



# laetus in praesens

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## Being a Poem in the Making Engendering a Multiverse through Musing

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Produced in the light of the joint meeting of the [Scientific and Medical Network](#) and the [Society for Scientific Exploration](#) on *Mapping Time, Mind and Space* (Brú na Bóinne, Ireland, 2012).

## Introduction

This is a reflection on engagement with the quantity of information, the challenge of quality and selectivity, and the consequences of ignorance and confusion as time goes by. The situation becomes ever more evident through the increasing accessibility of information, the lack of time to consider most of it, and the need to focus on what appears to be of immediate concern. The situation is aggravated by the range and complexity of the tools by which it is possible to engage with available knowledge and insight -- and diminishing motivation to acquire the skills to use them, or the capacity to do so.

The situation is notably characterized by the multiplicity of purveyors of information and insight -- from the wisdom of the past to the creativity of the present, radically reframed by imaginative speculations on the future. Engagement is further challenged by the claims and disregard with respect to any insight -- and the questionable efforts towards integrative reformulations to facilitate comprehension and memorability, such as to nourish the quality of life. The potential of [global sensemaking](#) has as yet to be realized.

The condition is usefully understood as epitomized by emerging recognition of the extent and counter-intuitive complexity of the universe. Now reframed by physicists as a "[multiverse](#)" -- potentially composed of a multiplicity of parallel universes -- this complexity might be said to mirror the immediate experience of many, to the extent that they have any comprehension of such speculative hypotheses. Claims by physicists that such comprehension requires insight into ten or more dimensions -- questionably meaningful to only a limited elite -- is appropriately indicative of the experiential challenge of many and the explanations offered to them.

The question here is how any individual might then choose to engage with this experiential multiverse of information, knowledge and insight. The approach taken is to benefit from the appropriation by poets of "multiverse" as fundamentally poetic in its multidimensional significance. Any description of that engagement is however formulated in words, the comprehension of whose meaning is questionable and subject to interpretation -- whilst potentially intimately personal.

A poetic engagement with any multiverse, however imagined, then offers a degree of coherence compatible with individual experience. The dynamics of that engagement, as with that of poetry-making and appreciation, is also consistent with insights of complexity theory into [chaotic systems](#). These in turn are consistent with the process whereby the multiverse of experience is engendered through [poiesis](#) -- and especially through the self-organization of [autopoiesis](#), understood here as the emergence of comprehensible meaning.

The following argument is essentially about "language" -- specifically the contrasting abilities of science and poetry to engender and communicate meaning. However, whilst acknowledging the questionable ability of science to deliver meaning of some value to the collective, the argument highlights the potential for the individual to engender and be nourished "in reality" by meaning of aesthetic form,

exemplified by poetry. It is the manner whereby individual identity is carried coherently by their potential in the face of complexity that is the primary focus.

## Insights from the crisis of science and belief

The ongoing financial crisis has highlighted an unexpected crisis of confidence -- of [global confidence](#). This extends into a crisis of faith in governance and authority, as separately argued (*Abuse of Faith in Governance*, 2009).

Arguably this may be understood in terms of a form of methodological exhaustion of science -- together with other disciplined modes of knowing in a knowledge-based society. Analogues to various diseases may be fruitfully suspected (*Memetic and Information Diseases in a Knowledge Society: speculations towards the development of cures and preventive measures*, 2008). This might notably be recognized as a consequence of "malnutrition" (information fast food), "diabetes" (information obesity) as a consequence of excessive consumption of "sugars", issues relating to "aging" (senility, erosion of collective memory), and collective "attention deficit disorder".

The widespread recourse to drugs could be interpreted in this light -- especially in offering "escape" from one universe and access to others. In a sense people have "moved on" from the conventional modes of knowing offered by authorities and the claims made for their truth -- or become variously disaffected from some, whilst exploring others.

The current situation of science, and appreciation of it by wider society, then offers insights of relevance to engagement of people with a "multiverse".

The crisis with respect to science is explored separately in an annex *Knowledge Processes Neglected by Science: insights from the crisis of science and belief* (2012). This builds on the detailed analysis carefully offered by [Rupert Sheldrake](#) (*Science Set Free: 10 paths to new discovery*, 2012). He indicates (and challenges) the *The Ten Dogmas of Modern Science* (2012), namely the ten core beliefs he considers that most scientists take unquestionably for granted, effectively constituting the scientific creed.

Complementing his articulation, the annex distinguishes the following neglected issues -- of which a significant proportion would seem to be partially or completely ignored in Sheldrake's remarkable critique:

- [Unquestioning preoccupation with explanation](#)
- [Undue preoccupation with validation](#)
- [Selective appreciation of creative imagination](#)
- [Unexamined preoccupation with professional reputation and recognition](#)
- [Deprecation of alternatives and anomalies challenging conventional models](#)
- [Methodological dependence on questionable engagement with society](#)
- [Uncritical belief of science in the appropriateness of its own process](#)
- [Institutionalized incoherence and disagreement](#)
- [Ill-considered recognition of constraints and opportunities of an information-based society](#)
- [Self-referential inadequacy of "metascience"](#)

Also of relevance to the points in the annex, and presumably an inspiration to those of Sheldrake, are [David Bohm's](#) controversial "challenges to some generally prevailing views" as outlined in the *Wikipedia* entry describing his innovative work on *Wholeness and the Implicate Order* (1980).

The question is what are the dimensions of knowledge and information of which science is itself uncritical or unconscious? Those highlighted are variously interrelated from a systemic perspective which could merit clarification (cf. *Map of Systemic Interdependencies None Dares Name: 12-fold challenge of global life and death*, 2011).

The central concern is with the ability of any "language", exemplified by science, to communicate meaning, to inspire collective consensus, or to expect strategically relevant action as a result, as previously discussed (*The Consensus Delusion: mysterious attractor undermining global civilization as currently imagined*, 2011; *Ungovernability of Sustainable Global Democracy? Towards engaging appropriately with time*, 2011).

This context suggests the merit of recognizing the qualities associated with imagination -- notably cultivated by poetry -- as providing unsuspected clues of relevance to life in these times (*Implication of Indwelling Intelligence in Global Confidence-building: sustaining the construction and dynamic of psychosocial reality through questioning*, 2012). Curiously, given the widespread emphasis on faith -- now significantly emerging in these troubled times -- this may also reinforce the case for consideration of a marriage of extremes -- "mathematical theology", as separately argued (*Mathematical Theology: future science of confidence in belief -- self-reflexive global reframing to enable faith-based governance*, 2011).

Despite the defensive arguments of such as [Richard Dawkins](#) (*The God Delusion*, 2006), the methodology of science is now subject to challenge, as most recently argued by [Rupert Sheldrake](#), as noted above. The challenge has been formulated otherwise by such as [Paul Feyerabend](#) (*Farewell to Reason*, 1987; *Conquest of Abundance: a tale of abstraction versus the richness of being*, 1999).

The argument here is that the alienating qualities of the "universe" of science merit reflection in the same spirit that physics reflects creatively on the properties of anti-matter -- and even dark matter. As a mode of knowing, science is of course to be appreciated in many ways. It is its limitations -- increasingly apparent despite its claims (or because of them) -- which call for greater attention (cf. [Steven Weinberg](#), *Can Science Explain Everything? Anything?* 2002).

In particular does it replicate the pattern of behaviour of that which it deprecates? As with other social groups, science tends to replicate patterns, using acquired power and authority to deny the validity of alternative perspectives and to challenge the credibility of their formulators -- without any due consideration of the dynamics of this process. It can be argued that, as a process, "science is losing it"

(like religion before it) and has "set itself up for a fall". Through the process of inquiry and exploration it promulgates, science imitates other processes -- and is imitated by them.

It is in this sense that science can be understood both to be operating in a "parallel universe", and effectively to be hiding its fundamental epistemological challenges in the mysterious higher dimensionality of a "multiverse" -- as with much religion, and complete with "dark matter". Intriguingly this framing highlights the degree of relative accessibility of any "parallel universe", whether of science or religion. Engendered unconsciously, such parallel universes offer recognition of the radical inability to communicate validly, to convince, or to dominate between them.

The imagined existence of a multiverse is then the minimal acknowledgement by science of the existence of "universes" -- as ways of knowing -- to which it does not currently have access, but which may be inhabited by "others". Multiverse is a way of packaging the potential for incomprehensible coherence.

More intriguing is the sense in which science can be understood as functioning as an extremely valuable mirror by reinforcing processes which mirror its dysfunctionality. As the embodiment of the antithesis of personally significant meaning, it claims the contrary, namely through claiming so effectively to be what it is not (echoing the insights of [George Spencer-Brown](#), *Laws of Form*, 1960).

Given the manner in which essentially incommensurable "languages" are characteristic of distinct universes, the very nature of such languages inhibits movement between universes -- as is so evident between disciplines. This poses the challenge for the recognition of "intelligent life" in other universes -- especially when behavioural mirroring is denied (cf. [Self-reflective Embodiment of Transdisciplinary Integration \(SETI\): the universal criterion of species maturity?](#) 2008).

## Questionably exclusive framing of multiverse by science

Multiple "parallel universes" have been hypothesized in cosmology, physics, astronomy, religion, philosophy, transpersonal psychology and fiction, particularly in science fiction and fantasy. Such parallel universes may also be variously termed "alternative universes", "quantum universes", "interpenetrating dimensions", "parallel dimensions", "parallel worlds", "alternative realities", "alternative timelines", and "dimensional planes," among others. The term "multiverse" was coined in 1895 by the American philosopher and psychologist [William James](#) but has more recently been given greater currency and academic credibility by physics (cf. [Bernard Carr](#), *Universe or Multiverse?* 2009; [Multiversal Journeys: theoretical physics made easy for the public](#)). A valuable summary is provided by [Ruediger Vaas](#), who concludes:

Perhaps in a thousand years or already in ten years cosmologists will wonder about us, asking either how we could have been so blind as not to see or accept the signs of other universes, or how we could have been so crazy in our beliefs in (a science of) other universes. Right now however it is an open issue, and therefore not unreasonable to defend and advance a scientific analysis of M. At least in principle there are some possibilities both for a verification of other universes understood as hypothetical universal existential claims and for theoretical embeddings of those claims. This should remind us of what Steven Weinberg (1977) wrote long ago: "our mistake is not that we take our theories too seriously, but that we do not take them seriously enough." ([Multiverse Scenarios in Cosmology: classification, cause, challenge, controversy, and criticism](#), *Journal of Cosmology*, 2010)

Science has created an alienating world of "explanations" about which people are encouraged to read, attend lectures, or view documentaries. It offers little that is enabling of the significance by which people are nourished in their personal experience. In that sense it is fundamentally sterile and may well pride itself on that. Worse perhaps, the pattern of explanations effectively imprisons people in a sterile cognitive space, of which they are relatively unconscious -- echoed by the institutional conditions within which people are consequently employed, as rationalized by science, in a lifelong quest for such nourishment.

This concern is complemented and further justified by the recent work of the biological anthropologist [Terrence Deacon](#) (*Incomplete Nature: how mind emerged from matter*, 2012; *The Symbolic Species: the co-evolution of language and the brain*, 1997). The fundamental value of focusing on what is "absent" from conventional explanation is introduced by Deacon by comparing it to the vital role of **zero** in the number system -- itself a great discovery (cf. Charles Seife, *Zero: the biography of a dangerous idea*, 2000; Robert Kaplan and Ellen Kaplan, *The Nothing that Is: a natural history of zero*, 2000). Appropriate to this argument, as explored below, the integrative multiverse explanation offered by Bernard Carr is schematically presented through the form of the traditional **Ouroboros** -- readily perceived as a kind of zero.

For Deacon:

Basically, it means that our best science -- that collection of theories that presumably comes closest to explaining everything -- does not include this one most defining characteristic of being you and me. In effect, our current "Theory of Everything" implies that we don't exist, except as collections of atoms. So what's missing? **Ironically and enigmatically, something missing is missing.** (p. 1) [*emphasis added*]

He uses this analogue to zero to demonstrate how a form of causality dependent on specifically absent features and unrealized potentials can be compatible with the best of science. Deacon sees this approach as offering a *glimpse of the qualitative outlines of a future science that is subtle enough to include us and our enigmatically incomplete nature, as legitimate forms of knotting in the fabric of the universe* (p. 17)

In his concluding paragraph he notes:

In the title to one of his recent books, [Stuart Kauffman](#) [*At Home in the Universe: the search for laws of self-organization and complexity*, 1995] succinctly identifies what has been missing from our current blinkered metaphysical worldview. Despite the power and insights that we have gained from this powerful way of conceiving of the world, it has not helped us to feel "at home in the universe". Even as our scientific tools have given us mastery over so much of the physical world around and within us, they have at the same time alienated us from these same realms. **It is time to find our way home.** (p. 545) [*emphasis added*]

The concern here is the manner in which any multiverse is thereby framed as a hypothesis disassociated from personal experience and inaccessible to it -- in the here and now. This framing is consistent with the dominant mindset of the sciences. The dimensional complexity associated with the hypothesis implies the need for years of academic training, and proven demonstration of competence amongst peers, before any claims can be made to understanding of it or useful statements can be made regarding it. This is the consequence of the construction of a highly complex formalism which very few, if any, can claim to understand.

## Imaginative engagement with multiverse through poetry

For example, the biologist/anthropologist [Gregory Bateson](#), in explaining why "we are our own metaphor", pointed out to a conference on the effects of conscious purpose on human adaptation that:

One reason why poetry is important for finding out about the world is because in poetry a set of relationships get mapped onto a level of diversity in us that we don't ordinarily have access to. We bring it out in poetry. We can give to each other in poetry the access to a set of relationships in the other person and in the world that we are not usually conscious of in ourselves. So we need poetry as knowledge about the world and about ourselves, because of this mapping from complexity to complexity. (Cited by Mary Catherine Bateson, 1972, pp. 288-9)

Any scientific hypothesis regarding the organization of the universe can readily be understood as a form of "fiction" and questionably distinct from such. Thus *Wikipedia* presents a "A fictional universe is a self-consistent fictional setting with elements that differ from the real world. It may also be called an imagined, constructed or fictional realm (or world)." -- a *fictional universe* as being a self-consistent fictional setting with elements that differ from the real world. The challenge from many perspectives lies in understanding of what is the "real world" in contrast with an imagined, constructed or fictional realm (Roberts Avens, *Imagination is Reality: western nirvana in Jung, Hillman, Barfield and Cassirer*, 1980). This has elicited an appropriately provocative entry on *Multiverse* in the *Uncyclopedia: the content-free Encyclopedia* -- including the purported quotation from Oscar Wilde: *In traditional verse, you have two televisions in your house; in multiverse, you have two houses in your television.*

The incorporation of "verse" in "multiverse" clearly constitutes a temptation to the imagination of the poetically inclined. There is also the sense in which those of poetic inclination are inspired by the imagination of physicists. For the purposes of this argument it is useful to distinguish tentatively between the following.

