



# laetus in praesens

Alternative view of segmented documents via Kairos

13th April 2013 | Draft

## Eliciting a Universe of Meaning

within a global information society of fragmenting knowledge and relationships

-- / --

### Introduction

Eliciting meaning of universal significance

Resolving vs. Developing

Eliciting meaningful identity: resolution vs. resolving

Solve et coagulo: neither changing nor resolving?

Pop concert of democracies as a vehicle for meaning?

Dynamic transformation of static reporting of global processes

State sovereignty in a meaningful universe?

Symbolic connotations of sovereignty in a meaningful process

Illicit meaning and "illiciting meaning"?

Mnemonic clues to configuration and containment of meaningful identity

Sustaining a universe of meaning within a questioning process

Eliciting a universe of meaning from nothing through alchemical processes

Geometry of meaning: an alchemical Rosetta Stone?

References

## Introduction

Meaning is widely associated with "states". This is evident in political efforts to create unions of states, exemplified by the United States, the League of Arab States, or the [Commonwealth of Independent States](#), as well as by the many proposals at the regional level ([United States of Europe](#), [United States of Africa](#), [United States of Latin America](#), [United States of Latin Africa](#)). The United Nations is so considered at the global level, as with various proposals for world government. The "uniting" of states is framed as the most meaningfully desirable path forward.

This language is evident in reports such as those on the *State of the Union* (or the *State of the Nation*), the state of the environment, or as generated by the UN Specialized Agencies (or their national equivalents) with respect to their sectors of preoccupation: health, children, education, employment, food security, fisheries, safety, democracy, population, security (threat), environment, judiciary, media, cities, business. The approach may be extended to the *State of the World* or to the *State of the Planet*. Government policy may be a special preoccupation of a "department of state" or of a "state department". A "state" focus is used to frame issues of financial status, economic status, legal status, or civil status. The frame is used as much with respect to individuals as to communities: [health status](#), educational status, [social status](#), [marital status](#), and the like. A "state of comfort" is commonly a preoccupation.

The frame is intimately related to that of statutes and constitutions -- with the latter echoed at the individual level as in "healthy constitution". Curiously consciousness is also framed in terms of "states", as in the recognition of a variety of human [mental states](#), [states of consciousness](#), and even a state of madness. This extends to recognition of [emotional states](#), including a "state of terror", a "state of fear", a "state of agony", and to their contrary: [state of happiness](#), [state of grace](#), and the [blessed state of the righteous](#) (according to Christianity). A "state of holy matrimony" may be recommended.

Given the increasingly disastrous "state of the world", and that foreseen for the future, it is appropriate to ask whether another language might enable meaning to be carried otherwise -- and potentially more imaginatively and fruitfully. **There is clearly a fundamental problem with respect to the relationship between states of any kind** -- one which obscures consideration of the dynamics which may be vital to the essence of meaning. This is only too evident in the case of Israel-Palestine, India-Pakistan, North Korea-South Korea, and the like -- as with the [two-state solutions](#) proposed with regard to the first.

Seemingly, it may be argued, the "cracks" between the "states" cannot be effectively addressed through the language of "state". For the individual this is exemplified by [bipolar disorder](#). It is especially curious that reference should be made to a "state of war" or a "state of conflict", when both are especially characterized by a destructive dynamic ([John Locke](#), *Of the State of War*, 1689; Todd Schenk,

*Assessing the State of Conflict Assessment*, 2008). Surely a [contradiction in terms](#)?

To the extent that happiness is a recognized "state", of relevance is the much-cited preoccupation with "*Life, Liberty, and the pursuit of Happiness*" in the *United States Declaration of Independence*. How is a state to be meaningfully pursued?

Aside from the quest for "status", strangely this pursuit of a "state" is typically understood to involve the acquisition of a variation on "state" in the form of "[real estate](#)", notably property (land, buildings, and associated natural resources). These are the tangible components of a person's "[estate](#)", namely the [net worth](#) of a person at any point in time -- most particularly as determined for testamentary purposes. More strangely it is this "state" and its "worth" which is subject to the cautionary adage framed by the classic phrase "*You Can't Take it With You*" -- a challenge to the very meaning of any conventional sense of self-worth. Is a state, as such, inherently boring and unmeaningful?

Curiously the focus on states is intimately related to a preoccupation with [economic growth](#) and [economic development](#) -- as the pursuit of collective net worth -- even when challenged as needing to have a "[human face](#)". There is an expectation that "states" should grow and develop eternally in some way -- avoiding or eliminating problematic "states" -- and thereby embodying a quality of sustainability. Of relevance is use of "[state of the art](#)" to refer to the highest level of general development, as of a device, technique, or scientific field achieved at a particular time.

A further implication is that somehow, by associating the states together in some special ("magical") way, as yet to be discovered, a state of sustainable viability will be definitively established -- despite the challenges becoming ever more obvious (*The Consensus Delusion: mysterious attractor undermining global civilization as currently imagined*, 2011; *Ungovernability of Sustainable Global Democracy? Towards engaging appropriately with time*, 2011). The illusion that the component states will then "work" together, when so assembled, recalls the "clockwork" illusion of biologists relating to the [creation of life](#) from its well-known chemical components.

However data, information and knowledge are defined, they are clearly the primary modalities through which the various kinds of "state" are defined and bounded, whether from a legal, economic, scientific, political, social or religious perspective. It is therefore intriguing how the "meaning" assumed to be associated with any "state" is somehow disassociated in practice from those definitions. It may indeed be treated by some as indistinguishable from them -- when the definition of a word is treated as its "meaning", for example. It is however questionable whether such meaning satisfies in the face of experience of the dysfunctional "cracks" between [nation states](#), disciplines, belief systems, and the like -- "cracks" typically engendering various forms of violence.

Religion aside, science and philosophy exemplify the failure of initiatives at "uniting" ([Nicholas Rescher](#), *The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985). Without models from any of these three, it is not surprising that politics has been less than successful at eliciting meaning globally. There is clearly a [danger of state-orientation in a dynamic world](#), as was a specific focus in an earlier consideration of related issues (*From Statics to Dynamics in Sustainable Community: navigating through chaos by playing on polarities as attitude correctors*, 1998).

Can meaning be elicited and experienced otherwise? The question is in sympathy with the preoccupations of the [Global Sensemaking](#) network with respect to "[wicked problems](#)", although it challenges the possible distinction between "making sense" (globally) and "eliciting meaning" (within the universe). To this end, and with regard to "sense", the argument draws attention to the implications of the many references to "financial alchemy" in the light of the now-recognized early role of "alchemy" in enabling the credit revolution independent of the supply of "gold".

## Eliciting meaning of universal significance

What is valued as meaningful in states, such as those configured within the the United States or the United Nations? How is meaning experienced in the case of other "states" as presented in examples above. A state of health? A civil or social status? The state of the environment? With respect to what universe is the *Universal Declaration of Human Rights* to be considered meaningful?

Data, information and knowledge may well serve as carriers of meaning in some respects, but how is meaning to be understood as independent of them -- or as more subtly related to them? What is to be said to those who question whether data/information/knowledge is inherently meaningful?

As argued in previous exercises, there is a case for benefitting from the subtle complexities of the thinking considered necessary by astrophysicists and cosmologists to a fundamental understanding of the universe (*Towards an Astrophysics of the Knowledge Universe: from astronautics to noonautics?* 2006). They do indeed rely very extensively on data and information in order to engender knowledge about the universe, however hypothetical that may be, whether now or in the eyes of the future. These explorations are naturally held to be meaningful by those involved and are appreciated for that reason.

The meaning arising from such explorations can however be usefully considered as experientially independent. It is not definable within the terms of the **data/information/knowledge complex**. Its very nature may elude definition. It is not a factor in equations valued by science. It might be better understood as intimately related to a distinct complex -- perhaps one of **comprehension/communicability/credibility** and the collective confidence which that may engender and sustain.

How is the process of eliciting meaning then to be understood? Through what metaphors might this process be comprehended -- recognizing the paradox that meaning is intimately associated with that very process of comprehension? How might this contrast with what is held to be meaningful in "growth" and "development"?

## Resolving vs. Developing

The process of development can then be considered as a logical extension of the preoccupation with "states". The conventional

preoccupation with respect to the various states named above is on how they can be "developed" -- most readily understood in terms of how they can "grow", whether quantitatively or qualitatively. This is considered fundamental to government policy and vital to socioeconomic viability. Much is made of the possibility of individual "[human development](#)" and "[personal growth](#)".

Such growth can be understood as an extension of a pattern -- of a pre-existing pattern -- perhaps defined by a constitution, a set of statutes, a methodology, or a dogma. This is most obviously exemplified in the extensions to human settlements -- whether horizontally or vertically -- namely the preoccupation of urban planning. It is a progressive manifestation of that pattern in concrete form -- explication of the pattern through its articulation. Another useful example is the growth of a biological organism from an initial set of cells. A related pattern may be that of the "propagation" of either pattern -- whether a human settlement or an organism -- in another locality. In both cases **there is no intrinsic process of calling the pattern itself into question to enable emergence of another pattern**, or the possibility of a shifting dynamic between patterns.

This process can be contrasted metaphorically with that so intimately associated with light, both in exploration of the universe and in the [photosynthesis](#) on which life is so dependent. In the case of astrophysics, eliciting meaning requires a capacity to resolve very distant objects into meaningful patterns. **The data/information/knowledge complex enables pattern recognition essential to the comprehension/communicability/credibility complex** as suggested above. Using the vision (optical) metaphors, so favoured in strategic elaboration, the process of recognizing new patterns contrasts with that of developmental growth. The challenge is how to "resolve" light into patterns of coherence with the aid of telescopes of ever increasing capacity.

As a second metaphor, photosynthesis depends on the capacity of leaves to respond to light, enabling chemical processes vital to the metabolism of life forms. Can the process of eliciting meaning be fruitfully compared to photosynthesis? It is intriguing to note intuitive recognition of the value of creative response to "illumination" and "enlightenment". How might "inspiration" be understood in such terms? Why is inspiration so intimately related to creativity?

Presented in this way there is a case for contrasting "developing" with "resolving". **Developing is then the extension of an existing pattern -- a known pattern.** By contrast, **resolving involves progressive recognition of an emerging pattern** -- a pattern whose nature may continue to be only dimly recognized, if at all, perhaps "[through a glass darkly](#)". Curiously the language of governance focuses on the first to the exclusion of the second -- despite the widespread exploitation of the "vision" metaphor ([Metaphor and the Language of Futures](#), 1992). "Global sensemaking" implies the value of other metaphorical "senses" ([Strategic Challenge of Polysensorial Knowledge: bringing the "elephant" into "focus"](#), 2008; [Cyclopean Vision vs Poly-sensual Engagement](#), 2006).

