



# laetus in praesens

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## Imaginative Reconfiguration of a post-Apocalyptic Global Civilization

### Engaging cognitively with the illusion of the "End of the World"

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## Introduction

The apparent non-happening of the "End of the World" on 21 December 2012, supposedly according to Mayan prophecy, has been the subject of extensive commentary. One useful analysis of the misleading framing of the prophecy by the media is that of [Michel Chossudovsky](#) (*The Mayan 2012 Prophecy: Orwellian "End of the World" Doomsday is "Made in America"*, *Global Research*, 19 December 2012). The prophecy itself has been placed in a useful context by Ed Vulliamy (*Mayan 'death and rebirth' date marks the perfect time to tackle planet's crisis*, *The Observer*, 16 December 2012).

Belief in the illusion has been framed with appropriate humour by [until.org](#) in the following image:



The "crisis of crises", which implies catastrophic collapse, has been the focus of various commentaries -- irrespective of any "End of the World". A previous exercise endeavoured to address the cognitive implications for those striving to live creatively and consciously through the period (*Beware of Legality, Accountability, Marketability, Security! Be where the Four Horsemen of the Apocalypse are not?* 2012).

The concern here is how the imaginative focus of an "End of the World", notably as articulated through inferences regarding Mayan understanding, can be used to reconfigure -- imaginatively -- a post-Apocalyptic global civilization, whatever that might be held to mean. Especially intriguing is what such imagining might imply for the individual and any understanding of globality -- whether psychosocially or in engagement with the environment.

The approach in what follows is to point to various modes of configuration which may be fruitful in sustaining such imaginative exploration.

## Imaginative patterns of global reconfiguration

Consideration of reconfiguration appropriate to the future can usefully take as one point of departure the imaginative patterns elaborated by the Mayans -- understood in this case as an early "play" on sets of numbers through the [Mesoamerican Long Count](#), and as previously

argued (*Representation, Comprehension and Communication of Sets: the Role of Number*, 1978). Thus as presented by *Wikipedia*:

The completion of 13 **b'ak'tuns** (August 11, 3114 BCE) marks the Creation of the world of human beings according to the Maya. On this day, **Raised-up-Sky-Lord** caused three stones to be set by associated gods at **Lying-Down-Sky, First-Three-Stone-Place**. Because the sky still lay on the primordial sea, it was black. The setting of the three stones centered the cosmos which allowed the sky to be raised, revealing the sun.

Rather than using a base-10 scheme, like Western numbering, the Long Count days were tallied in a modified base-20 scheme. Thus 0.0.0.1.5 is equal to 25, and 0.0.0.2.0 is equal to 40. The Long Count is not pure base-20, however, since the second digit from the right rolls over to zero when it reaches 18. Thus 0.0.1.0.0 does not represent 400 days, but rather only 360 days.

According to this scheme 21st December 2012 saw the end of one cycle in the long count at 13.0.0.0.0. The cycle of the 14th "b'ak'tun" has therefore now commenced.

The question here is how this cyclic understanding might be fruitfully related to cognitive frameworks anchored in the conventions of the last phases of the 13th "b'ak'tun". Specifically the question may be framed in terms of the relationship between the "Mayan" pattern of 13 anticipating 14, with respect to the predilection of the current global civilization for a pattern of 12 (cf. *Checklist of 12-fold Principles, Plans, Symbols and Concepts: Web resources*, 2011)

