essential to sustainable development* (1998)
- *Typology of 12 complementary dialogue modes essential to sustainable dialogue* (1998)

As discussed separately with respect to Young's initiative, he suggests the following "correlations"from the perspective of physics (*Rosetta stone of meaningful cycles?* 2018).



These can be tentatively combined with other metaphors to offer a sense of the dynamics. That on the right derives from a separate discussion (*Dynamic relationship between domains of order in global civilization*, 2013).

Exploitation of Young's Rosetta stone pattern as a mapping template (tentative)	
12-fold interplay of multiple metaphors	12-fold interplay of order, law, force and lore

Missing from such arguments, or only subtly implied by them, is the nature of the engagement of archetypes as embodied ("knights", "apostles", etc) rather than as attributed to external "personifications" (deities, etc). This engagement is clarified by:

- "re-cognition" of being the driver of a vehicle -- a helicopter as the inspiration for the argument of Young (1976) -- rather than adopting the role of a "back seat driver"
- the reference to having "[skin in the game](#)" as pointedly elaborated by Nassim Nicholas Taleb (*Skin in the Game: hidden asymmetries in daily life*, 2018), for whom the articulations of advocates of particular forms of action lack precisely that engagement with reality
- recognition of the "number" (or variety) of strategic moves that one can make as the driver, perhaps to be understood as:
 - the number of gears into which one can shift
 - the postures one can adopt (as in the martial arts), chess, or go -- or possibly online gaming (notably as inspired by mythology)
 - the games one can play, as suggested by the *Games People Play* of Transactional Analysis
- emphasis on the cognitive posture articulated and embodied by Mahatma Gandhi: *You must be the change you wish to see in the world.*

The engagement between those at a 12-fold round table could be understood in terms of the [proprioceptive dialogue](#) deriving from the work of [David Bohm](#) and cultivated by [Steven Rosen](#). This implies a degree of radical honesty most apparent between participants with "skin in the game" -- namely dialoguing under conditions of risk rather than from within a comfort zone.

Pattern connectivity: The subtle complexity, together with the inappropriateness of closure, highlights the significance of an aesthetic quality to the dynamics of a global table (*Aesthetics of Governance in the Year 2490*, 1990; *Aesthetics and Informatics: the art of information for policy-making and community-building*, 1999; *Aesthetic "re-membrance" of the whole through cognitive "skins"*, 2016). Despite the incidental appeal this may have, its importance is most evident in enabling a sense of coherence and connectivity in comprehension of the "pattern that connects", as highlighted by Gregory Bateson (*Mind and Nature: a necessary unity*, 1979) in making the point that:


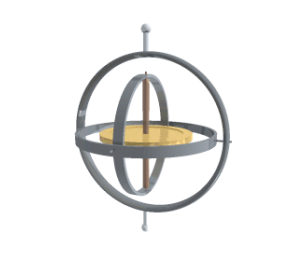
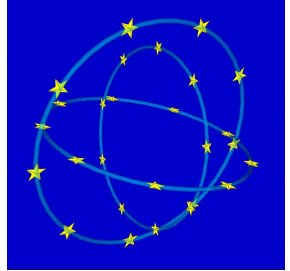
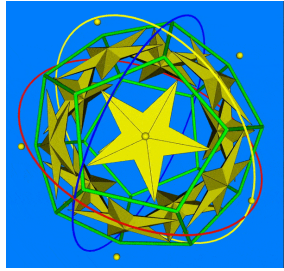
The pattern which connects is a meta-pattern. It is a pattern of patterns. It is that meta-pattern which defines the vast generalization that, indeed, it is patterns which connect.

As argued elsewhere, the challenge for a global table is then one of *Enactivating the Pattern that Connects*" (2006). As noted above the "looser" degree of connectivity, especially in terms of complementarity, can be usefully explored through the various understandings of correspondences (*Theories of Correspondences -- and potential equivalences between them in correlative thinking*, 2007).