**Complex multiversal narrative:** A complex web of narratives (with which multiverse was originally associated) may well be understood to some degree by appropriation of implications of "multiverse" as understood by physics (cf. Gary Edward Schnittjerf, *The Narrative Multiverse within the Universe of the Bible: the question of "borderlines" and "intertextuality"*, 2002; K. Faith Lawrence, *Wherefore Art Thou? Crowdsourcing linked data from Shakespeare to Dr Who*, *Proceedings of the ACM WebSci'11*, 2011; Karin Kukkonen, *Navigating Infinite Earths: readers, mental models, and the multiverse of superhero comics*, *StoryWorlds: A Journal of Narrative Studies*, 2, 2010, pp. 39-58; Jo Carrillo, *Getting to Survivance: an essay about the role of mythologies in law*, *PoLAR: Political and Legal Anthropology Review*, 25, 2002, 1, pp. 37-47). Contrasting narrative "lines" and "stories" are then to be understood as constituting different "versions" of the truth.

**Collection of verses:** A poem may be readily understood as a collection of verses -- making of the poem a "multiverse" in its own right. Collections of poems can also be so framed.

**Inspired allusions:** Poems and collections of poems may be explicitly inspired by "multiverse" through allusions to a **radically different mode of organization** and engagement with the associated reality, but without fundamentally reframing that organization or its experiential implications. Examples include:

- [Multiverses](#): an online literary journal featuring haiku and related forms.
- T. Sriraman and N. Krishnaswamy (*Verses for a Multiverse: Poems for the New Generation*, 2011)
- Claudia M. Stanek (*Multiverse Poet: Talk about all things poetry-related, in a multiverse way*)
- [Margaret Alice](#) (*Multiverse*, 2011)

**Experimental exploration of the organization and content of poems:** Poems technically inspired by alternative modes of organization of multiplicity, diversity and complementarity -- in the tradition of experimental poetry:

- Mike Smith (*Multiverse*, 2010), a collection of poems written solely of anagrams, whether of each other or of selected well-known poems, as notably revived by Tony Aarts (*Mike Smith's 'Multiverse'*, *StorySouth*, 2010)
- programmatic construction of a multiverse from a set of tweets, with each poem consisting of 3 lines, and with each line from a different author (*Multiverse: Carefully Constructed Chance Poems from Twitter*, 2010)

**Experiential implication in poetry:** Poetry inspired by the complexities highlighted by the imagination of physics -- possibly framed as quantum poetics (cf. Nick Laird *Quantum Poetics*, *The Guardian*, 19 July 2008). Notable examples include the work of:

- [Amy Catanzano](#) (*iEpiphany*, 2008; *Multiversal*, 2009; *Quantum Poetics: Writing the Speed of Light, Poems and Poetics*, [Part 1](#),

July 2009; [Part 2](#) August 2009; [Part 3](#), December 2011):

The more I think about theoretical physics and the implications of its principles on poetry and prose, the more I question the spacetime of my own poems. I also have new questions of the poems I am reading: How does gravity behave? Where does the poem's universe warp? Broader questions surface: Is poetry a form of space/time travel? What is the result of using a causality-based language in a universe where, through the use of telescopes, the farther we look into space the farther we are looking back into time?...

[Shlain](#) [*Art and Physics: parallel visions in space, time, and light*, 2001], argues that breakthroughs in science often happen near the same time as similar breakthroughs in art. The development of perspective through a single vanishing point gave visual art the third realistic dimension of depth and rejected years of flat depictions of space and time....

One of the most well known of these unified field theories of quantum gravity is string theory, or superstring theory. In proposals such as string theory, spacetime is an ambiguous ecology, and the known universe is thought to be part of a larger wilderness, a multiverse comprised of multiple and perhaps infinite dimensions of space and time that are created by collisions between subatomic, vibrating membranes of energy. String theory attempts to define the evolution of space and matter from the connections between these vibrating membranes of energy. The multiverse, a concept rooted in science fiction, is now an accepted theory of physical reality in theoretical physics. Poems and other innovative languages also seem to be multiversal, invoking invisible ecosystems outside eye-level, molecular and astronomical scales, ambiguous spacetimes, and collisions between membranes or borders....

Astrophysicists propose that ninety-six percent of the known universe is comprised of dark matter and dark energy. Yet we often participate in reality as if the invisible is revealed, as if the universe is seen. Perhaps consciousness, operating in quantum, relative, and multiple states at the same time, and as part of the multiverse's ecology, unbound by the linearity of space and time, is evolving toward novelty through art such as poetry, which is an innovative language of the imagination, and which might equip the invisible universe to see us, so we might, in turn, see it....

*To be in any form, what is that?* In my sense of quantum poetics, to be in any form is not only a question of the poet and of the poem, but of spacetime. ... Quantum poetics does not stop at semiotics or politics or procedure.... By applying principles in theoretical physics to poetry, quantum poetics investigates how physical reality is assumed, imagined, and tested through language at discernible and indiscernible scales of spacetime.... Developments in theoretical physics illustrate that uncertainty and ambiguity are expressed in physical reality, suggesting that uncertainty and ambiguity are not just modes of aesthetics but also forces within spacetime... Isn't the poem always something else? ... The poem might be a shifting-eye picture keeping watch on an ideology or an un/framed protest against convention.

- Cheryl Snell (*Multiverse*, 2008)
- Margarita Ovalle (*Intimacy and Multiverse: notebooks of poems, myths and world visions*, 2008)

**Commentary and interpretation** of the preceding experiential explorations, potentially creative in their own right, by instigators, reviewers and critics. Examples (notably because of their accessibility over the web) include:

- John Hawk, as founding editor of the literary journal *Multiverses*, writes:

Each moment of our lives is a *haiku* waiting to happen. The unique way in which we experience these moments creates an authentic and personal reality known only to ourselves -- our own little universe, so to speak. Yet we are all part of the same sum. By sharing our individual experiences and observations, we gain perspective and insight into the world of others, therefore becoming better attuned and more intimate with our own. It is with this idea in mind that *Multiverses* happened into existence, and it is with great reverence and humility that I share these moments with each and all of you.

- Amy Catanzano, as reviewed by Tina Brown Celona (*The Post-Romantic "I": reading the multiverse in Amy Catanzano's iEpiphany and Multiversal*, *Denver Quarterly*, 44, 3):

*Multiversal* [is] a detailed account of the phenomenal world, starting with subatomic particles and extending to the furthest reaches of the cosmos, filtered through an imaginative consciousness.... Political arguments for an aesthetic that privileges multiplicity over unity, the indeterminate over the predetermined, "the encyclopedic impulse" over the "impulse to boundedness," the "open" text over the closed, which rejects the authority of the writer over the reader and favors process over product, are familiar to anyone who reads much contemporary poetry.... The action of these poems [in *iEpiphany*] is phenomenological and ontological: seeing, thinking, dreaming, deciphering, locating, learning, imagining, and ultimately, at the limits of knowledge, inventing. But the "*iEpiphany*" occurs long before the closing lines: consciousness and existence are contiguous, dimensions which extend one another, overlapping in zones of imagination and invention and "reproduction.".... A close reading of *Multiversal* reveals an almost obsessive concern with perceiving, measuring, interpreting, apprehending "reality" and transmuting that experience into descriptive or constitutive language. Mapping, measuring, calculating, charting the dimensions of perimeters, boundaries, territories, borders, peripheries is the work Catanzano proposes and pursues.... In Catanzano's poems, a human subject encounters the multiverse. This subject is permeable to the "outside."

Michael Palmer introduces *Multiversal* (2009) with:

Amy Catanzano offers us a poetic vision of multiple orders and multiple forms, of a fluid time set loose from linearity and an open

space that is motile and multidimensional. The work exists at once in a future-past and in a variety of temporal modes... In a time of displacement such as ours, she seems to say, in place of 'universals' we must imagine 'multiversals,' in place of the fixed, the metamorphic....

- Margarita Ovalle (*Intimacy and Multiverse. Notebooks of poems, myths and world visions*, 2008) as reviewed by Luis Weinstein: The intimacy seems to refer to the small, calls to feel proximity, brings associations of confidences, of complicity between silences, subtle touches, moist eyes, remembers the exclusion of the forest, the galaxy, the crowd, evokes the delicacy and care. The multiversal impresses as extensive, perhaps rollingly unreachable perhaps full of the neglect of a colossal wave not prepared to distinguish between algae, fish and navigators. This book, this project, almost irreverent, puts the accent on the correspondence, the conjunction, the integration, the synergy of the depth of the interior, the intimate, the individualized, the local... and the vast, universal, the "multiversal", the diverse. It points to a multiverse in the intimacy, in an intimacy of the encounter, of the groups in the networks, in the universal visions, in the community action, in the common sense. The intimacy is the dream, invisible of small, germ of a project of life, of vision of the human being influencing in society, culture, history, in evolution. The multiverse is the torrent of time, the giddiness of the space. The unembraceable diversity of every human, each link, each creation. Each world.
- Cheryl Snell (*Multiverse*, 2008) as variously reviewed [review] [review]. This is a short collection of poignant poems that edge the idea of a MULTIPLE universe replacing the concept of a simple UNIVERSE: But lest the reader be afraid that the scientific aspect of this premise is prevalent in this collection, it must be pointed out that despite the original 'idea' of the title, the poems in this collection are immediately accessible, very beautiful works indeed. The flow and meaningful content of this book of poems by a seasoned writer is made even more seductive by the addition of expressionistic paintings by Janet Snell. Rarely have poems been so well 'illustrated' or at least so integrated as they are by the two Snells working in tandem. At the heart of these poems and art is a sense of home, of the sounds of and sense of night, and the radiant meanderings of on seasonal strokes. And yet Snell knows how to bring all of nature together, to include humans, in a touching manner. This is a collection of poems to be lingered over, like reminders of first views or experiences we usually keep to ourselves for fear that speaking of them will make them lost to us. Snell has captured these moments and we can only hope she will continue to write such tender thoughts as well as in MULTIVERSE.

Irrespective of such commentary, others have given thought to the implications of "multiverse" from a poetic perspective, including:

- Ian Irvine (*Gods and the Quantum Muse: Creativity and the Multiverse*, 2012)
- Gary C. Gibson (*Ostensive Objects of Multiverse Philosophy and Forces Delimiting Extra Dimensions*, *AllPoetry*, 2011).
- David M. Baulch (*Time, Narrative, and the Multiverse: Post-Newtonian Narrative in Borges's "The Garden of the Forking Paths" and Blake's Vala or The Four Zoas*, *The Comparatist*, 27, May 2003)
- Karin Kukkonen (*Navigating Infinite Earths: Readers, Mental Models, and the Multiverse of Superhero Comics*, *StoryWorlds: A Journal of Narrative Studies*, 2, 2010, pp. 39-58):

In a recent study of multiple worlds in physics, philosophy, and narrative, Marie-Laure Ryan argues that our "private encyclopedia" is deeply rooted in the classical notion that there is one world in which we live and through which we think-rather than many such worlds. As Ryan puts it, "[f]or most of us, the idea of parallel realities is not yet solidly established in our private encyclopedias and the text must give strong cues for us to suspend momentarily our intuitive belief in classical cosmology" (Ryan 2006: 671). Cognitive-psychological research on mental models, that is, scenarios we mentally develop in order to reason, also stresses that situations triggering the creation of multiple mental models are difficult to process (see Jarvella, Lundquist, and Hyönä 1995), and that we construct mental models in order to eliminate alternatives and create coherence (Johnson-Laird 1983; Garnham and Oakhill 1994). Thus, when reading fiction, interpreters construct "a three-dimensional model akin to an actual model of the scene" (Johnson-Laird 2006: 37) in order to locate the characters in a story, monitor the events and project the narrative's progress (see Herman 2002). In such contexts readers' mental model is called a "storyworld," and it relies on the same one-world ontology that Ryan associates with "our intuitive belief in classical cosmology."

*Hypotheses of consciousness and spacetime* Statemaster Encyclopedia:

Space-time theories of consciousness relate the geometrical features of conscious experience, such as viewing things in space-time at a point, to the geometrical properties of the universe itself. These theories should properly be called hypotheses and sometimes make specific predictions, and so their proponents assert that they should be considered as protoscience rather than pseudoscience....

These space-time theories of consciousness are highly speculative but have features that their proponents consider attractive: every individual would be unique because they are a space-time path rather than an instantaneous object (i.e., the theories are non-fungible), and also because consciousness is a material thing so direct supervenience would apply. The possibility that conscious experience occupies a short period of time (the specious present) would mean that it can include movements and short words; these would not seem to be possible in a presentist interpretation of experience. Theories of this type are also suggested by cosmology. The Wheeler-De Witt equation describes the quantum wave function of the universe (or more correctly, the multiverse). This equation does not involve time. Time was explained by Bryce De Witt by dividing the multiverse into an observer with measuring devices and the rest of the universe. The rest of the universe then changes relative to the observer. This introduction of time results in the occurrence of space-time, gravity and the rest of the observed material world.

Relation between science and poetry. The possible dialogue between verse and universe (or multiverse). Testimony from Ilya Prigogine and Carlo Rubbia, in Rio de Janeiro, personal acquaintances of the author. Poetry discovers the quantum horizon. And its implications vis-à-vis the notion of particle physics, from simple to complex. The old paradigm and the new paradigm. The beautiful, unexpected face of complexity. Beauty and intelligence, as interfaces of one same process.