Strangely the logic of the first, of developing, is primarily the logic of "packing", namely the challenge of packing in ever more people through rationalization of resource utilization. It is essentially a closed system logic, excluding any consideration of alternatives -- other than to reject them. These alternative may of course be embodied by those of other states -- thereby engendering conflict and "cracks". Ironically such growth is a prime source of learning. The increasing degree of packing required by ever-increasing population pressures leads to "noses being stuck in the stench engendered" -- eventually resulting in a catastrophic form of change. Sustainable development may in these terms be framed as successfully "adapting to the stench" of systemic negligence.

The logic of the second, resolving, is one of "discovery" of the unexpected, rather than avoiding its possibility ([Karen A. Cerulo, Never Saw It Coming: cultural challenges to envisioning the worst](#), 2006). It is one of "expecting the unexpected" and being nourished thereby, as argued by [Nassim Nicholas Taleb \(The Black Swan: the impact of the highly improbable, 2007; Antifragile: how to live in a world we don't understand, 2012\)](#).

It is curious in these turbulent times how dependent governance is on the development/growth pattern -- despite the crisis of crises (mostly unexpected) to which it is exposed.

## Eliciting meaningful identity: resolution vs. resolving

A third metaphor further clarifies the relationship between "developing" and "resolving" through the language of photography. Light impacting on a photographic plate, as might be used by a telescope, modifies [photosensitive](#) chemicals -- much as photosensitive cells are affected by light in biological organisms. A process of [photographic development](#) is then required for a recognizable image to emerge from the plate -- for the [image to be resolved](#). Strangely the "negative" plays a significant role in enabling the "positive" to emerge -- despite efforts to deprecate the language of the first in favour of the second ([Being Positive Avoiding Negativity: management challenge of positive vs negative](#), 2005). So framed, how does meaning "develop" -- given the additional irony that many associate personal identity with a photographic image?

Curiously it is the language of development which is used to explain, frame and define identity -- whether individual or collective. Identity is recognized in terms of states whose quantitative and qualitative growth is the focus of anticipation and aspiration. Maturation is readily understood as the accumulation of skill sets -- "building blocks" of skills -- strangely echoing the growth and sprawl of human settlements. Programs of "[nation building](#)" and "[building democracy](#)" are consistent with this language. Development pathways are readily defined and recognized. The unexpected is essentially unwelcome -- despite the much-commented failures in Iraq and Afghanistan from which little learning is sought.

**How might identity then be meaningfully recognized if it was preoccupied with "resolving" rather than "development" -- namely the discovery of elusive and unexpected patterns, or the recognition of meaning in patterns to which conventional meanings were previously attributed?**

We shall not cease from exploration  
And the end of all our exploring  
Will be to arrive where we started

And know the place for the first time  
(T. S. Eliot, *Little Gidding*, 1942)

This sensitivity to the unexpected may be compared strategically to anticipation of the unknown through an acceptance of ignorance and a capacity to embrace error, as discussed by (Donald Michael, *On Learning to Plan and Planning to Learn*, 1973). This contrasts with the often arrogant assumption of knowledge associated with "development" -- considered justified by the fact that a known (and unquestionable) pattern is being extended. This gives rise to statements of various leaders, such as that famously associated with Louis XIV of France (*L'Etat c'est Moi*, I Am the State) and subsequently recognized in the attitude of more recent autocratic leaders (General de Gaulle, Margaret Thatcher, and the like). Little consideration is given to the appropriate means of engaging with the unknown (*Unknown Undoing: challenge of incomprehensibility of systemic neglect*, 2008).

The governmental language of development leads periodically, if curiously, to the formulation of "resolutions" -- supposedly consistent with a "vision" of the future. Resolutions exemplify legislative closure of a policy process -- irrespective of whether they are subsequently ignored in practice, as is frequently the case (most notably in the collective case of United Nations resolutions and in the individual case of [New Year resolutions](#)). A resolution can be considered a symbolic definition of identity through articulation of what it is believed one stands for. Unfortunately government now stands for nothing, other than the appearance of standing for something. What indeed is to be understood as "meant" by any "statement" -- most notably by authorities representing a "state"?

Enthusiasm for such collective strategic resolution has often been highlighted by citation of a remark by a centurion of Imperial Rome, whose relevance ([whether fake or not](#)) continues to ring true for many:

We trained hard . . . but it seemed that every time we were beginning to form up into teams we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing; and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization. *Petronius Arbiter, 210 B.C.*

By contrast, in embodying a process, "resolving" consciously eschews the finality of such closure as a solution and cultivates a dynamic of openness through which new insight is continually emerging -- as from a dream. **How is it possible to embody emerging identity as a process of surprise, rather than aspiring to definitive identity excluding all surprise?**

Especially intriguing is the sense in which both "resolution" and "resolving" are indicative of a sense of purpose and intentionality -- whether premature (and superficially) defined through a conclusive "resolution", or intuitively and provocatively sensed in the process of "resolving" and "becoming". This emergence of "potential identity" can be explored in terms [entelechy](#) (*Entelechy: actuality vs future potential*, 2001).

## Solve et coagulo: neither changing nor resolving?

The duality presented above as static vs dynamic (as implying that of developing vs resolving), is itself necessarily inadequate to the living experience of emergent meaning -- an existential challenge for those obliged to live "betwixt and between" various states. This has previously been discussed in terms of the experience of [liminality](#) (*Living as an Imaginal Bridge between Worlds: global implications of "betwixt and between" and liminality*, 2011).

There is naturally meaning to be found in both extremes -- with the challenge being how to elicit a transcendent meaning to encompass them, without denaturing either through overdefinition. Curiously any such quest recalls the principle maxim of alchemy: *solve et coagulo*. The difficulty for comprehension being in the mystery of the "and", with the possibility of "both", as well as the challenging implication of "neither".

For [Paul Coelho](#) (*Solve et Coagulo*, 2011), the phrase is to be understood as "concentrate and dissolve". For others it implies the need to break down into constituent parts before these can be appropriately built together, namely analyzing a substance into its components, forsaking the exposed dross, and synthesizing the desirable elements into a new substance. In a period of desperate questing for global "solutions" to the "nothing" faced by many, there is a profound irony to the association of the term with one of the commonest chemical processes extensively explored by alchemy.

As framed here, the "solve" could imply the process noted above of "resolving", with the "coagulo" implying a finality embodied in form. The two both imply a process through which any form emerges. This can either be understood as a "solution" (or re-solution) to a problem, namely "coagulation" of disparate intentions. It can also be understood as the dissolution of any form considered prematurely as definitive, namely its coagulation into an inchoate form without distinguishable qualities.

This "both/and" framing can of course itself be appropriately challenged in the light of a sense of "neither/nor". A more fruitful implication may then be one of four conditions -- a quadrilemma highlighted from an Eastern perspective by Kinhide Mushakoji (*Global Issues and Interparadigmatic Dialogue; essays on multipolar politics*, 1988). Hence:

- static, resolution, development
- dynamic, resolving,
- both static and dynamic
- neither static nor dynamic

So framed, the widely popular phrasing of the song *The Times They Are a-Changin'* (1964) by [Bob Dylan](#), suggested a possibility for eliciting meaningful identity (*Being Neither a-Waving Nor a-Parting: considering both science and spirituality*, 2013). This acknowledges the complementarity between the distinguished "parts" and the mysterious "wave-like" process of their interrelationship. The question is whether the experience of "a-changing" times calls for forms of identity without closure, but encompassing such closure

in a paradoxical dynamic. Hence the need for a focus on "a-resolving" process rather than any final "solution" or "resolution" to that process .

The trap of articulation is consistent with the arguments for the "unsaying" of [apophysis](#), rather than (premature) overdefinition, as discussed separately (*Being What You Want: problematic kataphatic identity vs. potential of apophatic identity?* 2008). The case can be presented otherwise in the light of "self-creation" or [autopoiesis](#), as also discussed separately in the light of aesthetic criteria fundamental to a sense of meaningful coherence (*Being a Poem in the Making: engendering a multiverse through musing*, 2012).

The strategic implications are discussed with respect to premature conclusion -- mistakenly and affirmatively "connecting the dots" -- exemplified by the "intelligence failure" regarding weapons of mass destruction in the case of Iraq (*Groupthink: the Search for Archaeoraptor as a Metaphoric Tale -- missing the link between "freedom fighters" and "terrorists"*, 2002).

These factors serve to frame the classic philosophical question in the process of eliciting meaning, namely "who am I". This applies as much to the individual as to any collective, such as the United Nations -- or the United States. Metaphors may indeed be a valuable aid to this process (*Experimental Articulation of Collective Identity -- through a dynamic system of metaphors*, 1991; *In Quest of Mnemonic Catalysts -- for comprehension of complex psychosocial dynamics*, 2008).

Provocatively, the fourfold pattern (of the quadrilemma) may then be applied to the open-ended process of questioning itself -- centered as it is on the experience of "resolving". This is then to be contrasted with that of any conclusive answer as the closing down of that process of "sense-making" -- offering a (questionable) sense of "resolution" through "sense having been made". Is meaningful identity then to be associated with question and/or answer (*Am I Question or Answer? Problem or (re)solution?* 2006). The possibility of any ultimate "answer" then fruitfully raises the question of the dynamics of engaging with it such as to avoid the inadequacy of premature closure (*Paradoxes of Engaging with the Ultimate in any Guise: living life penultimately*, 2012).

Such paradoxes are extensively explored in the work on the implications of the [Möbius strip](#) and the [Klein bottle](#) by [Steven M. Rosen](#) (*Topologies of the Flesh: a multidimensional exploration of the lifeworld*, 2006; *Dimensions of Apeiron: a topological phenomenology of space, time, and individuation*, 2004). This has now been given new significance through his discussion of the contemporary relevance of the alchemical process (*Dreams, Death, Rebirth: a multimedia topological odyssey into alchemy's hidden dimensions*, 2013). Of notable value is his evocation of dream in this context. The elusive nature of dreams helpfully evokes the experientially inconclusive nature of the liminal process of "resolving" -- through which meaning is elicited with respect to "who am I".

## Pop concert of democracies?

Speculative efforts can be made to articulate individual identity through aesthetic metaphor. Reference was made above to "being a poem" as a means of engendering multiversal meaning . Musical connotations are evident in titles of [Mary Catherine Bateson](#) (*Composing a Life*, 2001; *Composing a Further Life: the Age of Active Wisdom*, 2011). A case can be made for deliberately designing aesthetic dimensions into the relations between nation states or disciplines (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006; *Enacting Transformative Integral Thinking through Playful Elegance*, 2010). This could prove dramatically appropriate as an [orchestral accompaniment](#) to the final moments of a global civilization arrogantly claimed to be as "unsinkable" as the *RMS Titanic* (to which the financial crisis may be a prelude).