## Sphere packing as a fundamental spatio-temporal pattern

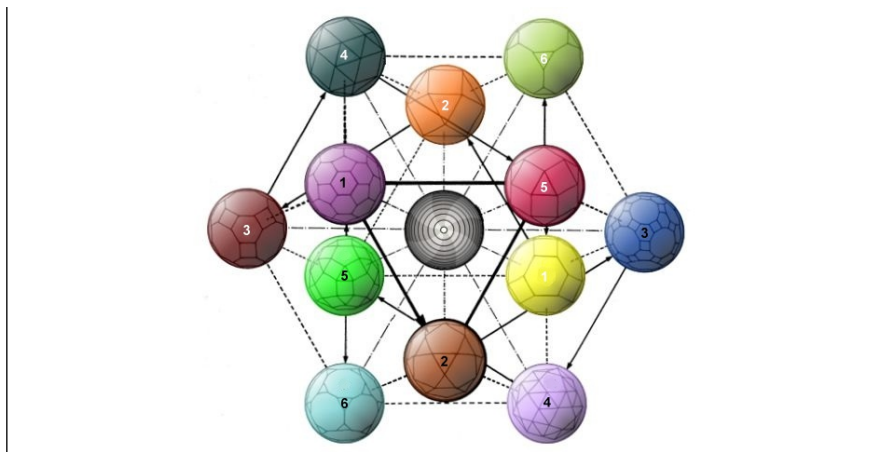
Curiously a "world" is readily understood as spherical -- whether as a planet or for those living imaginatively "within their own world". More curious is the focus on the **spatial** (geometrical) nature of such globality -- if only as a metaphor. However it is also readily understood that a world has **dynamics** -- such as rotation and revolution. It is however less clear what these dynamics imply in **temporal** terms for the "world" of any individual or group. Especially challenging is how the **cycles** of a world are to be understood in relation to one another -- and to other "worlds". One approach to cyclic understanding of a world is through toroidal dynamics (*Complexification of Globalization and Toroidal Transformation*, 2010; *Implication of Toroidal Transformation of the Crown of Thorns: design challenge to enable integrative comprehension of global dynamics*, 2011)

The imaginative challenge in reconciling the Mayan pattern of 13 and 14 with current predilections for 12 can be explored through **sphere packing**. This assumes that the spatio-temporal cognitive "worlds" are somehow packed in cognitive spacetime -- in terms of their potential emergence. A key contribution to such explorations is the work of **R. Buckminster Fuller** (*Synergetics: explorations in the geometry of thinking*, 1975; *Synergetics 2: further explorations in the geometry of thinking*, 1979) -- as separately discussed (*Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009).

Of particular relevance to "reconciling" 12, 13 and 14, is the related work of **Keith Critchlow** (*Order in Space: a design source book*, 1969). He explores the relationship between the **Platonic forms** and **Archimedean forms** which are so fundamental to many conventional patterns (*Examples of Integrated, Multi-set Concept Schemes: Annexes to Patterns of N-foldness*, 1984). It is the representation of the configuration of them which is especially relevant to this argument.

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

<b>Archimedean polyhedra</b> (as discussed in <i>Union of Intelligible Associations: remembering dynamic identity through a dodecameral mind</i> , 2005)	
Successive truncations of <b>octahedron</b> 2, 3, 4-fold symmetry	Successive truncations of <b>icosahedron</b> 2, 3, 5-fold symmetry
<ol style="list-style-type: none"> <li>1. <b>truncated octahedron</b> (14 polygons: 4 / 6 sided)</li> <li>2. <b>cuboctahedron</b> / vector equilibrium (14: 3 / 4)</li> <li>3. <b>truncated cuboctahedron</b> (26: 4 / 6 / 8)</li> <li>4. <b>snub cube</b> (38: 3 / 4)</li> <li>5. <b>rhombicuboctahedron</b> (26: 3 / 4)</li> <li>6. <b>truncated cube</b> / <b>hexahedron</b>(14: 3 / 8)</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>truncated icosahedron</b> (32 polygons: 5 / 6 sided)</li> <li>2. <b>icosidodecahedron</b> (32: 3 / 5)</li> <li>3. <b>truncated icosidodecahedron</b> (62: 4 / 5 / 10)</li> <li>4. <b>snub dodecahedron</b> (92: 3 / 5)</li> <li>5. <b>rhombicosidodecahedron</b> (62: 3 / 4 / 5)</li> <li>6. <b>truncated dodecahedron</b> (32: 3 / 10)</li> </ol>
<b>truncated tetrahedron</b> (8 polygons: 3 / 6 sided)	
<p><b>Arrangement of the 12 Archimedean polyhedra in their most regular pattern, a cuboctahedron, around a truncated tetrahedron</b> (from Keith Critchlow, <i>Order in Space</i>, 1969, p. 39). Arrows indicate the succession of truncations from 1 to 6 in each case. (<i>Disabled: Clicking on a polyhedron links to a spinning image</i>)</p>	