Jenn MacCormack, as editor of *Written River: A Journal of Eco-Poetics*, offers valuable insights into the *Psychology of a Poem*, suggesting that almost all creative writing has some element of self-exploration or self-understanding involved, whether the writers realize it or not. She discusses the "poem as a person", noting with respect to the "poem as psyche":

Poetry as a psyche (or body-mind) acts as a bridge, a channel between our own psyches (body-minds) and the more-than-conscious psyche, that is, the body-mind of the earth itself. Heraclitus, perhaps one of the first Western psychologists, said that the psyche was boundless, with depths beyond our searching: "You could not find the ends of soul (psyche) though you traveled every way, so deep is its knowing (logos).

With respect to "putting poetry as people into practice", MacCormack argues:

And then there is **Feral Poetry** ... poetry that has broken free and allowed to follow its own way. Truly wild and untamed poetry is as endangered as any of our other ancient species, and it is just as important to our well being as humans and a planet as any other member of this planetary ecosystem. With such an inundation of "words" around us all the time, poetry must learn how to be feral, how to ask the uncomfortable questions, how to shed its skin and be at home in its body, in essence -- how to be a poem again.

## Poetic insights into becoming a poem -- and being one

If poetry is highly dependent on metaphor, it is appropriate to note the insight of **Kenneth Boulding** (*Ecodynamics; a new theory of social evolution*, 1978):

Our consciousness of the unity of self in the middle of a vast complexity of images or material structures is at least a suitable metaphor for the unity of group, organization, department, discipline or science. If personification is a metaphor, let us not despise metaphors -- we might be one ourselves.

Despite the inspiration of multiverse and its subtleties, as highlighted above, there is a sense in which the preoccupation of those cited is fundamentally "about" poetry as a written "product". This would appear to extend to the field of critical "metapoetics" -- corresponding to "metascience" -- as notably reviewed by Graham Zanker (*Metapoetics, or Leaving the Poetry Behind? The Classical Review (New Series)*, 49, 1, 1999, pp. 13-15).

The epistemological challenge of both modes of knowing -- science and poetics -- may be more fruitfully approached by efforts to centre the engendering identity within the process, irrespective of commentary on any product (especially the product of others). This calls for "re-cognition" of the process of "doing science" or "making poetry". With respect to science, insights into "doing mathematics" are of particular relevance (**George Lakoff** and Rafael Núñez, *Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2000). The relevance of a process-focus in the case of poetry, in contrast with preoccupation with the product, has been highlighted with respect to articulation of strategy (*Poetry-making and Policy-making: arranging a marriage between Beauty and the Beast*, 1993).

Clues may then be sought in efforts to articulate "being a poem" -- fruitfully extended to "becoming a song" -- even though those efforts necessarily result in a product which is the focus of commentary and criticism. The relevance to popular culture is exemplified by the much-cited lyrics of *I Am a Song*. A highly influential example is the work of **Walt Whitman** (*Song of Myself*, 1855). In the poem he emphasizes an all-powerful "I" which serves as narrator, not limited to or confused with the person of the historical Walt Whitman. The persona described has transcended the conventional boundaries of self:

I celebrate myself, and sing myself,  
And what I assume you shall assume,  
For every atom belonging to me as good belongs to you....

I pass death with the dying and birth with the new-wash'd babe,  
and am not contain'd between my hat and boots,  
And peruse manifold objects, no two alike and every one good,  
The earth good and the stars good, and their adjuncts all good.  
I am not an earth nor an adjunct of an earth,  
I am the mate and companion of people, all just as immortal and fathomless as myself,  
(They do not know how immortal, but I know.)...

The past and present wilt -- I have fill'd them, emptied them,

And proceed to fill my next fold of the future....

Do I contradict myself?

Very well then I contradict myself,

(I am large, I contain multitudes.)

Other allusions to this perspective include the following:

- Madeline Hartmann (*The Man Behind the Miracle*, Lost Coast Press, 2000: I am a poem of God. A poem gives existence to nothing; it is the music of thought, it reveals the loveliness of nature... (p. 219)
- Kanaan (*Literati: a revolution of living*, iUniverse, 2003): Remember I am a poem, you are a poem too, and in this inevitability there is salvation at last... (p.120).
- Cris Janoff (*Coins Into the Fountain: A Book of Songs*, iUniverse, 2003): Find My Way Home / I am the sun, / but I've forgotten how to shine / I am a poem / but I just can't rhyme (p. 172)
- Peter Gizzi (*The Outernationale*, Wesleyan University Press, 2008):

When twigs scratching  
join to an idea of time  
to a picture of being

Like to be beside and becoming  
to be another and oneself  
to be complete inside the poem

To be oneself becoming a poem (p. 60)

- Larry Gaines (*I Am a Poem*, Carry On, The League, 62-65, 1982):

I am a poem.

I am yours to have and to hold.

Accept me in the form I come

And I will become what you'd have me be. (p. 43)

- Derek Walcott (*The Gulf*, 12), as cited by Patricia Ismond (*Abandoning Dead Metaphors: the Caribbean phase of Derek Walcott's poetry*, University of the West Indies Press, 2001):

Resisting poetry I am becoming a poem.

O lolling Orphic head silently howling

my own head rises from its surf of cloud

Various authors have commented on "being a poem". A radically contrasting perspective is noted by Jong S. Jun (*Rethinking Administrative Theory: the challenge of the new century*, Greenwood Publishing Group, 2002):

I noted that there seems to be an increasing acceptance of the view that human identity is socially produced. [Jacques] Lacan certainly appreciated this perspective -- as in his oft-quoted pronouncement "I am not a poet. I am a poem being written" (p. 15)

Harold Kaplan (*Poetry, Politics, and Culture: argument in the work of Eliot, Pound, Stevens and Williams*, 2006):

The distinction between Saying and Said is fundamental -- and the issue can simply be put that poetry... brings them together... Insofar as the ethical contact with the other involves my "turning myself into a sign" signifying the "donation of the sign", that is, the donation of myself, [Emmanuel] Levinas implies both that I *am* a poem (in the ethical sense) and that the poem is I, when he depicts poetry in ethical terms as "Saying without said"... In this rather convoluted discussion... Ambiguity will always remain in the effort "to attain a pre-linguistic, pre-logical, ethical level of signification" an effort that becomes the shared responsibility of the reader. (pp. 270-271)

Heward Wilkinson (*The Muse as Therapist: a new poetic paradigm for psychotherapy*, 2009):

A poem, in sum, is the manifestation of a *person*, and, conversely, a person's self-expression, and total intentionality, reaches towards their "becoming a poem". *A poem is a paradigm of enacted intentionality*. To transcend the concrete and the linear, the goal of the narrative psychotherapies, at any rate, is by its nature to enter the realm of poetry, of totality and infinity, where meaning becomes infinite, and infinitely cross connected. *Poetry is therapy; therapy is poetry*. (p. 24) [emphasis in original]

The cognitive capacity to be a poem or a song is to be contrasted with that of science in which "being a theory" or "being a hypothesis" is less meaningful. The Canadian artist Michael Snow asserted: *I don't need a theory, I am a theory*. Might Descartes have said: *I theorize, therefore I am?* (cf. John Piippo, *The Evolutionary Function of Theorizing*, 2008). Over-identification with a model -- "being a

model" -- could however be a theme of credible criticism, as the following suggests.

### The Hazards of System Building

Matthew Melko, System Builder

1. You identify with your system. It cost you blood to build it, and if it is attacked, it is your blood that is being shed.
2. You cannot tolerate tentativeness, suspension of judgment, or anything that does not fit the system.
3. You cannot apprehend anyone else's system unless it supports yours.
4. You believe that other systems are based on selected data.
5. Commitment to systems other than your own is fanaticism.
6. You come to believe that your system entitles you to proprietorship of the entities within it.
7. Since humour involves incongruity and your system explains all seeming incongruities, you lose your sense of humour.
8. You lose your humility.
9. You accept all these points -- insofar as they apply to builders of other systems.
10. So do I. (P.S. I hope I believe in the cult of fallibility)

Offered to participants at the Foundation for Integrative Education Conference, Oswego, 1969;  
reproduced in *Main Currents in Modern Thought*, vol. 269 no. 2

## Transcending both scientific and poetic comprehension of multiverse

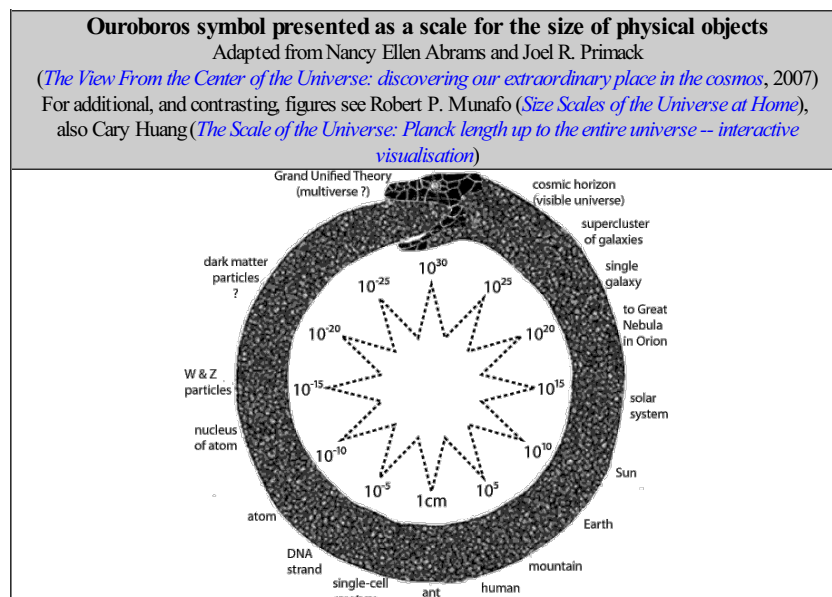
The concern is then the identification of clues to transcending the constraints of the languages of poetry and science -- recognizing that this transcendence may take the form of an intertwining or mutual entanglement (*In Quest of Mnemonic Catalysts -- for comprehension of complex psychosocial dynamics*, 2007).

**Poetic synthesis:** The articulations above with respect to "being a poem" all take the form of essentially descriptive assertions of cognitive modes which one is free to emulate -- if their experiential meaning can be comprehended. They are reminiscent of "death poems", "last lectures", mottos and slogans in presenting a fundamental cognitive synthesis which may be embodied to a degree. As with comprehension of the theories of science, notably any Theory of Everything, the nature of that cognitive embodiment is necessarily as elusive as the assertions are allusive. Such an insight may be enshrined in a tombstone inscription, in a family motto, in a corporate slogan -- or even an advertising jingle.

Final death poems are written near the time of one's own death according to the tradition in a number of cultures, especially by literate people of spiritual persuasion -- as with those in *haiku* form in Japan (as *jisei*). Corresponding to this effort of integrative cognitive embodiment is the newly emergent academic tradition of a "Last Lecture Series," in which distinguished professors are asked to think deeply about what matters to them and to give hypothetical final talks (cf. Randy Pausch with Jeffrey Zaslow, *The Last Lecture*, 2008; *10 Inspiring Last Lectures and Commencement Speeches Everyone Should Watch*, 2008). For the audience, the question to be mulled is: *What wisdom would we impart to the world if we knew it was our last chance?* Related syntheses are evident in epilogues to a life, as with that of Henry Sewell Stokes (*Memories: a life's epilogue* [in verse], 1879).

Both science and poetry necessarily have their limitations -- especially at this time. As modes of communication they are constrained by their style and how indulgence in it may or not be appreciated. In particular they are constrained by the sense in which they purport to inform and inspire others who may neither wish to be informed nor desire to be the subject of that intention. **People way well be averse to communication which takes the form of explanation -- taking them out of themselves and away from their psychic centre of gravity** -- however much this may be understood by others as being "for their own good".

**Synthesis from the perspective of physicists:** How then to engage with the following explanations by physicists?



As a theoretical physicist, Chris Clarke (*Weaving the Cosmos: science, religion and ecology*, 2010) comments on the above adaptation of the traditional image of the **Ouroboros** by Joel Primack to depict objects of steadily increasing size from the very smallest to the cosmos

as a whole. Necessarily extending to the multiverse, as further developed by mathematical astrophysicist Bernard Carr (*The Anthropic Principle Revisited*, 2007), the symbol offers a means of holding the sense of observer-participancy presented by astrophysicist John Wheeler -- namely the sense in which the Universe is observing itself (cf. Brian D. Josephson, *Biological Observer-Participation and Wheeler's 'Law without Law'*, 2011). For Wheeler, information is fundamental to the physics of the universe (cf. John Wheeler, *At Home in the Universe*, American Institute of Physics, 1994).

Clarke notes that living organisms occupy the middle of this scale mapped onto the Ouroboros -- opposite that representing total unity, where the head grasps the tail. As he indicates:

So as we move in our mind from its central position, we move away from the living and into the progressively more Other. Until we finally reach, in one direction, the entire cosmos, and in the other direction, the most fundamental level of matter.... In terms of being... this is the point where pure being is emptied of all its qualities, so far from our rational concepts as to be beyond words, accessible only by mystical intuition. This being overflows into all existence, at all scales.

One vital understanding in all this is the way there is no sudden leap from the rational and scientific into the non-rational and mystical. Rather, these two ways of knowing are complementary to each other at each length scale, each requiring the other in order to make sense. But as we pass, in either direction, towards the serpent's head and tail, so the verbal recedes in significance. It is replaced, not only by the intuitive... but also by the mathematical, being detached and abstracted from our concrete words while remaining totally rational, is in a position to mediate between the conceptual and the intuitive. (p. 92-3)

The challenge of engagement with such an explanation is explained further by Alexei V. Nesteruk (*Cosmology at the Crossroads of the Natural and Human Sciences: is demarcation possible?*):

In spite of a common presumption that cosmology is a natural science, the specificity of its alleged subject matter, that is the universe as a whole, makes cosmology fundamentally different from other natural sciences. The reason is that in cosmology the subject of cosmological research and its "object" are in a certain sense inseparable. Any study of the universe involves two opposite perspectives which can be described as "a-cosmic" and "cosmic", egocentric and non-egocentric. Cosmology involves two languages, namely that of physical causality (pertaining to the natural sciences) and that of intentionality (pertaining to the human sciences). On the one hand the universe can be seen as a product of discursive reason, that is as an abstract "physical" entity unfolding in space and time. On the other hand the universe can be experienced through our participation in, or communion with the world understood as the natural context of living beings. This dichotomy between reason and experience, abstract construction and concrete participation, originates in the essence of human persons understood as unities of the corporeal and spiritual. On account of this dichotomy it is hard to set up a strict line of demarcation between the elements of the human and the natural sciences in cosmology. This confirms the intuition that any realistic world view is incomplete without a knowledge of what it means to exist as a human being. Conversely it is likewise impossible to understand human existence without considering its natural setting, that is the universe. We conclude that anthropology is incomplete without cosmology and vice versa.