It is then useful to consider the various recent proposals for a "[concert of democracies](#)", as initially articulated in the *Final Report of the Princeton Project on National Security* (2006) by G. J. Ikenberry and A. M. Slaughter and variously considered by others (Ivo H. Daalder, *Who and Why: the Concert of Democracies*, *Brookings*, 15 December 2006; Ivo Daalder and James Lindsay, *Democracies of the World, Unite, The American Interest*, January/February 2007; Robert Kagan, *The Case for a League of Democracies*, *Carnegie Endowment for International Peace*, 13 May 2008; Emiliano Alessandri, *World Order Re-founded: The Idea of a Concert of Democracies*, *The International Spectator: Italian Journal of International Affairs*, 43, 2008; James M. Lindsay, *A League of Their Own, Foreign Affairs*, March/April 2009; Anna Geis, *The Democratic Peace Revisited: the 'Concert of Democracies': why some states are more equal than others*, *International Politics*, 50, 2013).

These proposals follow from the much earlier initiative of [Klemens von Metternich](#) in helping to create a "[Concert of Europe](#)" -- a system, starting in 1815, by which four or five big powers kept miscreants in check and managed the affairs of smaller states (*Concert of Democracies: a seductive sound*, *The Economist*, 7 June 2007). This was subsequently evoked by one of the first speeches during World War I of President Woodrow Wilson in calling for "a concert of free countries".



However the titles of recent proposals, and commentaries on them, emphasize the unfortunate point that they embody little inspiration from musical harmony -- despite the frequent calls for "harmony" in the relationships between states. "Concert" is rather to be understood as a simple alternative to "league" or alliance" -- readily to be understood as "more of the same" (Patrick Krey, [Concert of Democracies: same old globalism](#), *Building Global Democracy*, 2009). It is consistent with the dubious framing of the [United Nations Global Compact](#), as previously discussed (*'Globalization': the UN's 'Safe Haven' for the World's Marginalized -- the Global Compact with Multinational Corporations as the UN's 'Final Solution'*, 2001)

As separately reviewed (*Policy implications: a "Concert of Democracies"?* 2006), with respect to the Princeton Project report of 2006:

The use of the "concert" metaphor in the report would seem to constitute a shift beyond the policy sustaining the [Coalition of the Willing](#) -- but one that, in musical terms, could be challenged as a possibly outdated mode in which the "music" is necessarily "directed" by the "conductor" to ensure that all sing "in concert" from the same "hymn sheet"... Is the effective focus on "concerted effort" or "concertation", without calling upon the musical connotations? As such it emphasizes concentration, typically of a temporary character for a particular task -- as with any periodic plenary assembly. It is perhaps appropriate to note that the related term [concerto](#) is applied chiefly to compositions in which unequal instrumental or vocal forces are brought into

opposition.

There is obviously little question here of the use of aesthetics to elicit meaning of global strategic significance. The point can be made by raising questions regarding the valuable insights to be gained from considering a possible **"pop concert of democracies"** -- provocatively emphasized by the contrasting images below

Contrasting caricatures of "harmonization" in governance? (Reproduced from <a href="#">Governing Civilization through Civilizing Governance: global challenge for a turbulent future</a> , 2008)	
"Concert of Democracies" ? Top-down "static" vision? "explicit imaginary"	"Pop Concert of Democracies" ? Bottom-up "non-static" vision? "implicit real"
	
EU "non-Constitutional" <a href="#">Reform Treaty</a> (in process of ratification under questionable conditions of "democratic deficit") suppressing reference to the <a href="#">EU anthem</a> (Beethoven's <i>Ode to Joy</i> )	<a href="#">Eurovision Song Contest</a> Winner (Athens, 2006) Elected overwhelmingly through a record Europe-wide popular "democratic process" (Lordi's song <i>Hard Rock Hallelujah</i> )

## From the language of state to a dynamic language

It is characteristic of current discourse to refer to the world as being in a "bad state". Many individuals -- especially the homeless, the undernourished, the impoverished, and the addicted -- are also considered to be in a "bad state". As argued above, there is obvious difficulty in engaging with any such state -- especially when it is characterized by a dynamic of [vicious cycles](#). A state focus offers an image, as with a photograph, at a time when what is required is an understanding of a dynamic -- as is obvious from the additional meaning offered by video and similar media, most notably over the web. The question is how people are thereby enabled to engage more fruitfully with the dynamic.

The dynamic associated with concerts offers an indication, although current intentions in employing this metaphor for sociopolitical organization suggest a new static form rather than what the term elicits in the imagination of many. The intention may be deliberately to exploit the imaginative connotations to "sell" the approach, whilst disguising the lack of innovation.

The contrast is apparent in the various allusions to the possibility that institutions could fruitfully learn to "dance" ([Rosabeth Moss Kanter](#), *When Giants Learn To Dance*, 1990; Mark Patrick Hederman. *Dancing with Dinosaurs: a spirituality for the 21st Century*, 2011; Chris Hedges. *Dancing with Dinosaurs, The New Humanist*, 2007). In that sense dinosaurs offer valuable insights into possible evolution (*Systemic Biomimicry of Dinosaurs by Multinational Corporations: clearing the ground for future psychosocial evolution*, 2011)

Any such reframing recalls the arguments of [Jacques Attali](#) with respect to the relationship between policy and organizational styles and the prevalent style of music in any period (*Noise: the political economy of music*, 1977/1985). He indicated that cultures articulated their social organization through the musical structure favoured in the immediate past (*Noise: the political economy of music*, 1977). Thus he specifically relates the currently favoured pattern of organization to that of classical Western music. However his later reflections on governance in the future ignore this earlier argument, as noted in a review -- referring to the popular attraction implied by the right-hand image above (*Tomorrow, Who Will Govern the World? Commentary on Jacques Attali's "Demain, qui gouvernera le monde?"*, 2011).

The contrast between the images above also highlights Attali's question, although reference (above) to a "pop concert of democracies" is not presented as a conclusion to be drawn but rather as the nature of a valuable challenge to current state thinking. Inability to "hear the music of the times" -- of the *Zeitgeist* -- reinforces the disastrous focus on [short-termism](#). As argued by [Jorgen Randers](#) (*What the future will be, Cassandra's Legacy*, 7 April 2013), there is no longer an array of good and bad scenarios:

... there is only one; and it is not pleasant. It can only be the decline of our society, constrained by overpopulation, declining resource availability, and widespread damage caused by pollution and climate change. The start of the decline may come earlier or later; collapse may be faster or slower, but the shape of the future is determined. Randers maintains that there is a simple way to describe the reasons that are taking us to this unpleasant future: **people always make the choice that involves the least costs in the short term. The problem is all there: as long as we always choose the easiest road, we have no control on where we are going.** [emphasis added]

Music, through dance, offers a contrast through its anticipation of both the evolution of a pattern and the opportunities for its variation -- as with the *The Goldberg Variations*, of [Johann Sebastian Bach](#), which were a focus of the study by [Douglas Hofstadter](#) (*Gödel, Escher, Bach: an Eternal Golden Braid*, 1979). Music evokes a mental, even emotional, disposition -- as is so questionably demonstrated by its exploitation for military purposes as a carrier of values and intentionality. As noted above, the possibilities have been explored elsewhere (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006). They evoke the participative possibilities of "playing" (*Enacting*

## Dynamic transformation of static reporting of global processes

The above argument can be presented otherwise (and more concretely) through offering a contrast between current "state reporting", as noted above, and a dynamic reframing of such reporting as explored in the table below. Most of the reports cited (in the left-hand column) are the product of international initiatives, whether global or regional -- many of them are produced regularly. The tentative transformations of the titles of existing reports are strikingly suggestive of new ways of seeing the issues in question -- possibly only present in the reports by implication (if at all).

The following table is a highly abridged presentation of an extended version available separately as an annex (*Dynamic Transformation of Static Reporting of Global Processes: suggestions for process-oriented titles of global issue reports*, 2013). That listing is intended to be indicative rather than exhaustive.

Exploratory exercise in transforming the state-focused image of reporting on world processes (consideration could be given to expressing "dynamic" or "processes" in singular or plural form) [see <a href="#">extended version</a> listing over 40 reports]		
<i>Titles of existing reports</i>	<i>Titles reframed with "dynamic"</i>	<i>Titles reframed with "processes"</i>
State of the World	Dynamic of the World	Processes of the World
State of the World's Children	Dynamic of the World's Children	World Children's Processes
State of Food Insecurity in the World	Dynamic of Food Insecurity in the World	Food Insecurity Processes in the World
State of Democracy	Dynamic of Democracy	Processes of Democracy
State of World Population	Dynamic of World Population	World Population Processes

As noted above with respect to a contradiction in terms, the use of "state" in framing a report on complex processes is misleading in the extreme. Curiously **many sectors are the focus of reports on the current "state of knowledge" -- with little consideration of the implications of any dynamic or process vital to eliciting such knowledge**. This implies a delusion that a "still photograph" provides adequate comprehension of a dynamic -- where many could better elicit meaning via a video.

It is of course the case that such reports endeavour to indicate trends in the indicators on which they focus, through the use of graphs which may only **imply** a dynamic -- or allow it to be inferred. The question is whether graphs are adequate to eliciting the kind of meaningful engagement required for appropriate remedial action. Arguably such reporting does not enable people to "get into the music" and engage with its rhythm, as is the case with the entrainment to dance by music -- despite the initiative to produce a *Graphical Report on the State of the World*. Many of the issues imply dynamics which are dangerously ignored in conventional reporting -- notably the **social cycles** highlighted by Pitirim Sorokin (*Social and Cultural Dynamics: a study of change in major systems of art, truth, ethics, law and social relationships*, 1957).

With respect to enhancing insight into the dynamic, a striking innovation in "turning statistics into knowledge" -- with the slogan "unveiling the beauty of statistics for a fact based world" -- has been offered by the [Gapminder](#) initiative, within the context of the [OECD Global Project on Measuring the Progress of Societies](#). **A case might be fruitfully made for re-imaging "statistics" -- as exemplifying state language -- with something akin to "dynastics"**.

The originality of *The Limits to Growth* report in 1972 derived from an analysis of connectivity through a [systems dynamics](#) model named [World3](#) (Jay W. Forrester, *World Dynamics*, 1971). It is appropriate to ask whether the "static" emphasis of the above reports obscures, possibly deliberately, recognition of vital systemic processes. Processes of a cognitive nature are noteworthy for their absence, especially the challenge of engaging with them (*World Dynamics and Psychodynamics: a step towards making abstract "world system" dynamic limitations meaningful to the individual*, 1971; *Checklist of Peak Experiences Challenging Humanity*, 2008; *Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity*, 2009).