Missing from such **explicit spatial representation** is a sense of their **implicated cognitive dynamics** -- ensuring the distinctive integrity of each world, as a mode of knowing, to those "inhabiting" them. These dynamics are implied to a degree by the interlocking circles characteristic of each of the above spherically symmetrical polyhedral forms. Potentially these offer the possibility of sustaining future reinforcement in ordering social networking on the web (cf. *Spherical Configuration of Interlocking Roundtables: Internet enhancement of global self-organization through patterns of dialogue*, 1998; *Polyhedral Empowerment of Networks through Symmetry: psycho-social implications for organization and global governance*, 2008). They also have strategic implications (cf. *Representation of Interlocking Elements for a Sustainable Global System: configuring strategic dilemmas in intersectoral dialogue*, 1995).

## Transition to 14-fold patterning -- transcending the problematic challenge of 13

As noted above, conventional global mindsets can be said to have been based on 12-fold patterns (cf. *Checklist of 12-fold Principles, Plans, Symbols and Concepts: Web resources*, 2011). Curiously this has been associated with an irrational terror of patterns based on **thirteen** (*triskaidekaphobia*) and the demonic worldview this might imply -- as a challenging form of "otherness".

The configuration above is striking in that it offers a context for a "thirteenth world" within the framework of twelve distinct worlds, mindsets or modes of knowing. Potentially more striking in mnemonic terms, in relation to the Mayan narrative, is the sense in which, as a polyhedral form, this thirteenth world -- of the 13th "b'ak'tun" -- is distinctly pyramidal as a **truncated tetrahedron**. It therefore echoes the architectural cues of the Mayan temples. Within the above configuration, it is however the single form with which all twelve other surrounding forms are in contact. Imaginatively it may be assumed (realistically) that the cycles of a world have some form of "shadow" associated with them -- a "night side" -- potentially to be understood as that which is in contact with the central thirteenth world whose existence is so readily "designed out" of conventional 12-fold thinking.

As what could readily be understood as a cognitive "**underworld**" -- if only in terms of the geometry of the configuration -- the position of the thirteenth world can be usefully associated with the mythological terror of its demonic associations, as something truly "other" and therefore fundamentally problematic and readily to be associated with the collective unconscious (cf. *John Ralston Saul, The Unconscious Civilization*, 1995). That said, the currently obvious challenges of a global civilization, enthralled by the assumed viability of 12-fold mindsets, suggests that attention is required to the "cracks" in that pattern and how they are to be addressed (*Map of Systemic Interdependencies None Dares Name: 12-fold challenge of global life and death*, 2011).

This exploration can be framed in terms of the challenges of integrating a "netherworld", as separately discussed (*Designing Global Self-governance for the Future: patterns of dynamic integration of the netherworld*, 2010). Also of relevance is the sense in which such an emergent fundamental form -- outside (or underlying) conventional patterning -- is paradoxically associated with the creativity of the **daimonic muse** (cf. *Interweaving Demonic and Daimonic Associations in Collective Memory*, 2008).

An imaginative possibility is therefore to "re-cognize" each "b'ak'tun" as a world cycle within the Mayan cyclic system. The 13th "b'ak'tun" is therefore to be recognized as the period in which the fundamental role of the "netherworld" has manifested as a challenge to the assumed adequacies and appropriateness of the superficial organization of the 12-fold pattern of distinct cognitive worlds.

The completion of the cycle of the 13th "b'ak'tun" can then be understood as a completion of "spatio-temporal geometry" -- understood in cognitive and psychosocial terms -- as offering a **new cyclic template** constituting its foundation. The image above, organized within a **cuboctahedral pattern**, offers the mnemonic association of 14 with the number of faces of that form -- 6 being squares and 8 being triangles -- variously defined by interlocking cycles.

The completion of the 13th "b'ak'tun", providing a context for a fundamental central world, can also be interpreted in terms of recognition of an underlying, "indwelling" intelligence through which the 12 preceding worlds are effectively integrated (cf. *Implication of Indwelling Intelligence in Global Confidence-building: sustaining the construction and dynamic of psychosocial reality through questioning*, 2012; *Unthought as Cognitive Foundation of Global Civilization*, 2012).

## Dynamics associated with a 14-fold pattern

The completion of the 13th "b'ak'tun" can be understood as anchoring a circumscribing sphere encompassing the set of 12 spheres -- as configured in cuboctahedral array around the 13th central sphere.