**Challenge for the individual:** The question may then be rather how an individual seeks to engage with possibility and potential -- however it may appear or be presented. This may indeed involve a degree of benefit from the output of both science and poetry. The process may notably be characterized by paradox in unforeseen ways. It may benefit from forms of elegance which are an inspiration to both -- despite their extreme differences. It may necessarily challenge conventional understandings of the "mystical intuition" to which Clarke refers above, however these are articulated.

The question here is then what it is useful to explore in relation to such a possibility, and how -- inspired by the imaginative explorations of science and the intimate implications of poetry. There is also the irony that radical rethinking of experiential conscious engagement is potentially characteristic of both.

One approach is to consider possible clues in a playful spirit -- whether from science or poetry -- and given its intimate relationship to the elegance by which they may be variously inspired (*Enacting Transformative Integral Thinking through Playful Elegance: a symposium at the End of the Universe?* 2010). This may extend to humour (*Humour and Play-Fullness: essential integrative processes in governance, religion and transdisciplinarity*, 2005). Extensive use may be made of metaphor, as separately argued (*Metaphors as Transdisciplinary Vehicles of the Future*, 1991).

As a poet, Stephanie Strickland *Quantum Poetics: Six Thoughts*, 2007) presents the major inspirations from physics for her as being:

1. the discovery or refinement of new time dimensions, from macroscopic "world lines" to engagements at the periphery of attention to "curled up" hidden possibilities;
2. privileging what I call a stenographic paradigm for interaction: "moving through me as I move";
3. cultivation of an oscillatory or flickering kind of attention, directed not only to different complements but also to different emergent levels as we have learned to understand these in dynamic systems;
4. thinking beyond oscillation to superposition;
5. remolding our sensorium, our neuro-cognitive capabilities, through these works; and finally
6. as sense of the importance of the practice of translation, understood as encompassing acts of transduction, transposition, transliteration, transcription, transclusion, and the transformation we call morphing.

**Threads, lines and strings:** One fruitful approach is through the metaphorical use of thread and equally familiar notions. This is clearly central to the "string theory" of physics -- elaborated into "superstring theory". Thread is however also widely used in relation to discussion and thought -- "threaded discourse" on the web, and "losing the thread" in discussion. The related process of weaving also

merits metaphorical consideration in the light of "superstring" theory (cf. *Interweaving Thematic Threads and Learning Pathways: noonautics, magic carpets and widdomes*, 2010; *Magic Carpets as Psychoactive System Diagrams*, 2010; *Energy Patterns in Conferences: weaving patterns of information as a context for higher levels of integration*, 1988; *The Future of Comprehension: conceptual birdcages and functional basket-weaving*, 1980). As noted above, the metaphor has been used by physicist Chris Clarke (*Weaving the Cosmos: science, religion and ecology*, 2010).

Use of "line" also merits consideration, especially through the manner in which figures in a "line of argument", a line in a verse of a poem or in the lyric of a song, "dropping someone a line", a "line of credit", and a wide range of notions of connectivity, most notably in networks. As in poetry, a storyline is understood as the **narrative plot of a story**. In this context, the **narrative threads** experienced by different characters articulate the world view of the participating characters cognizant of their piece of the whole -- with each thread woven together by the writer to create a work.

The use of "line" in engaging (romantic) discourse is particularly intriguing -- notably in the idiomatic use of "stringing someone a line". However "line stringing" may be of considerable significance to power lines. Especially as in poetry, however, the concern is how lines are configured or composed to form larger complexes of meaning. Their consideration may be partly inspired by more complex geometrical forms (cf. *Engaging with Globality -- through cognitive lines, circlets, crowns or holes*, 2009). Music may be generated from "string instruments" -- of which a poem could even be considered one form.

Potential pointers are offered by **Omar Khayyam**, renowned for both his poetry and mathematics (*Implicit possibilities of synthesis: Omar Khayyam*, 2011). Coming from a family of tent makers, he offers a line of verse explaining that he had *stitched the tents of science*. Separately, in relation to current preoccupation with **membrane theory** (M-theory) by astrophysics, the question is raised as to the influence of his understanding of the geometry of tents, and his preoccupation with "nothing", as to whether his poetry pointed to intuitions of current significance (*Global Brane Comprehension Enabling a Higher Dimensional Big Tent? Strategic implication in encompassing nothing and coming to naught*, 2011):

*And if the Wine you drink, the Lip you press,  
End in the Nothing all Things end in -- Yes --  
Then fancy while Thou art, Thou art but what  
Thou shalt be -- Nothing -- Thou shalt not be less.*

Threads and lines are notably celebrated in myth, as with the ball of thread enabling **Ariadne** to find her way out of the labyrinth -- surely a question for current global governance. Of some relevance to life in a multiverse is the use **Ariadne's thread in logic** -- as the solving of a problem with multiple apparent means of proceeding. Held to be of considerable significance in cultures of the past were the Fates -- the **Moirai** of Greece, the **Parcae** of Rome -- who controlled the metaphorical thread of life of every mortal and immortal from birth to death.

These various uses of thread and line highlight the sense that for many it is not a case of explaining what "is" but rather of selecting threads from which to construct a pattern which is personally meaningful. This can be framed as a cognitive garb, an art form with which one resonates, or an enactive self-image. It has the implication of engendering one's own universe, implying it or participating mysteriously in it through inexplicable forms of entanglement.

In contrast to the question raised from a cognitive psychology perspective by **George Lakoff** and **Rafael Núñez** (*Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2000), the complementary question might be asked as to "where threads come from". In that respect the sociopolitical engagement of **Mahatma Gandhi** with respect to **spinning yarn on a handloom**, from home grown flax, merits considerable reflection (cf. *Warp and Weft: Governance through Alternation - world governance as a Gandhian challenge for the individual*, 2002). The latter was produced to complement current concerns with respect to "spin" (*Spin and Counter-spin: governance through terrorism*, 2002). Is a cognitive "universe" to be compared to a spun cocoon -- whether for science or an individual.

**Associations, correspondences and resonances:** The coherence and memorability of a poem is partially ensured by the pattern of associations between the elements of its structure. This is most obviously evident in rhyme, often reinforced by a specific metrical pattern. Together these may combine to give a sense of recurrence through which successive phases are recognizably related within a larger whole. This pattern is evident in song rounds, possibly reinforced by a choral line. The pattern may be recognizably circular or have a spiral form.

Within such a context an important contribution to coherence may be achieved through **correspondences**, variously significant to both the sciences and the arts (*Theories of Correspondences -- and potential equivalences between them in correlative thinking*, 2007). These extend into a sense of complementarity, again variously appreciated in the sciences and the arts. In the case of the arts, especially through dramatic development of a plot -- as in an epic -- this can be appreciated in the complementarity of roles. In music it is appreciated through the use of consonance and dissonance in the expression of harmony. Use of these devices reinforces harmony and elicits cognitive engagement.

Although these forms of connectivity may be somewhat subtle, they tend to be readily recognized. The connectivity associated with what are termed resonances is more subtle however -- and for that reason may well be contested. Resonance is commonly recognized between people and with respect to places -- typically using slang variants of "vibration", as with "good vibes" and their relation to biomusicological **entrainment**. Associated manifestations of yet subtler psychosocial phenomena, described as resonance, tend to be highly controversial when explored from a scientific perspective, as has been evident in the response to the courageous work on **morphic resonance** of **Rupert Sheldrake** (*A New Science of Life: the hypothesis of morphic resonance*, 1982).

The challenge for science in recognizing such resonance is all the more astonishing in that life itself, as based on organic molecules, is

fundamentally dependent on the subtlety of the [resonance](#) between carbon atoms (in the benzene configuration). It might well be asked whether analogous resonance has yet to be recognized between cognitive modalities and their organizational manifestations (*Patterns of Alternation: cycles of dissonance and resonance*, 1995).

Especially interesting is the capacity to recognize "justice", as the appropriate outcome of a narrative plot. This pattern is unrecognizable to science, possibly restricting its attention to "goodness of fit". However it has been asserted that physicists are more easily swayed by elegance than by "metaphysics". As articulated by [Paul Dirac](#):

... it is more important to have beauty in one's equations than to have them fit experiment.... It seems that if one is working from the point of view of getting beauty in one's equations, and if one has really a sound insight, one is on a sure line of progress. If there is not complete agreement between the results of one's work and experiment, one should not allow oneself to be too discouraged, because the discrepancy may well be due to minor features that are not properly taken into account and that will get cleared up with further developments of the theory. That is how quantum mechanics was discovered. (*The Evolution of the Physicist's Picture of Nature*, *Scientific American* 208, 1963)

Certainly, the final acceptance of Einstein's quantum theory of light seems to have resulted as much from the strong aesthetic appeal of his conceptualization as from its explanation of the photoelectric effect.

**"Versing"**: Attention has been drawn above to the use of "verse" in a poem as well as -- ironically -- in universe and multiverse. Separately this resulted in consideration of the implications of *prefixing "verse" as indication of conversation potential* (*Transforming the Art of Conversation: conversing as the transformative science of development*, 2012). Examples included converse, inverse, obverse, diverse, reverse, subverse, adverse and metaverse. Each of these has both geometrical implications (for science, notably with respect to the movement of light) and transformative implications (for poetry, or embodied in dance, or expressed in jazz). Of relevance is the question as to when greater diversity (essential to viability) renders any unifying principle of the "universe" unrecognizable.

These concerns led to consideration of *Transformative conversation in a multiverse* as well *Proposed universes and their conversation potential* -- with the implication that distinct (cognitive) universes might be usefully understood in terms of different "languages". Given the metaphors of transformation suggested by the contrasting prefixes applicable to "verse", this raised the question of the nature of *Transformative conversation in the light of interwoven metaphors*. Provocatively the question was raised regarding the possible *Complementarity of university and conversity*. Of relevance to the following argument was consideration of *Conversing with "oneself"*.

**"Versity of life"**: The manner in which learning is fundamental to engagement with the information fundamental to any cognitive "universe" is highlighted by the integrative insight into the "university of life" -- a [lifelong learning](#) process. This raises the question as to how "verses" are to be recognized within a life, as explored by [Mary Catherine Bateson](#) (*Composing a Life*, 1990; *Composing a Further Life: the Age of Active Wisdom*, 2010) which she adapted to *Composing a Conversation* (in an interview with the Ikeda Center for Peace, Learning and Dialogue).

Provocatively it might then be asked what is to be learned, and how, from applications of other prefixes to "versity": multiversity of life, conversity of life, adversity of life, metaversity of life, and the like.

If university celebrates the universe (of knowledge) might a conversity celebrate the challenge of conversation inhibiting diversity, multiversity and metaversity.

**Disciplines as cognitive "versions"**: Is there then a way of "re-cognizing" the disciplines of the sciences (and arts) as a variety of "verses" -- as "cognitive versions" -- through which reality is apprehended by the human mind?

Given the role of [metre in poetry](#) and [metre in music](#), it is curious that many disciplines focus on the elaboration of a "metric" -- of which some are beyond the capacity of the ordinary human mind, as illustrated by the recent financial crisis (cf. *Uncritical Strategic Dependence on Little-known Metrics: the Gaussian Copula, the Kaya Identity, and what else?* 2009)

What might then be the thread or line offering continuity or complementarity between the disciplines -- in celebration of some underlying coherence as yet to be discovered?

**Imagination**: As noted in the annex to this document, the challenge in a society in which imagination is widely appreciated is who is to subscribe to whose imagination -- and whose imagination is to be deprecated by whom? For Mario Bunge (*Parallel Universes? Digital Physics?* In: *Evaluating Philosophies, Boston Studies in the Philosophy and History of Science*, 295, 2012, Part 3, pp. 151-157):

Every original idea is imaginative, because only imagination can trigger creativity. This is why imagination is just as essential in science and technology as in the arts and humanities. The difference between these two pairs of fields is that in science and technology imagination is disciplined rather than free. What motivates such discipline is the objective truth requirement.

This highlights the issue of "objectivity" -- and for whom? The quotation is complemented by that of Arjun Appadurai (*Disjunctive and Difference in the Global Cultural Economy, Public Culture*, Spring 1990):

An important fact of the world we live in today is that many persons on the globe live in such imagined 'worlds' and not just in imagined communities, and thus are able to contest and sometimes even subvert the 'imagined worlds' of the official mind and of the entrepreneurial mentality that surround them

Despite acknowledging the role of imagination in both the sciences and the arts, it is clear that little can be meaningfully said as to what

imagination "is". **What role does imagination play in a multiverse? How does it fit into the processes conceived by physicists?** And yet both scientists and artists would claim intimate engagement with imaginative processes.

Imagination is clearly fundamental to the life of any individual -- especially in envisaging future possibility. It is through imagination that people create the world within which they live, as separately argued (*Imaginal Education: game playing, science fiction, language, art and world-making*, 2003). Many are obliged to live imaginatively between worlds -- suggesting an implicit understanding of communication within the multiverse (*Living as an Imaginal Bridge between Worlds: global implications of "betwixt and between" and liminality*, 2011).

Many call for "more imaginative" approaches to the crises of the times and the possibilities they represent (cf. *Imagining the Real Challenge and Realizing the Imaginal Pathway of Sustainable Transformation*, 2007). Irrespective of claims for collective strategic initiatives regarding the future, could many find it more feasible and appropriate to "re-imagine" the present, as separately argued (*Engendering 2052 through Re-imagining the Present: review of 2052: a Global Forecast for the Next Forty Years as presented to the Club of Rome*, 2012).

**Paradox:** Science rejoices in the exploration of logical paradoxes, most notably with respect to the "coherent" explanations offered by fundamental physics. Individuals are frequently confronted by paradox in their daily lives. Poetry and music are widely employed to engage fruitfully with such paradox and sustain a sense of coherence despite appearances.