It can be readily argued that the collection of "states" offers no indication of how they are (or might be) interrelated systemically between the domains so bounded. This systemic connectivity has been the primary preoccupation of the *Encyclopedia of World Problems and Human Potential* now accessible [online](#). To the extent that the various reports focus on parts of the "metabolism" of a planetary civilization, the question to be asked is how "[metabolic pathways](#)" are to be recognized and presented. Biochemists use detailed maps for this purpose -- appropriately supplemented, for mnemonic purposes, by songs relating to each pathway (Harold Baum, *The Biochemists' Songbook*, 1982). Elaborating analogous songs to facilitate comprehension of the processes implied by the "state-oriented" reports is clearly a possibility -- reminiscent of a more fundamental challenge for a global civilization, as evoked by the [Dreamtime](#) remembered in the dances of the Australian Aborigines (*From Information Highways to Songlines of the Noosphere: global configuration of hypertext pathways as a prerequisite for meaningful collective transformation*, 1996).

What is the cognitive analogue to bodily entrainment by music, as evoked by the work of [Maxine Sheets-Johnstone](#) (*The Primacy of Movement*, 2011) and [Mark Johnson](#) (*The Meaning of the Body: aesthetics of human understanding*, 2008)?

## State sovereignty in a meaningful universe?

**Language of state:** Fundamental to the language of state is the principle of [state sovereignty](#). As introduced in the *Wikipedia* entry:

A sovereign state is a political organization with a centralized government that has supreme independent authority over a geographic area. It has a permanent population, a government, and the capacity to enter into relations with other sovereign states. It is also normally understood to be a state which is neither dependent on nor subject to any other power or state. The existence or disappearance of a state is a question of fact. While according to the declaratory theory of state recognition a sovereign state

can exist without being recognised by other sovereign states, unrecognised states will often find it hard to exercise full treaty-making powers and engage in diplomatic relations with other sovereign states.

This language is understandably echoed in that of the governance of states through one or more [political parties](#) introduced in the relevant *Wikipedia* entry as:

A political party (from Latin: *pars*, Genitive *partis*, "part", "portion") is a political organization that typically seeks to influence, or entirely control, government policy, usually by nominating candidates with aligned political views and trying to seat them in political office. Parties participate in electoral campaigns and educational outreach or protest actions. Parties often espouse an ideology or vision, expressed in a party program, bolstered by a written platform with specific goals, forming a coalition among disparate interests.

The emphasis on "part" is to be noted -- in a period when there is a desperate need for a sense of "wholeness", supposedly implied by state sovereignty.

**Language of uncertainty of physics:** Coherent meaning is readily associated metaphorically with light, as with use of the vision metaphor by political parties. The language of physics offers radical new thinking in engaging with the paradoxical qualities of light -- as being both "particle" and "wave" according to the circumstances of its observation. Traces of this contrast are also to be found in the obligation of parties in government to take account of movements of opinion, often characterized as wave-like.

The question is how to benefit from the thinking of physics to interrelate such contrasting insights in more fruitful ways, as mentioned above (*Being Neither a-Waving Nor a-Parting: considering both science and spirituality*, 2013). How might any "concert of democracies" embody waves -- as so visibly evident in sports stadia through participation in a [Mexican wave](#)?

**Uncertainty regarding sovereignty:** In striking contrast to the unambiguous manner in which reference to sovereignty is conventionally made to reinforce a state-oriented worldview, the *Wikipedia* entry cites the early remark of [Lassa Oppenheim](#), an authority on international law:

There exists perhaps no conception the meaning of which is more controversial than that of sovereignty. It is an indisputable fact that this conception, from the moment when it was introduced into political science until the present day, has never had a meaning which was universally agreed upon.

The entry usefully comments on the following contrasting views:

- *Classical Liberals*, such as [John Stuart Mill](#), for whom every individual is to be considered as sovereign on him- or herself.
- *Realists*, holding the view that sovereignty is untouchable and as guaranteed to legitimate nation-states.
- *Rationalists*, sharing the view of Realists, with the reservation that sovereignty of a nation-state may be violated in extreme circumstances (as has been so frequently evident)
- *Internationalists*, considering that sovereignty is outdated and an unnecessary obstacle to achieving peace, consistent with belief in a "global community".
- *Anarchists* and some *Libertarians*. deny the sovereignty of states and governments, arguing for a specific individual form of sovereignty -- sharing the classical conception of the individual as sovereign of himself, as the basis of political consciousness.
- *Imperialists*, hold a view of sovereignty as being the locus of where power rightfully exists, namely with those states that hold the greatest ability to impose the will of said state, by force or threat of force. They effectively deny the sovereignty of the individual in deference to either the "good" of the whole, or to divine right.
- *Legalists* may uphold a sense of [sovereign law](#), namely as being above political or other interference. The [letter of the law](#) is then applicable and enforceable, even when against the political will of the nation, unless formally changed following constitutional procedure.

Possibly to be considered missing from this array is the view of the Catholic Church for whom the sovereignty of the Church, embodied in the Pope as Supreme Pontiff, evokes the desirability of a degree of subservience on the part of other sovereign states -- as cultivated during the Holy Roman Empire.

**Rule of law:** The role of law is clearly fundamental in sustaining and subverting meaning in a collectivity -- as has been only too evident in the protection effectively accorded to those most complicit in endangering the livelihoods of millions in the course of the ongoing financial crisis (*Extreme Financial Risk-taking as Extremism -- subject to anti-terrorism legislation?* 2009). This contrasts strikingly with the lack of protection accorded to whistleblowers (as truth-sayers) -- sending a message whose meaning few now have difficulty in decoding.

Sovereignty is also discussed in terms of the *sovereignty of the individual*, otherwise termed *self-ownership*, individual sovereignty or individual autonomy. This is the concept of property in one's own person, expressed as the [moral or natural right](#) of a person to have [bodily integrity](#), and be the exclusive controller of his own body and life. The *Thirteenth Amendment to the United States Constitution* is sometimes viewed as an implementation of the concept of self-ownership, as are some portions of the *Bill of Rights*.

**Micro-sovereignty and elusive nations?:** Although sovereignty is typically asserted with respect to larger geopolitical entities, a different light is cast on understanding of it in the case of the smallest entities, especially given the equality of voting power which may be claimed by them -- and accorded to them, in international organizations. These entities may be understood as vehicles through which meaning is cultivated and sustained in ways contrasting with those characteristic of conventional states. A delightful distinction is made

by *Wikipedia* between:

- **Microstates** (or ministates), namely small independent sovereign states recognized by larger states. They typically have a very small population or very small land area, but usually both. Examples include Liechtenstein, Malta, Monaco, Nauru, Singapore and Vatican City. Despite their size, these variously provide a well-recognized focus for a combination of worldwide belief and financial resource flows (P. Christian Klieger, *The Microstates of Europe: Designer Nations in a Post-Modern World*, 2012; Thomas M. Eccardt, *Secrets of the Seven Smallest States of Europe*, 2004)
- **Micronations**, which are typically self-declared, claiming to be independent nations or states, but are not so recognized by other states or by international organizations. They are also distinguished from other kinds of social groups (such as **eco-villages**, **campuses**, **tribes**, **clans**, **sects**, and **residential community associations**) by expressing a formal and persistent, even if unrecognized, claim of sovereignty over some physical territory. As such they may be associated together in entities such as the **League of Small Nations** (Mohammad Bahareth, *Micronations: for those who are tired of existing incompetent governments and are longing for something new and refreshing*, 2011; John Ryan, et al, *Micronations: The Lonely Planet Guide to Home-Made Nations*, 2006)
- **Virtual worlds**, web-based nations (or nomadic countries): The web environment has enabled people to create new forms of online community, possibly as micronations or virtual worlds. Members are physically scattered around the world and interact primarily via the internet. The differences between such micronations, other kinds of **social networking** groups, and **role playing games**, are often hard to define. As one example, the meaningful nature of the engagement in **Second Life** has attracted extensive comment.
- **Imaginary countries**, namely fictional countries elaborated through fictional stories sustaining belief amongst those associated with them, but whose "existence" in reality is questionable according to conventional requirements for "concrete proof". Such "countries" may be notably distinguished by culture, elaborate mythology, and the cultivation of an **artificial language** (Alberto Manguel, *The Dictionary of Imaginary Places*, 2000). A striking example is the **Imaginary Society** (or **Société Imaginaire**), founded in 1984 and sustained by the initiative of the Batuz Foundation as a grouping over 500 artists, writers and scholars from around the world (*The Imaginary Society*, *International Herald Tribune*, 4 January 1995). Such entities raise fundamental questions as to the nature of their "existence" (*Cultivating Global Strategic Fantasies of Choice: learnings from Islamic Al-Qaida and the Republican Tea Party movement*, 2010).

An insightful (if provocative) discussion of its **sovereign member rights** is provided on the web site of one such "hard-to-define" entity, namely **UCADIA**. This is the focus of *Symbolic Models of Unique Collective Awareness*.

**Sovereignty as vehicle for meaning?** The variants presented here as examples are indicative of a degree of popular abandonment of the credibility of conventional forms of sovereignty, as upheld by the law and by those who profit most directly and dubiously from its exploitation. It is increasingly questionable whether sovereignty offers a vehicle for the cultivation of requisite meaning -- over which it has traditionally claimed to hold a monopoly. Symbolically this is evident in the widely contested role of its embodiment in a **sovereign**. -- especially when one view of democracy has it that sovereignty is considered to reside with the individual citizens. Many entities characteristic of the multitude of civil society bodies are readily described as worlds unto themselves -- only to be arbitrarily distinguished by legal niceties from the nation-states that so often discriminate against them.

It is understandable that rejection of state sovereignty should be considered as "not serious" -- even "ridiculous" -- by nation-states in comparison with the other vehicles through which individuals elicit meaning. However the current quality of global governance through conventional states justifies the argument that its sense of sovereign is less than serious -- if not dangerously so -- especially given the associated pattern of denial and the increasing sense of absurdity (Charles Handy, *The Age of Unreason*, 1991; Charles Handy, *The Age of Paradox*, 1995; Michael Foley, *The Age of Absurdity: why modern life makes it hard to be happy*, 2011).

## Symbolic connotations of sovereignty in a meaningful process

**Sovereign and Sun:** A suggestively instructive comparison can be made between evolving understanding of sovereignty and that traditionally associated symbolically with the sovereign as the central Sun of the state -- with the various implications of rulership. **Louis XIV of France** may have been the last ruler so explicitly recognized as a Sun King -- a worldview recently celebrated in a French musical comedy of that name (*Le Roi Soleil*, 2005). There is however a long tradition of the association of a sovereign ruler with a "solar" role -- evident in a degree of conflation between the psychosocial role of the early Egyptian pharaohs and the Sun-god **Amun-Ra**.

The term "sovereign" derives etymologically in recent centuries from "*souverain*" (in French, to be compared with Italian *sovrano*, and Spanish *soberano*). With the operative prefix deriving from the Latin *super* ("above"). The spelling has been influenced by folk-etymology. Ironically, the term is widely cited as deriving earlier from *superamus* in Vulgar Latin (Geoffrey Bennington, *Superamus, Theory and Event*, 2005).