Table vs Portal? The appropriateness of the "table" metaphor may itself be challenged, especially if the implication is that the dialogue there will enable transportation to another location, space, or framework. In particular, rather than the three mutually orthogonal "tables" illustrated above, they may rotate in relation to one another according to other principles. Alternatives might also include some sense of portal or gate:

- A radically distinctive example is the so-called "[gateless gate](#)" of the Zen tradition (*Configuring a Set of Zen Koan as a Wisdom Container: formatting the Gateless Gate for Twitter*, 2012).
- The evocatively imaginative [stargate](#) of the TV series (the theme of the *Stargate Wiki*; notably evoking the creativity of artists such as Silvia Hartmann, *Stargate Symbols*).
- The imaginative mechanism presented in the iconic movie *Contact* (1997), as shown below left -- imagined in the light of a science fiction novel by astrophysicist [Carl Sagan](#) (*Contact*, 1985).

The mechanism in the movie was partly inspired by the [gyroscope/gimbal dynamics](#) shown in the animation below. This suggests ways of configuring the symbolic stars of the Flag of Europe, as indicated below. A suggestive animation of 3 mutually rotating circles, within which the icosahedron/dodecahedron is embedded, is presented for comparison (below right). The icosahedron is rendered transparent except for the vertices. Those animations derive from a separate discussion (*Experimental Visualization of Dynamics of the European Parliament in 3D*, 2019). In this context they raise the question of how any such 12-fold configuration constitutes a strategic portal of cognitive relevance to the times.

"The Machine" of <i>Contact</i> (animation)	Gimbal stabilization of compass using gyroscope dynamics	Indicative gyroscope dynamics of Flag of Europe	Gimbal animation of 12 stars in dodecahedral configuration
			
Reproduced from <i>Wikipedia</i>		<i>Experimental Visualization of Dynamics of the European Parliament in 3D</i> (2019).	

Emergency preparedness team design and process

Any archetypal round table can be readily assumed to be of requisite variety to ensure resilience in anticipation of crisis -- as is necessary for [emergency preparedness](#). The argument above raises the question as to whether the design of a "table" constrained by cognitive "flatness" is adequate to a crisis of global dimensions, and especially any crisis of crises. What styles of thinking and forms of expertise need to be designed into a "global table" and what are the feedback processes necessary to its sustainable operation? How do these ensure resilience and an ability to navigate the non-linearity of the [adaptive cycle](#) (Daniel Christian Wahl, *The adaptive cycle as a dynamic map for resilience thinking*, *Hackernoon Newsletter*, 4 April 2017)?

Of concern in any team design is what cognitive styles and skills are inadequately represented and which are excessively represented? How is such imbalance in systemic terms to be detected?

Especially intriguing is the challenge of detecting faint signals warning of a potential crisis -- when these may be meaningless to many of the cognitive styles represented on the team. This is clearly of importance in the case of bodies responsible for oversight in anticipation of potential crisis. This strongly suggests the need for simulation of oversight functions, especially under conditions of information overload.

Also of relevance is the potential challenge of those who see benefit in crisis and the need to inhibit any capacity for emergency preparedness. The issue has been clarified by the work of Nassim Nicholas Taleb (*Antifragile: Things That Gain from Disorder*, 2012). Arguably in the USA and the UK some vested interests are exhibiting a dangerous enthusiasm for cultivating chaotic conditions (Anthony Cordesman, *America's "Chaos Strategy" in the Middle East and South Asia*, *Center for Strategic and International Studies*, 26 February 2018).

Aside from the crises that can be readily foreseen and imagined, of particular interest is the hypothetical possibility of contact with the intelligent [extraterrestrials](#) anticipated by many. Disastrous responses have been variously foreseen in fiction, as exemplified by the *Avatar* movie (2009). In that light, and given the arguments above, how might the appropriate composition of a team and its processes be envisaged (*Designing a Team for Alien Encounter: Communicating with Aliens*, 2000). Given the arguments of Taleb (2007) regarding the effects of surprise, how challenging might be such an encounter, given the limited capacity to engage effectively with "aliens" and "terrestrial extras" on Earth (*Writing Guidelines for Future Occupation of Earth by Extraterrestrials: be done by as you did?* 2010).

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