The more fundamental paradox may be associated with the nature of the "marriage" between the representation of paradoxes by science, notably as explained through the forms of topology, and their inploration through poetry. Relevant to comprehension of the paradoxical marriage -- the *mysterium conjunctionis* of Carl Jung -- is the work of Douglas Hofstadter (*I Am a Strange Loop*, 2007; Gödel, Escher, Bach: *an Eternal Golden Braid*, 1973) and that of Steven M. Rosen (*Topologies of the Flesh: a multidimensional exploration of the lifeworld*, 2006; *The Self-evolving Cosmos: a phenomenological approach to nature's unity-in-diversity*, 2008).

## Explanation vs. Inplation: multiversal embodiment through the Ouroboros

The difficulty with the argument above is that it takes the form of lengthy "explanation" at a time when there is "re-cognition" of the need for "inplation" -- or possibly "implanation". Rather than reference to the incomprehensible beginning and endings of spacetime, there is a fundamental, and urgent, need for meaning in the here and now. **"Explanation" effectively takes people out of the plane of the reality in which they live without ensuring they are nourished by the perspectives offered.** "Inplation" could be understood as a necessary complement enabling people to live creatively in new and more nourishing ways -- centered in the here and now. Explanation does not leave space for future creativity. It is resistant to it but cannot be "future proofed" against it, as is so readily assumed.

"Explanation" has most unfortunate sociopolitical implications in that it is typically presented authoritatively, most notably as indicated by the *Ex Cathedra* statements associated with papal infallibility. With the body held to be a temple of the spirit, "re-cognition" by the individual of "*In Cathedra*" insights merits exploration. The use of "ex" also has implications of corresponding to insights of the past, when there is increasingly a felt need for the insights of the moment. The contrast can be considered to have been most usefully articulated by the quantum physicist David Bohm in his innovative work on *Wholeness and the Implicate Order* (1980) -- with explanation and inplation then to be associated with his use of "explicate" and "implicate".

Explanation does however offer a rich variety of patterns which can be used to nourish the imagination essential to fruitful integrative inplation.

**Through the Ouroboros:** It is clear from the sources cited above that the cyclic pattern of the Ouroboros, valued by tradition, offers a holding pattern for the insights of some physicists -- and is even indicative of the imaginative notion of multiverse and participation in it. The value of their articulations is however constrained by the emphasis on "explanation" -- one which one is invited to "look at" and "appreciate". But what then?

Missing is how one engages with it in a spirit of "inplation". How then to trigger a complementary "inplatory process"? How to challenge and transcend the cognitive process of "looking at" an explanation? How to embody the plane? The clues offered above into becoming a poem endeavoured to highlight potential connectivity by evoking imaginative play with "verse" in relation to universe and multiverse -- given that such widespread use is made of "verse" in conversation in the here and now. Metaphor elicits insights into inplation.

The process of "looking at" the Ouroboros can be seen as an explanatory trap whereby it is only considered in the plane -- even as two dimensional. This of course belies the cyclic dynamic associated with it -- along the body of the serpent (a *first order dynamic*) -- whether according to tradition or as recently implied by its use as a mapping device. Nor is attention drawn to any potentially circular dynamic around the serpent's body at each point along its length (a *second order dynamic*). Curiously such explanation avoids mention of the axis through the centre of the circle along which the observer is located. More curiously the Ouroboros takes the form of a zero -- a container for nothing. The mystery of nothing is of course a current preoccupation of physics, whilst having long been a preoccupation in relation to spiritual insight. "Nothing" is also that with which many are now faced in contemplating their socio-economic futures.

Even more intriguing is the implication of the above-mentioned study by Terrence Deacon (*Incomplete Nature: how mind emerged from matter*, 2012). In focusing on the fundamental value of what is "absent" from conventional explanation to the effect that

Basically, it means that our best science -- that collection of theories that presumably comes closest to explaining everything -- does not include this one most defining characteristic of being you and me. In effect, our current "Theory of Everything" implies that we don't exist, except as collections of atoms. So what's missing? **Ironically and enigmatically, something missing is**

missing. (p. 1) [*emphasis added*]

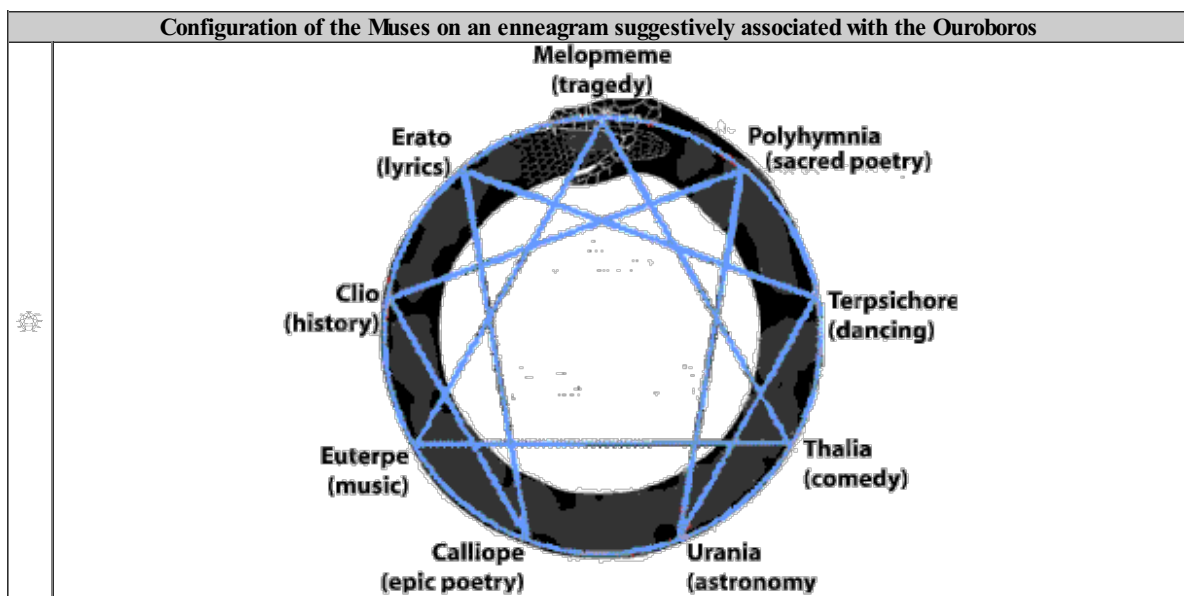
About which Deacon concludes, in referring to the title a book by [Stuart Kauffman](#) (*At Home in the Universe: the search for laws of self-organization and complexity*, 1995):

Despite the power and insights that we have gained from this powerful way of conceiving of the world, it has not helped us to feel "at home in the universe". Even as our scientific tools have given us mastery over so much of the physical world around and within us, they have at the same time alienated us from these same realms. **It is time to find our way home.** (p. 545) [*emphasis added*]

It is in this sense that the empty central portion of the Ouroboros constitutes a form of neglected invitation to an "inplanatory process" -- effectively "through" the plane of the Ouroboros as presented. Going "through" -- along the axis invisible in the two dimensional representation -- is reminiscent of folk tales relating to stepping paradoxically and counter-intuitively "into" a mirror, namely through the "looking glass" (*Stepping into, or through, the Mirror: embodying alternative scenario patterns*, 2008).

One classic tale, that has long nourished imagination, is that of [Lewis Carroll](#) (*Through the Looking-Glass, and What Alice Found There*, 1871). The metaphor has been used in physical commentary (Tony Hey and Patrick Walters, *Einstein's Mirror*, 1997). Extensive use is of course made of the mirror metaphor in philosophical and spiritual discourse (cf. Elizabeth Reninger, *Fun With Mirrors: images of awakened mind -- mirror metaphors and the mind of Tao*). The image of the Ouroboros could then be fruitfully understood as framing *The Gateless Gate* -- the theme of a famed collection of 48 Zen koans (cf. *Configuring a Set of Zen Koan as a Wisdom Container: formatting the Gateless Gate for Twitter*, 2012).

**Musing through the mirror with the aid of the Muses:** Clearly the arts associated with the [Muses](#), as valued in the Greek and Roman civilizations, merit consideration as "gatekeepers" of the cognitive mirror. They are the personification of knowledge and the arts and the associated inspiration for literature, and science -- now celebrated in the role of "museums". The role of poetry is clearly recognized by them and related to that of astronomy -- surprisingly. Exploratively ("inploratively"?) they are configured below by attributing them, arbitrarily, to the classic form of the [enneagram](#) as discussed separately (*Warp and Weft of Future Governance: ninefold interweaving of incommensurable threads of discourse*, 2010). The pattern on the left is then superimposed on the Ouroboros in the image on the right



The paradoxical mirroring of a participatory multiverse -- without and within -- is appropriately noted by the title of a work by [Joseph Campbell](#) *The Inner Reaches of Outer Space: metaphor as myth and as religion*, 1986). However it is appropriate to note the pioneering work of [Marsilio Ficino](#) of half a millennium ago in writing what amounts to the imaginative reframing of everyday life: *De Vita Coelitus Comparanda* -- as described by Thomas Moore (*The Planets Within: the astrological psychology of Marsilio Ficino*, 1990), and separately discussed (*Composing the Present Moment: celebrating the insights of Marsilio Ficino interpreted by Thomas Moore*, 2001). The above argument follows from an earlier speculation (*Being the Universe: a Metaphoric Frontier -- co-existent immanence of evolutionary phases*, 1999).

Following the above-mentioned influential statement of Descartes, *I think, therefore I am*, it might be asked whether a richer range of interrelated possibilities could be configured -- perhaps inspired by the set of Muses. These might include:

- I versify, therefore I am (or "sing")
- I hypothesize, therefore I am
- I imagine, therefore I am
- I question, therefore I am
- I speculate, therefore I am (or "reflect")
- I pontificate, therefore I am (or "profess")
- I play, therefore I am (or "joke")

- I criticize, therefore I am (or "deny")
- I act, therefore I am

**Strange attraction and the cognitive implications of sex:** Configured as above, the Muses could also be understood as midwives in a cognitive enabling process. However, in the spirit of the argument of Deacon, what is missing is "sex" -- in which midwifery is intimately implicated. Curiously sexual dynamics, and their fundamental importance for individuals and society, are not embodied in the explanations of physics and are seemingly irrelevant to the "observer" -- irrespective of any stress on "observer participation" in the universe and the anthropic principle.

The role of a muse has long been recognized as a vital catalyst in the processes of the imagination -- most notably by poets (*Daimon, Djinn, Muse and Duende: variations on a timeless experience*, 2007). As noted by *Wikipedia*, the poet [Robert Graves](#) popularized the concept of the [Muse-poet](#) in modern times. This was based on pre-12th century traditions of the Celtic poets, the tradition of the medieval troubadours who celebrated the concept of [courtly love](#), and the [romantic poets](#):

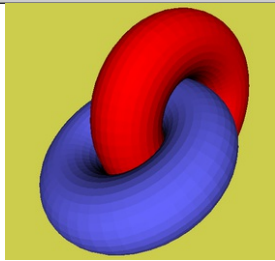
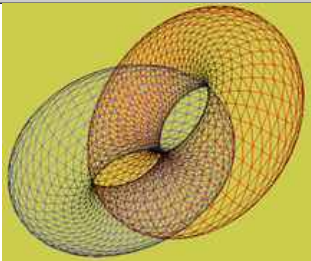
No Muse-poet grows conscious of the Muse except by experience of a woman in whom the Goddess is to some degree resident; just as no Apollonian poet can perform his proper function unless he lives under a monarchy or a quasi-monarchy. A Muse-poet falls in love, absolutely, and his true love is for him the embodiment of the Muse... But the real, perpetually obsessed Muse-poet distinguishes between the Goddess as manifest in the supreme power, glory, wisdom, and love of woman, and the individual woman whom the Goddess may make her instrument... The Goddess abides; and perhaps he will again have knowledge of her through his experience of another woman... (*The White Goddess, a historical grammar of poetic myth*, 1948)

Given the unprecedented consequences of sexual dynamics in relation to the current pressure on resources from overpopulation, it is extraordinary that its role as a strange attractor has not benefitted from the insights of mathematics, despite the implications of various traditions, as discussed separately (*Reframing the Dynamics of Engaging with Otherness: triadic correspondences between Topology, Kama Sutra and I Ching*, 2011). It might be assumed that mathematicians lack both a sense of humour and any sense of the dynamics of the attractors to which they are exposed in daily life -- in contrast to poets and singers. How mathematically complex are the dynamics of pornography, which are such a focus of attention over the web? Those dynamics may well be the focus of realistic simulation in future virtual environments. The implication of such prudery for global governance merit speculative exploration -- or "inploration" (*Global Governance via a Double-breasted Strange Attractor: cognitive implication in a dynamic sexual metaphor*, 2009).

In this light, the challenge of "inploration" through the Ouroboros (as an archetypal serpent) has a fundamentally "sexual" dimension (even "sexy"), appropriately complexified by the sensitivities -- cognitive and otherwise -- highlighted from a feminist perspective. With respect to such a "cosmic orifice", it might even be said that global civilization has collective psychological issues analogous to those to which Freud drew attention -- irrespective of the insights of Jung in relation to the Ouroboros. It is in this sense that the "people" dimension of the recent study by The Royal Society is scientifically irresponsible (cf. *Scientific Gerrymandering of Boundaries of Overpopulation Debate: review of The Royal Society report -- People and the Planet*, 2012). The process cognitively fundamental to inploration is ignored, as discussed in that review (*Formally ignoring a fundamental systemic process: the economy vs. the fucking?*).

**Implication of inploration in toroidal dynamics:** As noted, the Ouroboros itself is necessarily to be understood as implying a third dimension -- as a torus with a circular axis **along** its body with which (a first order) dynamic may be associated. This is distinct from the axis **through** the torus (mentioned above), implying a paradoxical gateway with which the attraction of sexual dynamics may be associated (as a **third order dynamic**). This paradoxical quality is emphasized if the Ouroboros is recognized as being dynamically analogous to the [vortex dynamics](#) of a [smoke ring](#).

Various dynamics of inploration are fruitfully suggested by the dynamics of a torus as indicated above. This reframes the sense in which it is merely a matter of going "through" the gateway. Its paradoxical nature as a mirror calls for self-reflexive dynamics. It can even be argued that it is a matter of intertwined tori, as discussed with respect to the images below (*Comprehension of Requisite Variety for Sustainable Psychosocial Dynamics: transforming a matrix classification onto intertwined tori*, 2006; *Enabling Wisdom Dynamically within Intertwined Tori Requisite: resonance in global knowledge architecture*, 2012).