**Zollverein?** As a mnemonic exercise the unifying function of sovereign can be explored as deriving from "sol" -- through a sense of "solverein". This multilingual word play, exploiting the German sense of associative unification (*verein*), recalls the historic effort at uniting states through the **Zollverein**. Established in 1818, as a German Customs Union, this was a coalition of German states formed to manage tariffs and economic policies within their territories -- readily to be seen as a precursor of the **European Union Customs Union** (EUCU). This is a customs union consisting of all the member states of the European Union (EU) and a number of surrounding countries. Its operation is a principal task of the European Economic Community, established in 1958, and succeeded by the **European Union**. In German, United Nations is translated as **Vereinte Nationen**.

Appropriately "Zoll" is intimately related to the sense, and transaction costs, of the boundary crossing associated with the relationship between parts -- and their respective "customs". In the spirit of such wordplay, interesting multilingual associations are offered by the sense in which *verein* incorporates a process of purification -- through the German significance of *ein*, *rein* and *verein*. The traditional sense of purification by the Sun may then be reinforced by "solverein", whilst that of money laundering is reinforced by "soverein" (exploiting the French slang term *sou*, for a coin of little value, itself an adaptation of the Roman gold *solidus*. Sovereign has been the name of an [English gold coin](#) (1489 to 1604), now a [coin of the United Kingdom](#) (since 1817), as well as of coins occasionally minted in some states of the Commonwealth.

**"Sol" and state**: The problematic intricacy of the relationship between "sol" and "state" is only too evident in the [Galileo Affair](#). The Catholic Church inherited, and embodied, the long symbolic tradition of solar rulership and its mediation by a priesthood in governance of the mundane world and its "states". That Church continues to promote an [Invocation for the Sovereign Pontiff](#). The Church has appropriated a higher order of sovereignty, as reflected in the meaning associated with the [Holy Roman Empire](#) (962 to 1806). The implication promoted by Galileo that the world so governed was not central to the universe was experienced as challenging in the extreme.

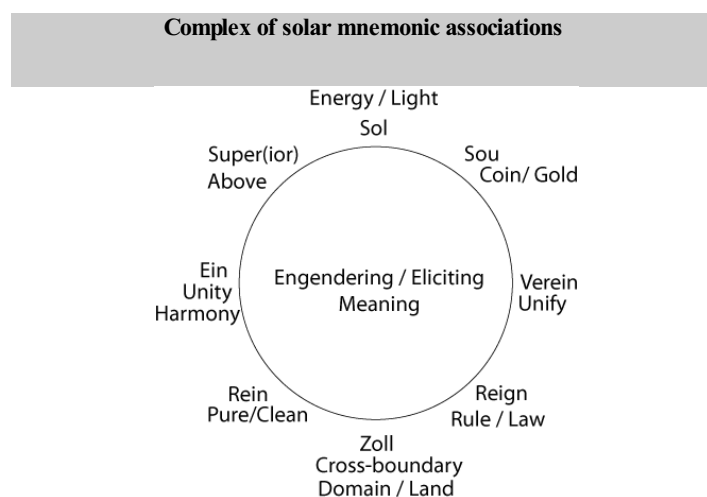
It is in this sense that it can be argued that the current preference for "state" and the "static" (and its implications for "status") bears a curious resemblance to the [Ptolemaic epicycles](#) which had long "explained" the intricacies of the perceived astronomical dynamics from the world -- within the universe of which it was held to be the "geocentric" centre. Cognitively this can be understood in terms of "cognitive epicycles", as discussed separately ([Cognitive epicycles -- prefiguring more fundamental insight?](#) 2013). Rather than the mundane world (and its "states") being circled by the Sun, the cognitive revolution, enabled by Galileo, derived from emergence of "heliocentric insight". The question is then the nature of any comparably requisite cognitive revolution at this time, and how it is to be discovered and communicated within a "state" worldview ([Identification with a sustaining "heliocentric" locus?](#) 2013).

**Static role-playing**: Clearly the roles played out in the drama of the Galileo Affair, by the Catholic Church and [Galileo Galilei](#) himself, are liable to be replayed in the drama of the relationship between any sovereign "state" (assumed to be symbolically mediating the Sun) and the individual in quest of meaning. A governor of any state is only too readily assumed to be the source and determinant of meaning for those so governed -- and readily accepts that role. Given the much-challenged capacity of learning by such governors, the adage of [George Santayana](#) continues to apply: *Those who cannot remember the past are condemned to repeat it.*

Ironically official science may now be seen as playing out the role of the Catholic Church in relation to innovation threatening its worldview ([Knowledge Processes Neglected by Science: insights from the crisis of science and belief](#), 2012; [End of Science: the death knell as sounded by the Royal Society](#), 2008).

This has been made evident by the famed editor of *Nature*, [John Maddox](#) (Fellow of the Royal Society) in describing a published work of [Rupert Sheldrake](#) (*A New Science of Life: the hypothesis of morphic resonance*, 1982) as being *A book for burning?*. Echoing the dramatic role of the Inquisition, Maddox elaborated his position a decade later: *Sheldrake is putting forward magic instead of science, and that can be condemned, in exactly the language that the popes used to condemn Galileo, and for the same reasons: it is heresy.* (BBC Documentary, 1994).

**Self-reflexive processes of a state?** Clearly missing is the capacity for self-reflexivity as extensively explored in the work of Douglas Hofstadter (*I Am a Strange Loop*, 2007). There is every reason to suspect that the process of eliciting a universe of meaning for the individual may necessitate those forms of paradox with which fundamental physics is now especially familiar (Jim Al-Khalili, *Paradox: the nine greatest enigmas in physics*, Broadway, 2012; Yakir Aharonov and Daniel Rohrlich, *Quantum Paradoxes*, 2005). This is recognized in the various works of Steven M. Rosen (1994, 2006), as cited above. The possible collective implications also merit exploration ([Sustaining a Community of Strange Loops: comprehension and engagement through aesthetic ring transformation](#), 2010). This is consistent with current explorations of higher order cybernetics in relation to cognition ([Maurice Yolles, Knowledge Cybernetics: a metaphor for post-normal science](#), 2010)



## Illicit meaning and "illiciting meaning"?

*Eppur si muove*: Given the predilection for the language of state, and state sovereignty, it would be naive to expect that these will disappear -- despite the crises with which nation-states are confronted and for which they are proving so inadequate. The case of

Galileo, as an individual, confronted with the opposition of a "static" collective mentality, offers learnings for individuals today.

Galileo has indeed been championed over subsequent centuries by science, as an exemplar of a more fruitful way of thinking. His personal tragedy was the pressure on him to recant in favour of a geocentric worldview -- despite his allegedly murmured assertion, *Eppur si muove* (*And yet it moves*), through which he expressed his insight into a heliocentric worldview. It was only some 400 years later, in 2000, that Pope John Paul II issued a formal apology for past mistakes, including the trial of Galileo.

In this light there is a case for individuals to expect that the meanings at this time, which will prove central to future understanding, are likely to be "illicit" in relation to views authorised by the "state" perspective. This offers a delightful play on the relationship between "eliciting meaning" and "illiciting meaning". The meaning elicited by Galileo was necessarily illicit at the time -- and for years to come from any state-governed perspective. Should individuals not assume the right to be a "Galileo" in relation to any state perspective -- however illicit this may be held to be from that perspective?

**Cognitive terrorism?** At the present time, Galileo could readily be framed as a "cognitive terrorist" through the potential disruption he was claimed to be bringing to the scheme of things. His treatment by the **Inquisition**, as a heretical threat to the security and integrity of the state, is comparable to that of the treatment of modern-day terrorists by any "police state" -- as with any perspective held to be "extreme" (*Norms in the Global Struggle against Extremism: "rooting for" normalization vs. "rooting out" extremism?* 2005)

One strategy, practiced clandestinely by the early Christians in the Roman Empire, could be described as "illiciting meaning". Irrespective of the static worldview promulgated by the state, alternative worldviews can indeed be cultivated secretly. Curiously, given the role of the light metaphor, an equivalent to the process of **occultation** (as recognized by astronomy) is then evident in **occult knowledge**, however questionable this may otherwise be.

Curiously this alternative process has become ever more evident in the disassociation of the beliefs of many individuals from the views promulgated from a static perspective. This is most evident in music -- despite the manner in which recent innovation is deprecated by those authorities promoting "classical music" or the forms more narrowly defined as "sacred" (Papal Encyclical: *Musicae Sacrae*, 25 December 1955).

An analogous phenomenon is evident in social organization through the explosion of civil society initiatives of every kind and persuasion - - whether approved and recognized as legitimate or framed (through being "nongovernmental") as a potential threat to the state. These processes have themselves been superseded by the explosion of associative relationships over the web, most notably through social networking of various kinds. The web may well be understood as an arena of memetic warfare (*Missiles, Missives, Missions and Memetic Warfare: navigation of strategic interfaces in multidimensional knowledge space*, 2001).

**Conservation of an endangered psychosocial heritage:** It is in this sense that it can even be considered quite unnecessary to displace the state and the language of state -- or antiquated understandings of sovereignty and subservience to it. Much can be learned from the progressive ritualisation of the aristocratic processes and modes of organization of past centuries -- and from the traditional domain to which they hold mellifluous titles, new experienced as quaint at best.

At one extreme these are valued through the practices and paraphernalia of **orders of chivalry**, including those intimately associated with the Catholic Church. These are considered by those involved to exemplify the highest values, especially honour -- claims perceived as presumptuously comic from other contexts. Variants are evident in the rituals of the oldest European universities. At another extreme they are valued and celebrated in folk traditions, most obviously associated with carnivals. Traditional respect for the state pattern is perhaps most accessibly and visibly evident in the example of the Yeomen Warders of the Tower of London -- popularly known as the **Beefeaters**.

Does this argument suggest that the sovereign states of today will continue to "exist" over centuries to come through such ritualised processes -- and the aesthetic respect they elicit, if only for tourists? Will the United Nations be gradually transformed into an equivalent of the Tower of London -- with its regular General Assemblies and solemn Resolutions to the delightful instruction of tourists, encouraged to present their issues for informed debate? Will the secretariats of the **UN Specialized Agencies** attract the respectful attention now accorded to the Temples of the **Olympian Gods** of Greece, or to the temples of their later equivalents in the Roman Empire (the *Dii Consentes*)? Does this suggest a meaningful psychosocial extension of what is valued as a **World Heritage Site** or as a mandate for the **UN Voluntary Fund for Indigenous Populations**?