The fundamental significance of the special dynamics recognized by Buckminster Fuller with respect to the cuboctahedron -- named by

him as the vector equilibrium -- lies in its transformation possibilities (see [video](#)), as discussed separately (*Vector Equilibrium and its Transformation Pathways*, 1980) [see also Will Patera, *Fulleristic Transformations: Vector (Dis)equilibrium*, Cornell University, 2007]. Most notable is its ability to integrate dynamically the Platonic triangular, square, octahedral and icosahedral patterns.

Especially relevant is its integration, through transformation, of the [icosahedral pattern](#) fundamental to the cybernetic insights of [Stafford Beer](#) (*Beyond Dispute: invention of team syntegety*, 1995). The emergent 14-fold pattern therefore provides a coherent context within which to explore the dynamics of the 30 dynamic functions he identifies (as edges of the icosahedron), as discussed separately (*Convergence of 30 Disabling Global Trends: mapping the social climate change engendering a perfect storm*, 2012).

Also of particular relevance in the cuboctahedral ordering is the sense in which the pattern of 14 faces offers significance to the 7-fold axes of order considered so fundamental to the cognitive clustering of sets -- as so influentially articulated by [George Miller](#) (*The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*, 1956). Of related relevance, with their 14 extremes, is the work on seven "axes of bias" by W. T. Jones (*The Romantic Syndrome: toward a new method in cultural anthropology and the history of ideas*, 1961). This particular constraint is also relevant to the work of [Arthur M. Young](#) (*The Geometry of Meaning*, 1976; *The Reflexive Universe: Evolution of Consciousness*, 1976).

There is a degree of mystery to any 30-fold pattern and the dynamics of each within the whole. One pointer to this is the recognition of the challenges to comprehension and memorability of the pattern of [dramatic plots](#) -- as with the categorization by [Georges Polti](#) of every dramatic situation that might occur in a story or performance (*The Thirty-Six Dramatic Situations*).

## Ends and edges understood cognitively in spatio-temporal terms

References to "End of the World", however they may have been misrepresented, raise questions as to the contrasting understandings of "end" in a spatial and a temporal sense. The spatial sense suggests some form of final collapse of a structure -- whether physical or cognitive. The temporal sense emphasizes the end of a cycle -- however that may be sensed and potentially associated with structural collapse. A spatio-temporal "end", combining both, is therefore even more challenging cognitively. Astrophysics explores spatio-temporal forms of collapse, necessarily excluding what such models might imply for human comprehension of collapsing civilization (cf. *Towards an Astrophysics of the Knowledge Universe: from astronautics to noonautics?* 2006).

In geometric terms, the sphere by which a world is spatially defined is commonly understood to be finite but unbounded. The corresponding temporal definition of a world (defined by cycles) is less clear -- as with their combination, and especially when cognitively understood. Further challenges are offered by the sense of an "edge" -- much used with respect to any creative "cutting edge" or "leading edge" -- as these may apply to the "edge of a world", and any associated "pushing the envelope" (cf. *Seeking the "Cutting Edge" of Sustainable Community*, 1997). A very active group is [Edge.org](#) whose focus is: *To arrive at the edge of the world's knowledge, seek out the most complex and sophisticated minds, put them in a room together, and have them ask each other the questions they are asking themselves.*

Especially intriguing at this time is any sense that "end" may be associated with "nothingness" in some special way, given the increasing importance attached to the significance of nothingness by physics (*Emerging Significance of Nothing*, 2012). There is a corresponding cognitive recognition that merits attention (*Configuring the Varieties of Experiential Nothingness*, 2012). These point to conditions *Where There is No Time and Nothing Matters: cognitive challenges at the Edge of the World* (2008).

Most ironically, many now claim that circumstances are such that they indeed have a sense of having "no time" and may well have a related sense of being "at an end" -- however either is to be understood. Both are characteristic of the stresses of the pace of modern life. With respect to remedial action in response to global crises, others argue that the urgency is such that "there is no more time" or that there is "no time left". These understandings could be seen as consistent with claims and prophecies regarding "end times". There is considerable irony to ridicule of the eschatological understandings of "end of time" scenarios when many, including leaders at the highest level, already claim that they "have no time".