Screen shots of a dynamic virtual reality model of intertwined tori (click on each variant to access and manipulate in 3D; in the free <a href="#">Cortona VRML viewer</a> , right click for preferences to switch from/to the "wireframe" presentation)		
	<p><b>Red torus</b> has a vortex (smoke ring) dynamic in the model</p> <p><b>Blue torus</b> has a wheel-like dynamic in the model</p>	
VRML animations by <a href="#">Bob Burkhardt</a> .		
As discussed in <i>Comprehension of Requisite Variety for Sustainable Psychosocial Dynamics: transforming a matrix classification onto intertwined tori</i> , 2006		

These toroidal dynamics have implications for governance (*Complexification of Globalization and Toroidal Transformation: topological implications of invagination and gastrulation in embryogenesis*, 2010; *Implication of Toroidal Transformation of the Crown of Thorns: design challenge to enable integrative comprehension of global dynamics*, 2011; *Enabling Governance through the Dynamics of Nature:*

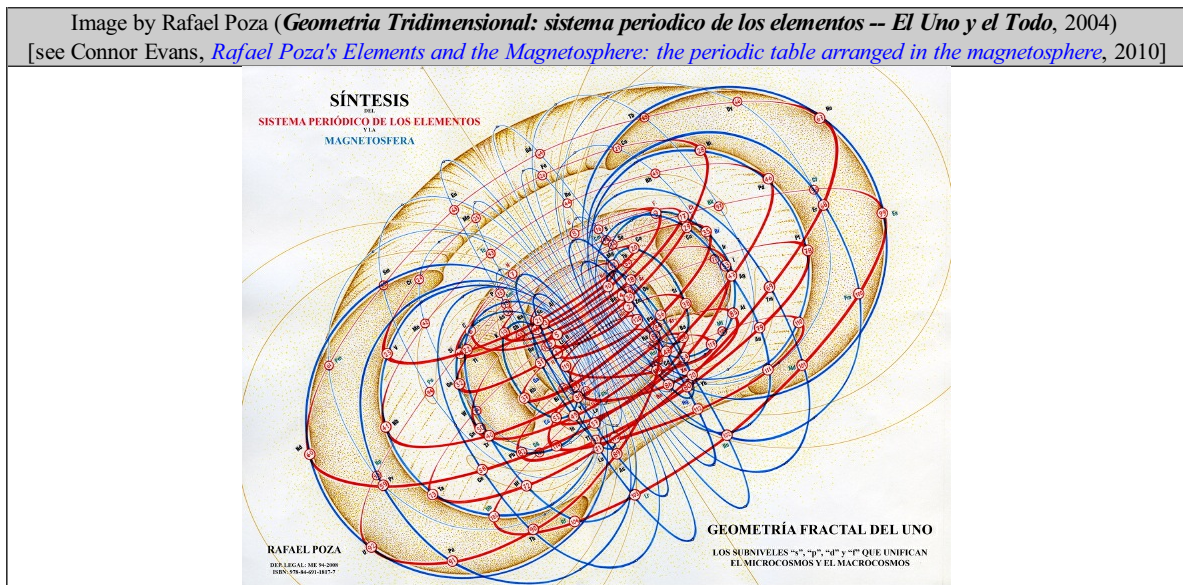
exemplified by cognitive implication of vortices and helicoidal flow, 2010).

An interesting association can be explored between the mirroring offered by the third dimension **through** the Ouroboros and highlighted in the cognitive dimensions of sexual intercourse. This notably features as the so-called mirror test of self-awareness -- or "**mirror self-recognition**". A sense of the implications for identity as experienced is offered by Douglas Hofstadter (*I Am a Strange Loop*, 2007) -- suggesting a collective challenge (*Sustaining a Community of Strange Loops: comprehension and engagement through aesthetic ring transformation*, 2010). The "strangeness" of the loop further suggests that the toroidal Ouroboros is then better understood as embodying a cognitive twist relating "inside" to "outside" as with a Möbius strip.

The challenge of the times might well be articulated in terms of the cognitive capacity for "environmental mirroring", as discussed separately (*Mirror self-recognition and environmental mirroring*) -- possibly in relation to hypothetical engagement with extraterrestrials (*Self-reflective Embodiment of Transdisciplinary Integration (SETI): the universal criterion of species maturity?* 2008).

However, as potential "multiversals", the subtitle of the latter document would call for adaptation. The restrictive limitations of the *Universal Declaration of Human Rights* might similarly suggest a "Multiversal" variant consistent with creative versification (cf. the experimental *Universal Declaration of the Rights of Human Organization*, 1971). The mirroring also has implications for current strategic initiatives (*Consciously Self-reflexive Global Initiatives: Renaissance zones, complex adaptive systems, and third order organizations*, 2007; *Stepping into, or through, the Mirror: embodying alternative scenario patterns*, 2008).

As mentioned in the annex, a case can be made for a periodic ordering of cognitive transformation processes inspired by the pattern of the fundamental integrative achievement of the periodic table of chemical elements (*Towards a Periodic Table of Ways of Knowing -- in the light of metaphors of mathematics*, 2009; *Periodic Pattern of Human Life: the Periodic Table as a metaphor of lifelong learning*, 2009). This possibility can be married with the presentation of that periodic table on a torus in the following remarkable image. Imaginatively associated with the psychosocial implications of the Ouroboros, this offers the tantalizing suggestion that each element -- as a particular mode of organization -- is a form of key or door to an alternative universe. The image as a whole then offers an imaginative representation of a "sexy" multiverse.



Not inconsistently, the above image of course echoes the field structure and wiring associated with **electrical generators** and **electrical motors** -- notably **polyphase systems**. The image also echoes the toroidal design of the most advanced experimental projects of physics -- arguably with fundamental cognitive implications (cf. *Enactivating a Cognitive Fusion Reactor: Imaginal Transformation of Energy Resourcing (ITER-8)*, 2006; *Dynamic Interrelationship of Symbols of Coherent Experiential Representation of Nonduality (DISCERN)*, 2008). The speculative possibilities of the pattern of cognitive transformations in relation to the periodic table is the theme of a separate argument (*Eightfold Configuration of Nested Cycles of Cognitive Transformations: meta-pattern of connectivity through a hypersphere?* 2012).

Any possibility of going "through" the Ouroboros, even paradoxically framed as a Möbius strip, calls for further reflection in the light of its "four-dimensional" equivalent. That is the **Klein bottle**, on which extensive commentary from a cognitive perspective has been offered by Steven Rosen (*Topologies of the Flesh: a multidimensional exploration of the lifeworld*, 2006). This offers a way of considering the cognitive dynamics of the interlocking tori depicted above. The sexual implication is considered separately (*Intercourse with Globality through Enacting a Klein bottle*, 2009).

Any exploration of the form of the Ouroboros, as indicative of more subtle insight, can benefit from understandings of the "twistedness" which can be so readily associated with its serpentine body. The tubular body may then suggest useful complexity if it is held to be like a twisted rope (cf. Edi D Bilimoria, *The Snake and the Rope: problems in Western Science*, 2006; *Raja Rao, The Serpent and the Rope*, 1960). Its "coiling", if not its "**supercoiling**", can be usefully associated with that of DNA, as argued in relation to knowledge by **Jeremy Narby** (*The Cosmic Serpent: DNA and the origins of knowledge*, 1999). It is the cognitive implication which merits special consideration (*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).

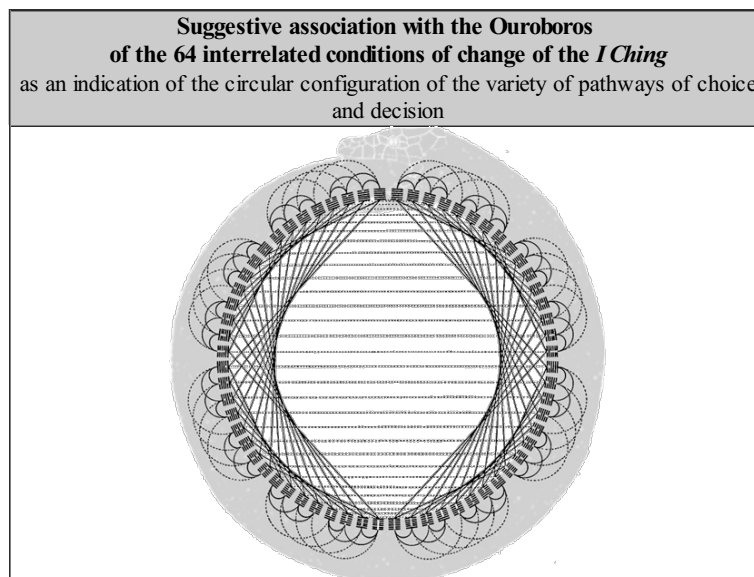
A potentially interesting representation of the Ouroboros is as a 7-coloured [hypersphere](#) which can be rotated through its toroidal centre - offering a comprehensible illustration of such twistedness in 3 dimensions. Its elusive nature might however be associated with the 7-coloured [rainbow](#) -- seldom seen, and typically only as an arc. It has long been valued in the [rainbow mythologies](#) of many cultures. Variants of the Ouroboros may be recognized as the [Rainbow Serpent](#). As a consequence of human perceptual constraints, the rainbow also usefully highlights the participative nature of its "existence" -- as with the Ouroboros.

**Inplanation in decision-making and choice:** Physics now makes much of the manner in which decision is associated with (sinusoidal) [wave function collapse](#) -- highlighted by the famed [thought experiment](#) with [Schrödinger's cat](#). The [many-worlds interpretation](#) is an interpretation of quantum mechanics that asserts the objective reality of the universal wavefunction, but denies the actuality of wavefunction collapse. It implies that all possible alternative histories and futures are real, each representing an actual "world" (or "universe"). In many-worlds, the [subjective appearance](#) of wavefunction collapse is explained by the mechanism of [quantum decoherence](#), which resolves all of the [correlation paradoxes](#) of [quantum theory](#). An explicit challenge to comprehension has been presented most recently by the theoretical physicists [Brian Cox](#) and Jeff Forshaw (*The Quantum Universe: everything that can happen does happen*, 2012).

As noted above, the sense of "many worlds" is clearly an invitation to the imagination of a poetic interpretation of the here and now, future possibilities and might-have-beens (Hugh Everett, *Many Worlds Interpretation and the parallel universe paradox*, *Quantum Art and Poetry*, 14 September 2012; Scott Borger, *The Worlds Within Our World: Margaret Cavendish and James Clerk Maxwell*, *Viewpoints*, 2010). Examples include the poems of: [Margaret Cavendish](#) (*Of Many Worlds in This World*, 1653; [Wilfred Owen](#) (*O World Of Many Worlds*).

Potentially more intriguing is the sense in which the process of decision (and associated imagination) frames and engenders the possibilities and might-have-beens -- as "universes" -- of romantic and sexual attraction. This is indicative of the imaginative entanglement of the intimacy of inplanation, as indicated by the words above of the poet Robert Graves. Rather than the explanation offered by physics (from its own "universe"?) -- regarding some hypothetical, inaccessible other universe -- this pertains to imaginative life as lived in the here and now. It offers engagement with the imaginative distinction between what happened and what might have happened.

A remarkable sense of the array of choices -- or of choice-making possibilities -- is offered by the 64 hexagrams of the *I Ching*, arrayed as a circular pattern (as indicated below) with indications of the pathways between them (cf. *Transformation Metaphors-- derived experimentally from the Chinese Book of Changes (I Ching) for sustainable dialogue, vision, conferencing, policy, network, community and lifestyle*, 1997). In their original form these are notable for the poetic commentary on each -- effectively as "verses" -- replete with metaphor to enable comprehension and memorability. Given the manner in which prefixes can be variously applied to "verse", these each imply a variety of possibilities of transformation, into which optical systems offer some insight. Ironically the *I Ching* could be therefore considered as a form of "*Multiversal Atlas*" or an "*Atlas of the Multiverse*" as it is open to individual experience.



A point to be made in the poetic exploitation of the metaphors of physics relating to multiverse is that this can be considered as "mining", as argued by [Susantha Goonatilake](#) (*Toward a Global Science: mining civilizational knowledge*, 1999) and separately discussed (*Enhancing the Quality of Knowing through Integration of East-West metaphors*, 2000). However, for purposes of inplanation, "mining" can be understood -- playfully -- as cognitively "making mine", appropriating to oneself any useful pattern in the moment (notably when generated with the aid of public funds). This offers an ironic contrast to the conventional academic preoccupation with "intellectual property", with all its poorly explored legal and financial consequences for rendering insight globally inaccessible to others (cf. *Einstein's Implicit Theory of Relativity -- of Cognitive Property? Unexamined influence of patenting procedures*, 2007).

**Transcending conventional spacetime:** Physics now requires extra "dimensions" to ensure the consistency and coherence of its understanding of reality. What is it then possible to understand by "dimension" -- and by whom -- remains a matter of reflection, especially when some fundamental mathematical discoveries (such as the [Monster Group](#)) only "exist" within an incomprehensible space of millions of "dimensions" (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008).

The so-called [Standard Model](#) (with [string theory](#)) requires at least 10 dimensions, namely 6 [additional dimensions](#) to the measurable 3

of space and 1 of time. For physicists, the conflict between observation and theory is resolved by making the unobserved dimensions **compactified**-- however that is to be comprehended.

It is appropriate to note that any views by non-physicists regarding their access to such dimensions is severely deprecated by physicists - in a manner only too reminiscent of religious arrogance. There is however the delightful possibility that the "compactified" dimensions are those to which humans have direct and intimate access through their conscious decision-making -- and are indeed remarkably familiar with them, despite the mysterious (incomprehensible) nature which physics has attributed to them (cf. *Beyond the Standard Model of Universal Awareness: Being Not Even Wrong?* 2010).