## Mnemonic clues to configuration and containment of meaningful identity

**Parliament as the dynamic of state:** The identity of any sovereign state would readily be claimed to be intimately represented and embodied by one or more forms of parliamentary assembly. Such formal contexts can be understood as containers for the dynamics sustaining sovereignty -- otherwise relatively invisible in representation of state authority to the external world. The recent arguments for rendering such dynamics visible through video coverage revealed the extent to which it was felt that such transparency undermined those processes. The revelation to the electorate of the quality of those dynamics indeed challenges any assumptions about the dignity of such arenas and their capacity to enable the emergence of meaningful decisions. Extreme examples include: lying and accusations of lying, verbal abuse, disruptive interventions, and unruly behaviour occasionally extending to physical violence. Argumentation may well be characterized by systematic indulgence in **logical fallacies**.

Parliamentary process might well be characterized by the majority party endeavouring to mislead the opposition -- with the latter being so accused in turn -- except when there is a bipartisan effort to mislead the electorate. Extensive use is made of misleading arguments, based on unquestionable premises, to inhibit **critical thinking** and discussion ("security", "health", "saving lives", etc). The question may well be asked as to how the illusion has been sustained that politicians and leaders tell the truth, or have any motivation to do so. The current cultivation of a **culture of fear** and a **politics of fear** is instructive in that respect (*Promoting a Singular Global Threat --*

*Terrorism: strategy of choice for world governance*, 2002). Curiously the pattern is evident to a degree within even more restricted communities. If those with the power to do so have the capacity to act unreasonably, or to conceal truths challenging their authority, there is no way that they can prove the contrary. By what means is [collective intelligence](#) then assumed to emerge?

**Resolving rather than Resolution:** It is through such questionable processes that it is readily assumed that meaning valuable to the individual is elicited. The challenge for the individual can however be presented otherwise through questioning the form through which identity might otherwise be meaningfully configured and contained. The typically binary process of parliamentary discourse, and its abuse, is clearly inadequate to the task of collective governance. What other forms merit consideration (*Transcending Simplistic Binary Contractual Relationships: what is hindering their exploration?* 2012).

Rather than seeking premature closure in "resolution", the case made above suggests the merit of exploring clues to the dynamics of "resolving". A pointer in that regard is the traditional intimate association of sovereignty with the fundamental meaning through which the universe emerged and has been configured. By contrast the current preoccupations of state-oriented thinking are however completely disassociated from the universal -- except in the promulgation of "universal declarations" and the essentially unchallenged association of governance with unquestionable faith-based beliefs (*Future Challenge of Faith-based Governance*, 2003). Despite this, a significant proportion of tax payer resources is allocated by the state to scientific research on the mysterious nature of the universe and its origins -- for reasons that could well be questioned in a period of ever increasing austerity measures. There is a case then, as noted above, for exploring the sophisticated subtlety of this thinking -- exceeding that of the theology it claims to have displaced -- as offering forms of meaning of value to the individual.

**Exploring shapes as identity containers:** In engaging with such thinking -- framed as it is by a data/information/knowledge complex -- it was suggested above that such patterns call for adaptation to the experiential characteristics of a comprehension/communicability/credibility complex and the collective confidence which that may engender and sustain. In eliciting a universe of meaning for the individual, given preoccupation by astrophysics with the [shape of the universe](#), it might be asked how many "shapes" have been envisaged. How might individuals identify with such shapes -- and transform between them, as separately discussed (*En-minding the Extended Body Enactive engagement in conceptual shapeshifting and deep ecology*, 2003)? Might such identification enable the transformation of the art of conversation (*Proposed universes and their conversation potential*, 2012).

As indicated there, recent research by [Stephen Hawking](#) and colleagues (*Accelerated Expansion from Negative Lambda*, 2012), has 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). This offers a way of reconciling the geometric demands of [string theory](#), a still-hypothetical "theory of everything", with the universe as observed -- through a negatively-curved Escher-like geometry (essentially a hyperbolic space). These clues were used in relation to the aforementioned discussion of cognitive epicycles -- on the assumption that a more elegant "heliocentric" focus may emerge (*Cognitive epicycles -- prefiguring more fundamental insight?* 2012; *Identification with a sustaining "heliocentric" locus?* 2012)

The recent results of astrophysics 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.

**Questioning the nature of "universe":** To what extent do these enable new exploration of the identity of an individual within a universe of meaning -- one in which the disassociation of "individual" and "universe" can be fruitfully called into question? Being that universe may be fundamental to the eliciting of meaning, as previously argued (*Being the Universe : a metaphoric frontier*, 1999). Metaphor may well be a vital key to the cognitive dynamics of the comprehension/communicability/credibility complex. The point has been provocatively intimated by [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.

**Metaphorical clues:** In the quest for a variety of evocative shapes with which comprehension of identity might be metaphorically associated, other clues are offered by:

- the geometry of the spherically symmetrical polyhedra, of which the Platonic and Archimedean forms are the simplest, as separately discussed (*Towards Polyhedral Global Governance: complexifying oversimplistic strategic metaphors*, 2008)
- the imaginative articulation of possible artificial worlds to be constructed as habitats, whether in real or virtual space. Examples cited by *Wikipedia* include: [Culture Orbitals](#), [Dyson spheres](#), [Globus Cassus](#), [Planetoids](#), [Ringworld](#). Popular imagination has been widely challenged by the cuboid habitat, supposedly characteristic of the [Borg collective](#). (perhaps due to its affinity with those of bureaucracies)
- the inspiration offered by nature through systematic presentations, such as that of Christopher Alexander (*The Nature of Order: an essay on the art of building and the nature of the universe*, 2003-4).

Given the argument above contrasting static and dynamic, such forms might be considered merely as complexifications of the static. Clues of greater relevance to the identity of some might be offered by:

- the dynamic elegance so evident in the [swarming behaviour](#) of flocks of birds or schools of fish, as separately discussed

(*Dynamically Gated Conceptual Communities: emergent patterns of isolation within knowledge society*, 2004)

- the emerging recognition of analogous dynamics in social networking behaviour, more especially in "twitterspace" or the "twittersphere" -- despite arguments that it does not "exist" (Sarah Lacy, *The problem with "the" Twittersphere is that it doesn't really exist*, *Pando Daily*, 7 March 2013). This encourages speculative reflection on its future evolution (*Re-Emergence of the Language of the Birds through Twitter?* 2010)

## Sustaining a universe of meaning within a questioning process

Given the nature of the comprehension/communicability/credibility complex, a fundamental challenge is how fruitfully to configure any "clues" as a container within which meaning can be elicited. The may be understood as one of interweaving disparate threads of discourse (*Interweaving Thematic Threads and Learning Pathways: noonautics, magic carpets and wizdomes*, 2010). Rather than being understood in static terms, the interplay of these threads may be significant, as in music or in dramatic plotlines (*Enacting Transformative Integral Thinking through Playful Elegance: a symposium at the End of the Universe?* 2010).

The clues, as interacting threads, might include the following -- understood as constrained worldviews of contrasting character, or as ingredients in a drama, for example:

- **Drama:** That of the Galileo Affair, as cited above, offers one example in which the roles are effectively "eternal" in their implication. That of the **Grand Inquisitor** was developed by **Fyodor Dostoyevsky** in a novel of that name (*The Grand Inquisitor*, 1879). As noted above, the editor of *Nature* cast himself into that role with respect to the work of Ruper Sheldrake. How is any individual to compose and play meaningfully in such a drama, or to reframe the tragedy of the times in meaningfully dramatic terms. As a challenge to "inquisitor", the role of "exquisitor" figures in the form of *Discworld* character, **Exquisitor Vorbis**, in a popular fantasy novel by **Terry Pratchett** (*Small Gods*. 1992). Paradoxically it might be inferred that both inquisitor and exquisitor variously endeavour to elicit the exquisite. Other examples are cited separately (*Imaginal Education*, 2003), most notably the novel of Nobel Laureate **Hermann Hesse** (*Magister Ludi*, 1943). The widespread fascination of drama evoking mystery is evident in the popular novels of **Dan Brown** (*The Da Vinci Code*, 2009; *Inferno*, 2013).
- **Holy Grail:** Whatever "it" may be imagined to be, the **Holy Grail** has long been a focus for quests, whether taken seriously or metaphorically, It can be framed as the ultimate possession as a focus for desire -- a dynamic counterpart to the "killer app" in computer jargon. Perhaps not surprisingly it figures in the imagination of the financial community, and can be framed as the elusive goal of global governance (*In Quest of Sustainability as Holy Grail of Global Governance*, 2011). It also figures prominently in popular psychology, together with the Chalice, as separately discussed (*In-forming the Chalice as an Integrative Cognitive Dynamic: sustaining the Holy Grail of global governance*, 2011).
- **Questioning:** Curiously the Holy Grail is typically framed as the focus of a **quest** -- possibly a form of **vision quest**. In myth this is associated with creative response to riddles, namely questions. As implied by the role of either inquisitor or exquisitor, the questioning process is existentially fundamental. Ironically in the current period of questionable financial oversight, a **quaestor** was originally a public official who supervised financial affairs in the Roman Empire. The term continues to be used in some police forces and with respect to **financial oversight for the European Parliament**. Such usage emphasizes the sense in which questioning is vital to confidence and credibility. It might be asked whether it has more systemic cognitive implications, as discussed separately (*Interrelating Cognitive Catastrophes in a Grail-chalice Proto-model: implications of WH-questions for self-reflexivity and dialogue*, 2006). A characteristic of the questioning process, which is of fundamental significance, is its capacity to destroy (or "dissolve") inadequate conceptual containers. Hence the mythical quest for a container for the universal solvent (**alkahest**) capable of dissolving any container. The role of the Zen **koan** is suggestive of this function -- namely questions designed to provoke the "great doubt" -- as explored separately (*Configuring a Set of Zen Koan as a Wisdom Container: formatting the Gateless Gate for Twitter*, 2012). From such a perspective, any acclaimed "quest for new thinking" or a quest for a new paradigm" can fruitfully address the nature of the questioning process implicit in the quest.
- **Gold:** This has continued to play a fundamental role in society through centuries past. Despite the shift from the **gold standard**, it remains a preoccupation today and is intimately associated with a sense of wealth, as a symbol of it, and in the quest for it. It is imaginatively evocative. Gold has been intimately associated with the status of a sovereign -- extending to representation of sovereign authority in gold coin, as noted above. The quest for gold has been fundamental to the conquest and colonial exploitation of distant lands. Curiously, however, very little can be usefully done with it -- in radical contrast to the efforts made to acquire it. Despite that, the seriousness of such quests, and the status of gold today, contrast curiously with the deprecation of the supposed alchemical effort to fabricate gold -- which continues to be mocked as an endeavour of the most extreme foolishness. The contrast turns on the nature of **misplaced concreteness** versus **mystification** in relation to the nature of wealth. In a period of unimaginable public debt, irresponsibly accumulated, the remedy for it (in the form of the fiction of **quantitative easing**) could be considered to exemplify the most extreme form of foolishness. Of particular relevance are assumptions regarding the association between financial wealth and its ability to enable fulfilling meaning. It is in this sense that the symbolic significance of gold merits further attention, whether as the meaning with which sovereigns were associated or as being the essential focus of the alchemical endeavour.
- **Alchemical quest:** The processes of alchemy are readily deprecated by assuming that the associated insights had been completely superseded by those of chemistry. This perception is valid if it is assumed that the preoccupation of alchemy was with the elements and processes which are the focus of the attention of chemistry. As is now being documented by historians of science, some work by so-called alchemists may well have offered insights subsequently developed and refined by chemistry. The perception is however questionable if the "elements" and "processes" of alchemy were primarily of significance as symbols for