The conventional focus of [eschatology](#) by theology, physics, philosophy, and futurology is on the final events of history and the ultimate destiny of humanity. Given current claims to "have no time", this could then be reframed -- curiously consistent with the much-deprecated cognitive claims of mysticism -- as the end of ordinary reality in which time gives scope for fruitful initiative and reflection. People are now to be recognized as increasingly faced in their daily lives with what religions have claimed to be "the four last things": death, judgement, heaven and hell" -- however subsequent "reunion with the divine" is then to be understood, most notably with respect to aspirations to any form of global governance.

Strangely the "suicidal" consequences of "having no time" to elaborate and implement appropriate collective policies in response to imminent crisis are matched by the tendency to suicide by those recognizing they have "no future" otherwise -- or who embody their understanding proactively as a "suicide bomber". Eschatology could now be more fruitfully re-cognized as the study of "having no time" -- perhaps consequent on a pattern of choices ensuring busyness.

Any "end of the world" and emergent recognition of "nothingness" -- as a "happening" which "matters", or as a non-happening -- then bears reflection in terms of the *Import of Nothingness and Emptiness through Happening and Mattering* (2008). How is the process associated with illusion or as some form of mirage? As a challenge to the imagination, the phrase *When a Man Dies, a World goes out of Existence* (as variously attributed to [G. L. S. Shackle](#) and to [Josef Popper-Lynkeus](#)) merits consideration -- especially for the person who dies. If there is "no time" for what is held to be "important" or "fundamental", what does "importance" then imply?

With respect to the solstice of 21 December 2012, as marking the end of a cycle according to Mayan understanding, current comprehension of it could be explored in terms of the capacity to recognize the "end of an era" -- by those whose behaviours exemplify it. This is most evident in the case of revolutions in which those in power are unseated, dethroned, exiled or executed -- most notably the

aristocratic or intellectual elites. A subtler variant -- a softer revolution -- is evident in the case of the end of the Victorian-Edwardian era and the experience of those whose values were identified with it. Who is now to be identified, in a position of power and authority, as inherently incapable of recognizing the end of the era in which their worldviews held sway as being necessarily and unquestionably appropriate?

Potentially even subtler are cognitive revolutions variously associated with changing dependence on knowledge tools such as the internet. With respect to any "end of the world", aspects of the cognitive challenge have been explored by Karen A. Cerulo (*Never Saw It Coming: cultural challenges to envisioning the worst*, 2006). The case has often been made in terms of the anecdote regarding the [boiling frog](#) and its (in)capacity to recognize when to jump out of the water.

## Towards the challenges of the 15th "b'ak'tun"?

The completion of the 13th "b'ak'tun" can be understood as "anchoring" a circumscribing sphere encompassing the set of 12 spheres -- then configured in cuboctahedral array around the 13th central sphere. As noted above this provides a framework within which the dynamics between the 12 can be more coherently explored -- a matter of great potential significance given their highly disparate nature, and the conflicts to which this may give rise (cf. *Eliciting a 12-fold Pattern of Generic Operational Insights: recognition of memory constraints on collective strategic comprehension*, 2011).

The question then becomes the insights to be derived from the subsequent challenges of the 15th "b'ak'tun" -- transcending whatever prove to be the limitations of the 14th.

Of special interest in this respect are the arguments of [Christopher Alexander](#) (*Harmony-Seeking Computations: a science of non-classical dynamics based on the progressive evolution of the larger whole*, *International Journal for Unconventional Computing (IJUC)*, 2009) with respect to "15 transformations", as discussed separately (*Harmony-Comprehension and Wholeness-Engendering: eliciting psychosocial transformational principles from design*, 2010). The latter focuses in particular on a *Tentative adaptation of Alexander's 15 transformations to the psychosocial realm* (2010). Of interest is how these derive to some degree from the icosahedral 30-fold pattern mentioned above.

## Conclusion

In envisaging future explorations of order, the remarkable work thereon of both Crichtlow and Alexander, as well as of Buckminster Fuller, raises the question as to the extent to which **order in time** is fruitfully integrated into their considerations of **order in space**. The question relates particularly to any sense of the "end" of any ordered "world". Time is especially significant in that the patterns characteristic of order have to be traced out over time, if only in the requisite movement of the (mind's) eye required for pattern recognition.