The contrast between the 3 dimensions of space and the 6 held to be compactified can be used to clarify the contrast between the "inhuman" insights of physics and the personally meaningful experience for which individuals quest. Curiously the 3 spatial dimensions invite the metaphoric projection explored by cognitive psychologists as fundamental to psychosocial organization and development (George Lakoff and Mark Johnson, *Metaphors We Live By*, 1980). As 3 distinct axes the following projections may be noted:

- "left" and "right", as only too evident in political discourse -- with the further possible associations to sinister and and righteous, respectively
- "up" and "down", so fundamental to development and profitability -- with the possible additional sense of salvation and damnation, respectively
- "forward" and "backward" as being of particular concern to development and change, and notably central to the claims of leaders, politicians and the military, and to accusations against them

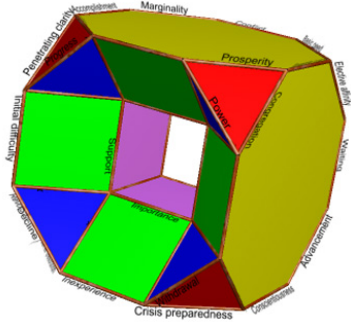
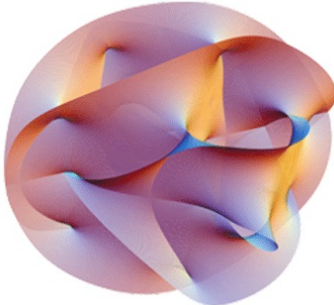
There is the strange possibility that these 6 "directions" -- so fundamental to understanding of psychosocial dynamics and participation in them, despite being unrecognizable by physics -- are those of the compactified 6 dimensions which physics is unable to render personally meaningful. The 6 directions (associated with the 3 dimensions of space) then mirror the 6 compactified, with the time dimension as an appropriately strange bridge between them.

However, time also has two "directions" -- past and future -- then offering a total of 8 "directions", thereby engaging both traditional intuitions regarding the "dimensionality" of experience and research on cognitive limitations (cf. *Representation, Comprehension and Communication of Sets: the role of number*, 1978; *Patterns of Conceptual Integration*, 1984; George Miller, *The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*, 1956).

The dimensionality of the experiential cognitive context offers a further consideration. Rather than being experienced as necessarily 6-fold or 8-fold, its dimensionality may be experientially **variable**. Some dimensions or directions may lack meaning or be considered irrelevant to circumstances. **People may therefore choose to live (if only for a moment or a while) within a context of lower dimensionality** -- exemplified in some cases of deliberate **reductionism**. The implications have been extensively reviewed by mathematician Ron Atkin (*Multidimensional Man: can man live in three dimensions?* 1981), as separately discussed (*Systematic analysis of incommunicability*, 2008). This suggests a sense in which "multiversality" may imply the valued flexibility associated with "versatility" -- typically challenging for institutions (cf. *Alternation between Variable Geometries: a brokership style for the United Nations as a guarantee of its requisite variety*, 1985).

**Comprehensible topology of multiverse?** Equally charming is the sense in which the extra 6 dimensions of spacetime are sometimes conjectured to take the form of a 6-dimensional **Calabi-Yau manifold**. This led to the idea of mirror symmetry, notably associated with so-called **Membrane-theory** (aka M-theory), as noted above in relation to the inspiration of Omar Khayyam (*Global Brane Comprehension Enabling a Higher Dimensional Big Tent? Strategic implication in encompassing nothing and coming to naught*, 2011). Astrophysicist Bernard Carr suggests the sense in which "M-theory" might be explored in terms of "Mind". There is also the suggestive indication that the 6 dimensions might be significantly associated with the poetically-enhanced 6-line coding of the *I Ching* hexagrams indicated above.

Playfully, visual cues to understandings of the multiverse may be further inplored through the contrast between a rendering of the "6-dimensional" Calabi-Yau manifold and a projection of the 64 "verses" of the *I Ching* onto one of the only symmetrical toroidal polyhedra which offers any coherence to their seeming diversity. The polyhedron offers another suggestive relationship between 4-space and 6-space.

Technical "explanation"?	Experiential "inplanation"?
Projection of <i>I Ching</i> hexagram labels (indicative selection) onto the 64-edged drilled truncated cube -- a drilled toroid	Imaginative visual representation of "brane-space" (Calabi-Yau manifold, <a href="#">larger version in Wikipedia</a> , from <i>Scientific American</i> , Nov. 2007) )
	
Related visualizations and commentary are presented in <a href="#">Topological Clues to a Memorable 12-fold Systemic Pattern</a> (2011)	

## Engendering a multiverse through imagining

**Imagination as fundamental to science and art:** The argument above is suggestive of the fundamental nature of the process of imagining. This is usefully highlighted at one extreme by astrophysics and cosmology in exploring hypotheses regarding the nature, shape, multiplicity and origins of the (multi)verse. The variety of their imaginings is indicated by John D. Barrow (*The Book of Universes*, 2012) and by Ruediger Vaas (*Time before Time: classifications of universes in contemporary cosmology, and how to avoid the antinomy of the beginning and eternity of the world*. *Bild.Wiss.*, 2004). At the other extreme are the imaginings of poets, of which examples are offered above. These can be associated with those of the arts more generally.

Stephen Hawking and colleagues ([arxiv.org/abs/1205.3807](https://arxiv.org/abs/1205.3807)) have shown that the universe may have the same surreal geometry as some of art's most mind-boggling images (Lisa Grossman, *Hawking's 'Escher-verse' could be theory of everything*, *New Scientist*, 9 June 2012). Their results rely on a mathematical twist previously considered impossible, namely the use of a **negative cosmological constant** rather than a **positive** one. The new approach provides a description of "all the possible universes that could have been -- including ones in which the solar system never formed, or in which life might have evolved quite differently". Making conventional use of a positive cosmological constant, it had proven impossible to describe universes that were "anything more than clunky approximations to reality." A plethora of universes have now been generated from wave functions with negative cosmological constants.

**Nature of imagination:** The issue might then be the nature of "imagination" and by whom it is to be defined and for whom. Provocatively, how might its nature be imagined? Corresponding to that question, what are "universes" -- whether for cosmologists or poets -- and how might they be imagined elsewhere? Science would readily respond that there is a "logic" to the elaboration of its hypotheses -- an incontrovertible logical consistency readily to be challenged by poets and in many cultures. Poets could well respond in kind. Such "logic" can however be called into question by the fantastically, paradoxical and improbable nature of the imaginings of cosmologists. The imaginings of both can be compared with those of the many religions -- deriving from a contrasting sense of authority, readily contested in its turn, most notably by other religions.

**What matters?** There is a further question, namely what "matters" and how is that to be understood? Ironically the "matter" that matters is most clearly (and imaginatively) defined by astrophysics and is central to their imaginings regarding the nature of any universe, although called into question (in dark matter) by its mysterious relation to energy and even information. What matters to a poet, or to others -- and how is this (imaginatively) determined wherever? The corresponding concern for both extremes is what is "irrelevant" -- and to whom? In this respect of particular interest is the nature and experience of "nothing" -- whether as of current interest to astrophysics or with respect to the experiential despair of the poetically inclined (cf. Sten F. Odenwald, *Patterns in the Void: why nothing is important*, 2002). This framework has been explored separately (*Emerging Significance of Nothing*, 2012; *Configuring the Varieties of Experiential Nothingness*, 2012; *Where There is No Time and Nothing Matters*, 2008; *Import of Nothingness and Emptiness through Happening and Mattering*, 2008).

Evoked in this way, there is a sense common to both cosmology and poetics that universes of meaningful coherence -- a multiverse? -- may be engendered from nothing. More mysterious, and far less evident, is the nature of the engendering process and how that capacity can be enabled or elicited. It is readily suggested that some experience life as on an imaginative flatland -- or may be so perceived by others. For others experience is imbued with subtle complexities -- possibly threatening.

**Varieties of imagination:** Tamar Gendler, in providing a useful overview of the nature of "imagination" for *The Stanford Encyclopedia of Philosophy* (2011), stresses the diversity of understandings precluding any satisfactory taxonomy. This is exemplified by the argument of John H. Simpson (*Varieties of Imagination and Nothingness in the Global Village*, *Canadian Journal of Sociology*, 2003) which focuses on the post 9/11 context.

Gendler cites as the only recent attempt at a somewhat comprehensive inventory of the use of imagination as being that by Leslie Stevenson (*Twelve Conceptions of Imagination*, *British Journal of Aesthetics*, 2003), who enumerates (without claiming exhaustiveness) twelve of "the most influential conceptions of imagination" that can be found in recent discussions in "philosophy of mind, aesthetics, ethics, poetry and... religion":

- ability to think of something that is not presently perceived, but is, was or will be spatio-temporally real.
- ability to think of whatever one acknowledges as possible in the spatio-temporal world.
- liability to think of something which the subject believes to be real, but which is *not* real.
- ability to think of things one conceives of as fictional, as opposed to what one believes to be real, or conceives of as possibly real.
- ability to entertain mental images
- ability to think of (conceive of, or represent) anything at all
- non-rational operations of the mind, that is, those kinds of mental functioning which are explicable in terms of causes rather than reasons.
- ability to form beliefs, on the basis of perception, about public objects in three-dimensional space which can exist unperceived, with spatial parts and temporal duration.
- sensuous component in the appreciation of works of art or objects of natural beauty without classifying them under concepts or thinking of them as practically useful.
- ability to create works of art that encourage such sensuous appreciation.
- ability to appreciate things that are expressive or revelatory of the meaning of human life.
- ability to create works of art that express something deep about the meaning of human life, as opposed to the products of mere fantasy.

**Enabling world-making:** Imagination is especially significant in the sense of "world-making" -- effectively the process whereby a "universe" of meaning is created by an individual or a group -- as discussed separately (*Imaginal Education: game playing, science*

*fiction, language, art and world-making*, 2003).

It is also of considerable significance to strategic insight (*Imagining the Real Challenge and Realizing the Imaginal Pathway of Sustainable Transformation*, 2007; *Engendering 2052 through Re-imagining the Present*, 2012).

**Navigation between alternative realities:** If a multiverse is to be understood as a set or configuration of alternative realities, the possibilities of movement between them can be imaginatively explored -- or "inplored". Science fiction has done much with respect to the first. Other clues are offered with respect to the second, notably from some spiritual disciplines and the tendency to recognize a multiplicity of "heavens" (cf. *Navigating Alternative Conceptual Realities: clues to the dynamics of enacting new paradigms through movement*, 2002).

Such indications challenge the credibility of connectivity fundamental to "transportation" between different cognitive realms, as conventionally understood and separately discussed (*Walking Elven Pathways: enactivating the pattern that connects*, 2006; *Climbing Elven Stairways: DNA as a macroscopic metaphor of polarized psychodynamics*, 2007; *Towards an Astrophysics of the Knowledge Universe: from astronautics to noonautics?*, 2006).

**Imaginative interaction in the moment:** There is a poetical and existential charm associated with the movement of eyes and eye-contact -- repeatedly a focus of romantic literature down the centuries, and now reinforced by the cosmetics and fashion industries. It is fundamental to processes of communication in the moment and enabling emergence of the potential of the future (cf. *Future Generation through Global Conversation: in quest of collective well-being through conversation in the present moment*, 1997). The requirement for eye-contact has been advanced as a (dubious) justification for banning the *burkha* -- in order to be able to "see into a person's soul".

The communication achieved through eye-contact can be seen as intimately related to the inspiration enabled by the Muses through the variety of arts, especially in the playful process of flirtation or that of eliciting respect. Speculatively it may even be "inplored" as a key to the Ouroboros as a "stargate" -- or even as an array of stargates keyed by the hexagrams of the *I Ching* (cf. *People as Stargates: an alternative perspective on human relationships in space-time*, 1996).

## In tune with the infinite?

Without the query, this is the title of a well-known book by [Ralph Waldo Trine](#) (*In Tune with the Infinite: fullness of peace, power and plenty*, 1897). The title helpfully relates the impersonal preoccupation of physicists with a sense of the personal resonances valued in the experience of poetry.

Whether understood in terms of a universe or a multiverse, any engagement with the "infinite" is clearly a challenge -- to which physics has responded with enthusiasm. The explanatory products of their efforts, as argued above, pose a particular challenge of comprehensibility and meaningfulness for those lacking the skills of physicists. As noted, the nature of this challenge invites a degree of playful inploration.

In their efforts to explain the "infinite", physicists are very free with assertive "definitions", despite the lessons of history of ideas. These definitions may be understood as a currently fashionable means of reducing the infinite to forms comprehensible within the currently preferred language of physics -- a process of "de-fining". For those of poetic inspiration this may be regretted as a reduction in precisely that variety to which people may variously respond and by which they may be variously inspired -- perhaps to be understood as the removal of that which is experientially "fine". There is some irony to this in that it is physics which has defined a [fine-structure constant](#) -- a fundamental dimensionless coupling constant characterizing the strength of electromagnetic interaction.

This process of progressive definition towards a Theory of Everything -- whereby everything is being effectively defined -- suggests a cognitive variant of the problematic ["enclosure of the commons"](#). Personal experience is thereby "confined" within a set of "definitions". As implied by the property analogue, such enclosure is reinforced by legally binding restrictions, notably evident as constraints on innovative design (cf. *Considerable Conglomeration of "Cons" of Global Concern*, 2012). Other implications are evident in the process of "development" within those constraints, itself inviting challenge (cf. *Veloping: the Art of Sustaining Significance*, 1997).

Whilst "infinite" is notably suggestive of unending boundlessness in space, the very notion of "boundary" -- as with the "commons" -- is readily challenged. Thus for mathematics the simple sphere is "finite but unbounded". More complex forms may require quite challenging understandings of boundary -- as with the paradoxical Klein bottle, mentioned above. The [shape of the universe](#) is a matter of continuing debate within astrophysics. Such preoccupations invite reflection on how an individual (or group) might understand their own personal cognitive "universe" to be shaped and bounded -- within the limits of their comprehension. How might an individual or group be "finite but unbounded"?

A second connotation is associated with "infinite", namely the sense of an "end" in time. Again astrophysics is as preoccupied with the ["end of the universe"](#) as with its beginning. Religions have long been preoccupied with ["end times"](#). Missing, as discussed below, is whether the insights of physics regarding the infinite have anything meaningful to contribute to any sense of "ending", whether of a civilization, a group, or an individual. Do the sophisticated reflections regarding the shape of the universe, and on the nature of its ending, offer patterns to which people can relate in considering the end of the "universes" in which they are variously involved?