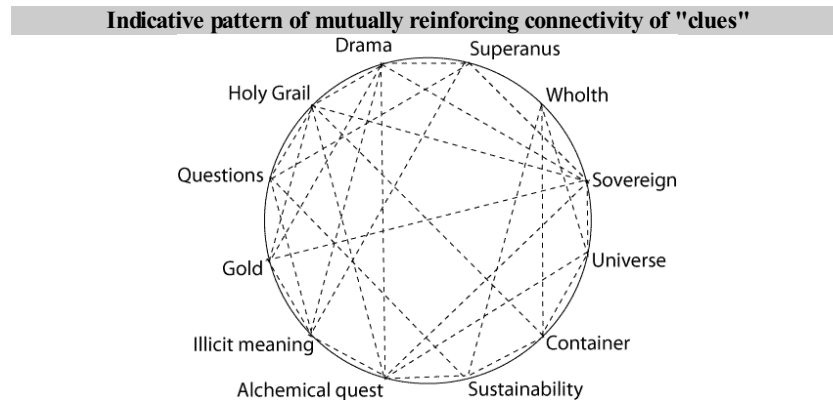
cognitive "states" and "processes", as more recently argued by Steven M. Rosen (*Dreams, Death, Rebirth: a multimedia topological odyssey into alchemy's hidden dimensions*, 2013). Systemic presentations of the "alchemical process" can then be understood as metaphorical code for means whereby inner "wealth" could be engendered -- with its potential implications for "health". Of particular relevance, as a symbolic process, was the manner in which the solar function, traditionally embodied in the sovereign, was related to other functions and processes. In this sense alchemy can be seen as engaging with the cognitive dynamics of the comprehension/communicability/credibility complex. As a fundamental attractor, subsuming the array of human values, this necessarily implies the challenge of the associated delusions (cf. *Human Values as Strange Attractors*, 1993).

Striking at this time is the manner in which "alchemy" is now extensively used as a central metaphor in discussion of global finance, following the 1988 edition of the *The Alchemy of Finance* by [George Soros](#). Examples include: Neil Irwin (*The Alchemists: three central bankers and a world on fire*, 2013), Mehrdad Baghai, et al (*The Alchemy of Growth: practical insights for building the enduring enterprise*, 2000), Luigi Zingales (*Europe's Financial Alchemy*, Project Syndicate, 23 December 2010), Jacques Vallee (*The Four Elements of Financial Alchemy: a new formula for personal prosperity*, 2001). Especially relevant to this argument (as elaborated below) are the insights emerging from recent historical work on the role of the [Hartlib Circle](#) in relation to both the Scientific Revolution and the Financial Revolution of the 17th century, notably by [Carl Wennerlind](#) (*How Alchemists Invented Modern Finance*, *Bloomberg Echoes*, 8 March 2012; *The Alchemical Roots of the Financial Revolution*, *Berfrois*, 14 March 2012).

- **Illicit meaning:** Attention was drawn above, citing the case of Galileo and Sheldrake, to the manner in which new insight is necessarily "illicit" in relation to prevailing dominant forms. Rather than simply evoking regret and condemnation, there is a case for integrating the hidden and the unsaid, together with incomprehension, into the nature of the processes with which engagement is required (*Global Strategic Implications of the "Unsaid"*, 2003). This could be considered appropriate to learning and its counterpart -- namely the erosion of memory, most notably as a consequence of aging (*Societal Learning and the Erosion of Collective Memory*, 1980). The intriguing quality of the illicit is evident in the attraction of secrets -- as evoked in much popular drama. As "confidentiality", the unsaid is fundamental to the current operation of the financial system, which benefits so extensively from lack of transparency.
- **Sustainability:** As is widely noted, the current global civilization is faced with a challenge of "sustainability". Beyond the definitions only too readily offered, there is however the mystery as to why its essential nature remains a challenge to comprehension in practice. Reference was made above to sustainability as effectively the "Holy Grail" of global governance. Arguably the challenge lies far less in the manner in which resources are exploited and recycled, however appropriate that may be. The challenge may well lie in the meaningful psychological engagement with those material (tangible) processes -- understood as symbols of (intangible) cognitive processes. The challenge of governance may indeed be framed in terms of engaging with an [adaptive cycle](#), as argued by [Thomas Homer-Dixon](#) (*The Upside of Down: catastrophe, creativity, and the renewal of civilization*, 2006). However it is as likely to require engaging with the psychology of risk-taking and surprise, so fundamental to the financial speculation which has engendered the current crisis, as argued by [Nassim Nicholas Taleb](#) (*Antifragile: how to live in a world we don't understand*, 2012; *The Black Swan: the impact of the highly improbable*, 2007)
- **Container:** Eliciting meaning implies that this must necessarily be "contained" in some way, whether understood as a psychosocial habitat or a memory aid. The container may be explored in terms of the geometry of a configuration through which memory can be reinforced (*Metaphorical Geometry in Quest of Globality -- in response to global governance challenges*, 2009; *Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009). Transcending duality, such configurations can be explored as containers for value as associated with their response to light (*Patterning Archetypal Templates of Emergent Order: implications of diamond faceting for enlightening dialogue*, 2002). Constraints on their design as containers for cognitive processes can also be explored in the light of the unique toroidal requirements of nuclear fusion (*Enactivating a Cognitive Fusion Reactor: imaginal transformation of energy resourcing*, 2006).
- **Universe:** The "physical" universe, its nature, scope and origins remains mysterious -- although much continues to be discovered by astrophysics and cosmology. It invites an awe which is curiously absent from consideration of the psychosocial "universe" which an individual or a group may be variously recognized as inhabiting. The acknowledgement of the challenge of "resolving" the nature of the physical universe is far less evident in the case of any psychosocial or cognitive equivalent where there is a marked tendency to assume that "resolution" has been achieved, and that details are of limited significance. Is any such psychosocial universe to be considered "finite but unbounded" or implying a higher dimensionality whose significance calls for consideration in a disciplined manner? What of conventional understanding must necessarily be called into question in the quest for what is implied by the phrase "boundless happiness"?
- **Wholth:** How meaning is contained in an integrative manner to form a universe remains a challenge which may be explored through a variety of frameworks and metaphors. It remains unclear, perhaps necessarily, how "integrative" is to be comprehended, embodied and enacted to ensure the coherence of action over time (*Wholth as Sustaining Dynamic of Health and Wealth: cognitive dynamics sustaining the meta-pattern that connects*, 2013).
- **Sovereign:** A degree of mystery has always been associated with any "sovereign" and the implication of a relation to higher realms of some kind -- a mystery subject to mystification and abusive manipulation. The mystery has been typically associated with gold and its acquisition. As an authority figure, the sovereign is central to a variety of symbol systems. The mystery is partially associated with confusing conflation between a the sovereign as "superior" and the sovereign as "meta" -- a contrast evident in the question of whether a "head of state" should take a "part" in the discourse between political parties. This may be

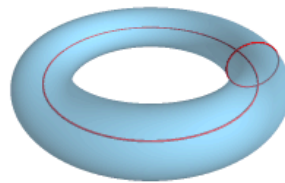
represented symbolically by the capacity of a sovereign to stand astride several domains -- to bestride them. This metaphor can be extended through exploration of "walking" as a metaphor of relevance to the dynamics of transdisciplinarity (*Transdisciplinarity-3 as the Emergence of Patterned Experience: transcending duality as the conceptual equivalent of learning to walk*, 1993).

- **Superanus:** Curiously a paradoxical dimension is evident with respect to the "seriousness" with which the clues above might otherwise be considered. This takes one form in the "disrespect" in which a "sovereign" may be held, exemplified in carnivals and rituals where a sovereign is mocked and ridiculed -- and even symbolically killed. There is therefore a degree of appropriateness to the etymological origin of "sovereign" is Vulgar Latin in the term "superanus", as noted above (Geoffrey Bennington, *Superanus, Theory and Event*, 2005). This accords with the problematic esteem in which heads of state are currently held, in the light of their behaviour and modes of discourse, as explored separately (*Backside to the Future: coherence and conflation of dominant strategic metaphors -- Worshipping the Golden Ass*, 2001).



The animation below can be used to challenge overly simplistic closure on the connectivity between the "clues" as represented in the circular form above. The merit of the animation is that it suggestively relates a symbol of sovereignty (in the form of an orb) with that of holiness (in the form of the toroidal halo). The cognitive implication of the "clues" might be better understood as mapped onto the sphere-torus.

**Animation of transformation between sphere and torus**  
(reproduced from *Wikipedia*)



## Eliciting a universe of meaning from nothing through alchemical processes

There is an extensive literature on "world-making", following the work of [Nelson Goodman](#) (*Ways of Worldmaking*, 1978), who reviewed the ways in which worlds could be created through the arts. The sense of property associated with any "world" so made may be related to a need to defend that ownership by legal means as intellectual property, as discussed separately (*Identity, Possessive World-making and their Transformation Dynamics*, 2012). There is a recognition of the extent to which individuals and groups may live "in their own world", or even "in their own universe". The process may be appreciated and cultivated as a creative action of the imagination (*Imaginal Education: game playing, science fiction, language, art and world-making*, 2003). The elaboration of a universe of meaning features in discussion of [social constructionism](#) ([Peter L. Berger](#) and [Thomas Luckmann](#), *The Social Construction of Reality: a treatise in the sociology of knowledge*, 1967), notably extended to science ([Tom Jagtenberg](#), *The Social Construction of Science: a comparative study of goal direction, research evolution and legitimation*, 1983).

**Creation of a universe of meaning:** As a prelude to further elaboration of the current role of alchemy in engineeringing a universe, it is useful to note a variety of examples through which a credible universe is created -- from nothing:

- Intentional communities and sects -- as with the micronations indicated above
- Manufacture of consent ([Noam Chomsky](#) and [Edward S. Herman](#), *Manufacturing Consent: the political economy of the mass media*, 1988)
- Cultivation of public opinion through "spin", notably for purposes of propaganda and marketing, as articulated by [Edward Bernays](#) (*The Engineering of Consent*, 1947; *Propaganda*, 2004; *Public Relations*, 2004; *Crystallizing Public Opinion*, 2011)
- Cultivation of a culture of fear through a politics of fear
- "Talking up" a policy, or a currency, to sustain its credibility
- Creativity in arts and crafts, as exemplified by the hyperproductivity of Pablo Picasso, and the value now attached to his work
- Confidence tricks and magic tricks through which belief is variously engendered and manipulated
- Humour

- Ritual, as exemplified by the Catholic Mass

These can be variously explored in terms of the various senses of [dematerialization](#), most notably with respect to the economy, as separately discussed ([Dematerialization and Virtualization](#), 2006).