The arguments for [sonification](#) as a means of enhancing complex pattern recognition, through the relative sensitivity of hearing, suggest that the 12 "worlds" identified above might be metaphorically distinguished in terms of the twelve [pitches](#) of the [chromatic scale](#), namely the [musical scale](#) with each pitch a [semitone](#) above or below another. Distinguishing each "world" in terms of some sense of frequency offers the advantages of a non-spatial approach to the integration of the pattern as previously argued (*Liberation of Integration, Universality and Concord -- through pattern, oscillation, harmony and embodiment*, 1980). The implications for post-Apocalyptic configuration of civilization are separately argued (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006; *Clues to Patterns of Dialogue from Song*, 2011). Potentially significant in that context is the role of "silence" -- as a 13th "world", as a vital marker in any pattern of sound. The implications for cultures with a special affinity for music then merit reflection ([Knowledge Gardening through Music: patterns of coherence for future African management as an alternative to Project Logic](#), 2000).

More significant is the sense in which any such patterns, to be recognized, have to be traced out through an experiential "journey". In that sense they are to be understood as configurations of learning pathways (cf. *Interweaving Thematic Threads and Learning Pathways: noonautics, magic carpets and widdomes*, 2010). The cyclic succession of "b'ak'tuns" may be fruitfully interpreted in that sense as the progressive accumulation of collective learning.

The argument has endeavoured to provide a dynamic framework through which cognitive implications of any "end of the world" might be "re-cognized" -- especially as these relate to the world of the individual ("my world"). In these times many individuals are obliged by circumstances to come to terms with an "end" of their own "world" -- notably consequent on the manner in which the global financial crisis has been engendered..

As an **explication** referring to structures in space and time, the argument obscures the existential reality of such an "end" -- as is only too evident in the case of the emerging **implication** of personal mortality for everyone (cf. [Arthur Koestler](#), *Dialogue with Death*, 1942).

The cuboctahedral configuration of 12 distinctive "worlds" of psychosocial order can then be seen as an explication centered on the implication offered by the 13th "world". Completion of the 13th "b'ak'tun" then offers a sense in which the distinctive formal **objectivity** associated with the mode of knowing of each of the 12 "worlds" is complemented by the **subjectivity** of the 13th with which it is in contact.

A way of thinking of this is in terms of the paradoxes of the [Möbius loop](#), effectively "orbiting" around (or between) the explicit and the implicit -- namely with 12 such loops, each encompassing the 13th at the centre. The cognitive challenges of [self-reflexivity](#) in the case of a single loop have been explored by [Douglas Hofstadter](#) (*I Am a Strange Loop*, 2007), separately discussed with respect to a multiplicity of such loops (*Sustaining a Community of Strange Loops: comprehension and engagement through aesthetic ring transformation*, 2010).

Hofstadter's arguments help to make clear that the understanding of any "end of the world" is not as "obvious" as many would prefer it to

be -- whether with respect to their hopes, fears, or the critical deprecation of such. The argument has been separately developed, using typographical devices in the title to emphasize that ambiguity (*Defining the objective ∞ Refining the subjective ?! Explaining reality ∞ Embodying realization*, 2011; *Conditions of Objective, Subjective and Embodied Cognition: mnemonic systems for memetic coding of complexity*, 2007). The challenge to obvious interpretation is visually reinforced by the "twist" in the Mobius loop and its potential cognitive significance (cf. *Engaging with Questions of Higher Order: cognitive vigilance required for higher degrees of twistedness*, 2004; *Twistedness in Psycho-social Systems: challenge to logic, morality, leadership and personal development*, 2004).

Notions of any ultimate "end of the world", according to whatever prophecies and forecasts, merit consideration in terms of the need to "live penultimately" whatever form such an "end" may ultimately take, as separately argued (*Paradoxes of Engaging with the Ultimate in any Guise: Living Life Penultimately*, 2012). This suggests a way of thinking about the transition between "worlds" -- and from the 13th "b'ak'tun" to the 143th "b'ak'tun" -- in the light of orbital mechanics and the insights into the dynamics of looping between planets (*Orbiting Round Nothingness across Communication Space: possibility of an "Inter-other Transition Network"*, 2012).

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