Challenging associations of "in-finity" ( <i>In fine</i> )		
	Science (Physics)	Aesthetics (Poetics)
Fine ( <a href="#">fine</a> , <a href="#">prefine</a> , <a href="#">superfine</a> )	quantitative detail	qualitative pattern
De-fine ( <a href="#">define</a> , <a href="#">misdefine</a> , <a href="#">predefine</a> , <a href="#">redefine</a> ,	precision within context / reduction of	degradation of quality / reduction of

undefine)	variability	variety (?)
Con-fine (confine)	restriction to (explicit) quantitative limits	restriction to (implicit) qualitative limits (?)
Affine (affine, co-affine)	association of finite values with comparable finite quantities, typically linear (formal similarity)	qualitative affinity (kindred, connected, correspondence)
Re-fine (refine, overrefine)	increase in quantitative approximation	increase in qualitative approximation

Do these various associations "converge" in some way "at infinity" -- at an "end" where "everything" is "fine", namely an elusive "heavenly" culmination? Does the articulation of such a possibility itself have problematic implications? (cf. *Paradoxes of Engaging with the Ultimate in any Guise: Living Life Penultimately*, 2012). Does such a convergence call for forms of cognitive "resonance" consistent with the sense of being "in tune" with the infinite in some way? Given the play on "explanation" and "inplanation" above (and the absence of consideration of "exfinity" by physics), there would appear to be a case for recognizing that "infinity" has "internal" implications as much as being "externally" explicit.

## Conclusion

The argument presents the "languages" of science and poetry as complementary modes of knowing -- a cognitively challenging complementarity exemplifying that articulated by C. P. Snow (*The Two Cultures*, 1959). The concerns presented regarding "science" follow from tendencies to **scientism**. Corresponding concerns regarding poetics might be usefully associated with under-recognized tendencies to poeticism.

**Playful vehicles of identity:** The above notes are not intended as an "explanation" but, provocatively, as a complementary "inplanation" - - echoing musings on meaning of personal significance. Use of "notes" is a reminder of the possibility of detecting a hidden harmony, and of the role of the "player". The result is necessarily selective in a complex knowledge universe in which all are subject to information overload and limited expertise. It is to be expected that multiple "rediscoveries of the wheel" are to be a characteristic of the future for those embedded in that space -- despite the efforts to restrict such discovery and learning through the exclusive misappropriation of knowledge as intellectual property.

The argument could be understood as composed of disparate "verses" -- drawn to some degree from different "universes", between which communication and travel are typically problematic. These verses could then be understood as partially configured to form a prose poem -- necessarily clumsy to any observer in quest of explanation, but with degrees of connectivity as an inplanation. The possibility of engaging with such a poem is indicated by the title *Being a Poem in the Making*.

That title offers a way of identifying with the dynamic array of possibilities constituted by the configuration of the 64 decision-making "uni-verses" of the *I Ching* -- between which a complex pattern of potential associative resonances is evident. Borrowing from physics, these could be understood as a waveform of meaningful being -- a dynamic expression of identity. A further thought is the sense in which those 64 "universes" could be compared to a "64-box Schrödinger-cat situation" -- each with "slits" for the passage of light.

**Multiverse of cognitive transformations:** The argument is fundamentally preoccupied with the nature of the inplanation process through which an individual can engage in cultivating nourishing meaning in a chaotic context, as variously highlighted (*Living as an Imaginal Bridge between Worlds: global implications of "betwixt and between" and liminality*, 2011; *Towards the Dynamic Art of Partial Comprehension*, 2012; *Engaging with the Inexplicable, the Incomprehensible and the Unexpected*, 2010). Hence the subtitle: *Engendering a Multiverse through Musing*.

The chaos can be reframed in terms of cosmopolitanism, as argued by Ananta Kumar Giri (*Cosmopolitanism and Beyond: towards a multiverse of transformations*, *Development and Change*, 37, 2006, 6, pp. 1277-1292):

A revival of cosmopolitanism seems to be underway in both discourse and practice. However, much of this revival draws from only one trajectory of cosmopolitanism, and fails to build upon different traditions of cosmopolitan thinking and experimentation. Cosmopolitanization is an ongoing process of critique, creativity and border-crossing which involves transformations in self, culture, society, economy and polity. It requires multi-dimensional processes of self-development, inclusion of the other, and planetary realizations. Against this background, this contribution explores the multiverse of transformations that confront contemporary discourses of cosmopolitanism. It also discusses the issue of cosmopolitan responsibility, noting three major challenges: global justice; cross-species dignity; and dialogue among civilizations, cultures, religions and traditions.

There is the curious possibility, implied by the potential existence of "life" in parallel universes, that all that can be meaningfully communicated between such universes is "patterns" in their most general sense -- whether or not the "aliens" are extraterrestrial (cf. *Communicating with Aliens: the psychological dimension of dialogue*, 2000). Given the pattern of exploitative initiatives of "multinationals" and their efforts to patent genes, this would suggest that aliens from other universes might act primarily so as to acquire "patterns" -- even acting through "multiversals".

**Engaging with time:** In engaging presumptuously with the complexities of the multiverse imagined by physics, the cognitive challenge can be related to that for any individual of engaging meaningfully with the sweep of time and history (cf. *Engaging Macrohistory through*

*the Present Moment*, 2004). This is radically reframed by the paradoxical relationship to imagined finality (*Paradoxes of Engaging with the Ultimate in any Guise: Living Life Penultimately*, 2012).

The argument implies the merit of a poetic epic as a contribution to global sensemaking for the collective. In this sense it is fruitful to note the comment of J. O.Kinnaman (*Studies in Vergil, Theosophical Path Magazine*, 14, 1, 1918, pp. 24-36):

Vergil looks down through history from Aeneas to Augustus; from Augustus up to Aeneas, and he finds it telling one story, breathing one spirit, the spirit that brought Aeneas from Troy to the Tiber's mouth; that consolidated Rome; that subjugated Carthage; in fact, the spirit that made Rome what it was. If the verse quoted... is the keystone to the arch of the *Aeneid*, why did not Vergil write an historical poem? ...

Perhaps there were two reasons why Vergil did not commit himself to historical poetry. First, **there is a lack of unity in history that prevents metrical history from becoming a poem**. The poet is held closely to fact, to the narration of a series of events, and these events, except in treatment of history as philosophy, seem not to be related to a central concept; without this central concept a poem is utterly impossible. Second, the functions of poetry and history are different. Aristotle says that **Poetry tends to express the universal, history the particular**. It is the universal that Vergil wishes to express, but *to express this universal he must draw upon the particular. He must have a central concept around which the details that make for the universal may be grouped. He must see clearly the philosophy of history without projecting it upon the consciousness of the reader; he must be scientific in his treatment without academic erudition; he must appeal to the human side of his readers, arouse and enlist their sympathy*. In short, the task Vergil assigned himself was that of expressing the Roman people; not only that, but the utterance of humanity. The *Aeneid's* interest is not local but universal; it expresses the feelings not of a tribe, people, or nation, but of all civilized humanity. It has been the favorite poem of European races for nearly two thousand years, expressing for them the fountain source of all activity -- love and sorrow. (p. 27) [*emphasis added*]

**"Multiverse" as a fundamental existential question?** This raises the question as to whether preoccupation with "multiverse" now serves as a new kind of (escapist) "container" -- an information analogue to "sustainability" and "sustainable development" -- whose inadequacies have become increasingly apparent. As argued by Timothy W. Luke (*Neither sustainable nor development: reconsidering sustainability in development, Sustainable Development*, 2005) the rhetorical workings of "sustainable development" as an ideological construct in contemporary global society merit challenge. The term is increasingly used as a label to place over modes of existence that are neither sustainable nor developmental -- as "hesitant and multiversal qualities of transformation". Yet, the rhetoric is also now a material culture of being that is created, carried and continued in the everyday practices of design, exchange and production. Might this come to be true of "multiverse" as currently promoted?

The very status of "multiverse" is appropriately challenged by George F. R. Ellis (*The multiverse proposal and the anthropic principle*, 2006):

Why any multiverse at all? Why this one rather than that one? One ends up with a proposition (the multiverse) that cannot be proved correct by scientific methods - belief in its existence is a matter of faith. So one needs to return to the issue of the nature of proof, and philosophical justification of beliefs: - What is an acceptable scientific proof? - What is a reasonable philosophical justification for a belief to be held as true? That is in the end a key philosophic issue in the link between the two, which does help illuminate the difference between science and religion as far as belief structures are concerned.

**World-making through identification with song:** Such arguments take the form of "explanation" for the collective however, when the case made here is for "inplation" for the individual. A very powerful "imploration" of this possibility is offered by the philosopher, Antonio de Nicolas (*Four-dimensional Man: meditations through the Rg Veda*, 1978), using the non-Boolean logic of quantum mechanics of Patrick A. Heelan (*The Logic of Changing Classificatory Frameworks*, 1974). The unique feature of this approach is that it is grounded in tone and the shifting relationships between tone. It is through the pattern of musical tones that the significance of the *Rg Veda* is to be found -- in the light of its integration of knowledge into Sanskrit verse form:

Therefore, from a linguistic and cultural perspective, we have to be aware that we are dealing with a language where tonal and arithmetical relations establish the epistemological invariances... Language grounded in music is grounded thereby on context dependency; any tone can have any possible relation to other tones, and the shift from one tone to another, which alone makes melody possible, is a shift in perspective which the singer himself embodies. Any perspective (tone) must be "sacrificed" for a new one to come into being; the song is a radical activity which requires innovation while maintaining continuity, and the "world" is the creation of the singer, who shares its dimensions with the song. (p. 57)

**Poetic engagement as a "martial art"?** In framing the relationship between the modes of knowing of science and poetics as a complementarity, the intimate complicity of science with development of weapons, and with the inhumanly "hard choices" of governance, has to be recognized -- possibly as being a mysterious necessity. Is it to be expected that identification with poetry-making is also meaningful in the face of the hard choices of the times -- rather than being an escapist indulgence? (cf. *Poetry-making and Policy-making: arranging a marriage between Beauty and the Beast*, 1993).

How relevant is the cognitive framework of the warrior poet tradition -- especially given its role in an area of current strategic instability? (cf. *Poetic Engagement with Afghanistan, Caucasus and Iran: an unexplored strategic opportunity?* 2009). What insights are emerging from poetry slams and from poetic jousting? (*Strategic Jousting through Poetic Wrestling: aesthetic reframing of the clash of civilizations*, 2009). Can "martial arts" be fruitfully reframed? (*Ensuring Strategic Resilience through Haiku Patterns: reframing the*

*scope of the "martial arts" in response to strategic threats*, 2006).

**Death of a multiverse?** The interwoven threads above regarding the "verses" of a poem and the "verses" of physics together offer a culmination through the finality associated with "death". The speculations of astrophysics touch on the nature of the death of the universe -- with implications within a multiversal context.

In addition to the above-mentioned consideration of "death poems", poems are created regarding the nature of death (cf. Winston L. King, *Death Was His Koan: Samurai Zen of Suzuki Shosan*, 1986). The "death of a poem" may be variously addressed, as with that frequently cited by [A. K. Ramanujan](#) (*On The Death of A Poem*): *Images consult one another / a conscience-stricken jury / and come slowly to a sentence* (cf. Taranee Deka, *A Poet with Indian Sensibilities: a deconstructive reading of A.K Ramanujan's poems*, *International Review of Social Sciences and Humanities*, 2012). Or others, anonymously (cf. *The Death of a Poem*, *Death of a Poem*). For Bruce Bond:

I have a hard time mustering excitement in my own mind for the kind of simplifications involved in making statements about nations and religions and the like, though I am indeed attracted to writing political poems -- intriguing largely because it is so difficult to be sharp, immediate, and aware of the poem's and poet's own limitations. The language of literary criticism can be the death of a poem -- since a cold objectification might exacerbate an air of self-conscious sophistication in the context of a poem. Then again, theory can be a rich source material if transfigured in the light of immediate necessities and more fully put under pressure there. (*Incorporating Multiple Disciplines in Your Writing*, *LitBridge*, 18 August 2012)

The **ultimate fate of the universe** is a topic in physical cosmology. This may be framed in terms of a **heat death**, the **Big Crunch**, or an **Omega Point** -- potentially contained within a multiverse, possibly allowing for cyclicity. Physicists have however little that is personally meaningful to say regarding individual death, especially including their own -- and despite personal experience of approaching senility. Controversially, two Fellows of the Royal Society, [William Crookes](#) and [Oliver Lodge](#), considered that the nature of any survival following death of the physical body should be considered as a branch of physics.

It is then at least appropriate for the individual to reflect on the sense in which the experience of personal life is itself a "verse" within a larger ("multiversal") pattern, as some religions would claim. The current renewal in enthusiasm for "**immortality**", and "survival after death", may even be given greater coherence and credibility through further interweaving the speculation of astrophysical explanation and of poetic explanation (cf. The Campaign for Philosophical Freedom, *Where we are at the moment regarding the definitive proof of survival after death*, 2011). Embodying identity within the resonant associations of a "poem" -- as a form of cognitive DNA, intertwining explicit and implicit -- may even prove vital to the aspirations for continuity of identity associated with **mind uploading** (cf. [Randall A. Koene](#), *How to copy a brain*, *New Scientist*, 27 October 2012). The paradoxically interwoven qualities of the "eternal" are then appropriately echoed by the titles of Douglas Hofstadter (*Gödel, Escher, Bach: an Eternal Golden Braid*, 1979) and of Steven M. Rosen (*The Self-evolving Cosmos: a phenomenological approach to nature's unity-in-diversity*, 2008).

**Transdisciplinarity as metaverse:** If, as suggested, "disciplines" as ways of knowing can be fruitfully understood as "verses" or modes of versification, then the challenge of "transdisciplinarity" could be understood as a process of "metaversification" sustaining the cognitive dynamic of a "**metaverse**", as is now imaginatively explored (cf. *Metaphors as Transdisciplinary Vehicles of the Future*, 1991). This contrasts with the cognitive closure implied by aspirations to an ultimate "Theory of Everything" (TOE) or a "Grand Unified Theory" (GUT) -- a closure about which the issues raised by [Hillary Lawson](#) merit consideration (*Closure: a story of everything*, 2001). Fundamental to a metaverse is then the openness to further imaginative versification. This fruitfully reframes the widespread unhealthy cognitive obsession with final achievement of the ultimate, as separately argued (*Paradoxes of Engaging with the Ultimate in any Guise: Living Life Penultimately*, 2012).

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