**Creativity as an alchemical process:** The suggestion here is that these fairly well-known processes constitute traces of the essential nature of the alchemical processes through which a coherent pattern of valued meaning is elicited and sustained -- from nothing. Creativity might then be understood as being essentially an alchemical process. It is of course provocatively controversial to explore these processes as "alchemy". An essential point to be made however is that it is in the very nature of these processes that any "thing" should be called into question as a vehicle for meaning and value. Arguably the "thing" fabricated from "nothing" has the character of a [transitional object](#) (as discussed below). Associating what is essentially an experimental process with any given "thing" is therefore fundamentally misleading -- the cognitive challenge moves on as a consequence of perceived failure of the experimental focus.

**Newton as exemplar:** The multifaceted role of Isaac Newton merits careful attention in this respect. In addition to his contribution to **science**, in the period of the emergence of the Royal Society, his very extensive involvement with "**alchemy**" has been repudiated by contrast to the "thing" on which formalized science has subsequently focused -- considered by many to be successfully and fruitfully in the eyes of many.

Newton now emerges as being at the nexus of initiatives readily described in terms of the **development** of society -- as articulated through the preoccupations of the [Hartlib Circle](#). The latter could be usefully seen as a precursor of what the European Commission now terms a **network of excellence**. However Newton was a devout Christian, although his interest in **spirituality** would seem to have been far more intrinsic to his scientific endeavours than Church authorities would have wanted in the light of their dogmatic framework. Potentially more intriguing for the following argument is his role as a **financier** in the emerging financial system -- as head of the Royal Mint, and effectively England's central **banker**.

Each of these roles can be disparaged as inconsequential in the light of the worldview of the other -- potentially also a characteristic of the subtle "alchemical" process calling for exploration. The levels of mystification cultivated by the need for secrecy (Newton wrote in code, like Leonardo da Vinci), or the exploitation of it by different groups (citing Newton as an icon) -- also characteristic features. Many records of the period have been lost -- perhaps deliberately -- or are only now receiving less biased attention, as within [The Newton Project](#). He lived through the period of the trial of Galileo Galilei.

Useful clarifications of the historical assessment of the complexity of Newton's role are now available (John T Young, [Isaac Newton's alchemical notes in the Royal Society. Notes and Records of the Royal Society](#), 2006; Ann Talbot, [Isaac Newton's papers up for sale](#), [World Socialist Web Site](#), 26 September 2000).

**Invention of modern financial credit currency by alchemists:** The role of "alchemists" in the development of modern finance is helpfully clarified by historian [Carl Wennerlind](#) ([How Alchemists Invented Modern Finance](#). [Bloomberg Echoes](#), 8 March 2012) significantly in the newsletter of an agency central to the world's financial system. Summarizing the argument he has elaborated elsewhere ([Casualties of Credit: the English Financial Revolution, 1620-1720](#), 2011) he notes that although George Soros may only have used alchemy as a colourful metaphor to point to the wondrous generative capacity of credit, it turns out that there is a much deeper connective bond between alchemy and modern finance, dating back to the 17th century, when the modern financial system was just forming.

The amazing capacity of credit to create value -- and to destroy it -- has often been compared to alchemy. After the alchemists failed in their search for the philosopher's stone, the mythical substance that could turn ordinary metals into gold, the power of creating something out of nothing has come to rest solely in the hands of the financiers...

The big problem facing England at the time was a scarcity of money. Because the country lacked an adequate circulating medium, commerce was lagging, textile manufacturing was in a tailspin and various unemployment-related social problems kept on increasing. As a solution, pamphleteers famously called for trade restrictions to promote an inflow of precious metals from abroad.

By mid-century, however, a fundamentally different way of thinking about the economy and money emerged. It was informed by Francis Bacon's insistence that mankind has the capacity to restore dominion over nature through the pursuit of pragmatic science, and the alchemists' understanding of nature as a constantly evolving organic process, the speed of which can be hastened by human intervention.

Wennerlind shows how a group of adherents to this view -- social reformers, scientists and political economists -- gathered around the London-based Prussian emigre Samuel Hartlib, forming what became known as the Hartlib Circle (as indicated above). They disseminated advice on how to transcend nature's scarcity by advancing agriculture, horticulture, botany, mechanics, manufacturing, chemistry, fishing and so on. They hoped to spark a process of infinite improvement that would gradually eliminate all social, economic and political problems and eventually establish a kingdom of heaven on Earth. As Wennerlind indicates:

For this process of infinite improvement to become a reality, it was more important than ever to solve the scarcity-of-money problem. The Hartlib Circle first pursued a large-scale alchemical project. They brought together some of the most renowned alchemists and provided them with the requisite resources to conduct their laboratory experiments, hoping that they would discover the magic tincture whereby lead could be turned into gold. However, as their transmutation efforts failed, they turned their attention to other ways of expanding the money stock. They published the first proposals for a generally circulating credit currency, which provided the basic inspiration for the eventual creation of the Bank of England in 1694.

The first credit-money proposal -- to issue paper money backed by land -- was written by William Potter and published in his pamphlet "The Key of Wealth" (alchemists often referred to the philosopher's stone as "the key"). He argued that because his credit currency had the potential to facilitate the infinite-improvement process, its "capacity of enriching this Nation, is in a sort infinite." Indeed, another member of the Hartlib Circle even suggested that a well-functioning system of credit was capable of "multiplying the stock of the Nation, for as much as concerns trading in Infinitum: In breife, it is the Elixir or Philosophers Stone."

The link between alchemy and credit thus existed on three levels. Much like Soros, the first proponents of a generally circulating credit currency used alchemy as a metaphor to describe the value-producing potential of credit. They also viewed alchemy and credit as different solutions to the same problem: the scarcity of money. Most importantly, given that the political-economic worldview of the Hartlibians provided the intellectual foundation for the creation of the modern world of credit, the case can be made that there was a conceptual link between alchemy and credit -- one that was more profound than mere metaphor.

As Wennerlind explains elsewhere (*The Alchemical Roots of the Financial Revolution*, Berfrois, 14 March 2012), his book *Casualties of Credit* (2011) argues that there was indeed a link between alchemy and credit, but one that goes deeper than credit money replacing alchemy as the solution to the scarcity of money problem. Specifically he suggests that the new political economy that laid the foundation for the Financial Revolution was greatly influenced by the Scientific Revolution, which included alchemical, as well as, Baconian and probabilistic thinking:

Money was assigned a central role in the Hartlib Circle's infinite improvement project. However, they employed a very different notion of money than their predecessors. By no longer thinking of the world as comprised of finite wealth and static hierarchies, within which money's role was to balance and maintain justice, the Hartlib Circle pioneered a different conceptualization of society and role of money with it. By shifting to a worldview in which the only constant was continuous change, growth and improvement, the role and responsibility of money consequently changed. The main challenge now was to find a way to expand the money stock so that it could keep pace with the ever growing world of goods. For this to be possible, a much more flexible monetary system had to be developed....

With respect to the the failure of alchemical transmutation to provide mankind with a lever to control the money stock, Wennerlind suggests that members of the Hartlib Circle were encouraged to focus on another expedient promising to generate the same set of benefits as alchemy.

They turned their attention towards finding a way to establishing a widely circulating credit currency, either by creating a bank or by reconfiguring the existing network of private credit instruments so that they would circulate more widely. In addition to offering solutions to the same problems, metallic transmutation and credit money shared the same underlying idea of using an expansion in the money stock to facilitate the infinite improvement process. As such, the idea of making money through metallic transmutation or credit were both rooted in the same alchemical and Baconian worldview and were part of the same universal reform project.

**Current application of "alchemy" to finance:** Following Soros, the many examples include [Luigi Zingales](#) (*Europe's Financial Alchemy*, Project Syndicate, 23 December 2010) who highlights the role of [collateralized debt obligations](#) (CDOs), namely the infamous special-purpose vehicles that transformed lower-rated debt into highly rated debt. In his terms:

CDOs are a form of financial alchemy: special-purpose vehicles that buy the financial equivalent of lead (low-rated [mortgaged-backed securities](#)) and finance themselves mostly with the financial equivalent of gold (highly sought-after [AAA bonds](#)).

These and other devices were promoted as a way to reduce risk. However he notes how this could send the entire banking system into tailspin. He notes that this alchemy is possible through its reliance on overcollateralization, an assumption on the joint distribution of possible outcomes, and the inevitable seal of approval of the three major credit rating agencies (see [Credit rating agencies and the subprime crisis](#)).

The outcome can be interpreted for the purpose of this argument as a fundamental failure in confidence and credibility. As with the transmutation of base metals into gold, the insight to be derived concerns the unquestioned preoccupation with the "thing" in terms of which credible transformation was expected.

**Conflation of "alchemical" and "magical" processes":** A further example of current use of the alchemy metaphor in finance is the recent work of [Neil Irwin](#) (*The Alchemists: three central bankers and a world on fire*, 2013), in describing the role of key central bankers in the current financial crisis. He focuses on the the manner in which these bankers were instrumental in creating something out of nothing through quantitative easing -- effectively printing money. The is accord with the original theme of Soros.

Of particular relevance to this argument is Irwin's introductory citation to the effect that:

Sir Isaac Newton, it was once said, was not in fact the first modern scientist, but the last of the alchemists (This was said, as it

happens, by an economist of wide ranging intellectual interests named [John Maynard Keynes](#)). Alchemists were an insular group, speaking a language that outsiders could not grasp and disdainful of the uninitiated. Those outside the club viewed it as a shadowy cabal. (pp. 24-25)

Strangely Irwin's citation of Keynes does not correspond to that of [other variants](#) such as: *Newton was not the first of the age of reason, he was the last of the magicians.*

This confusion helps to emphasize the difficulty currently faced by science and rationality. "Magic" is readily used, like "alchemy", to condemn the possibility of alternatives to the current state-oriented worldview. As noted above, the editor of Nature condemned such an alternative perspective with the phrase: *Sheldrake is putting forward magic instead of science, and that can be condemned, in exactly the language that the popes used to condemn Galileo, and for the same reasons: it is heresy.* (BBC Documentary, 1994). With respect to engendering confidence, the role of magic is variously addressed in relation to money by [Hans Christoph Binswanger](#) (*Money and Magic: a critique of the modern economy in the light of Goethe's Faust*, 1994; *The Growth Spiral: money, energy, and imagination in the dynamics of the market process*, 2012).

With respect to creative thinking and its ability to elicit new kinds of meaning, this recalls the [three laws of prediction](#) formulated by [Arthur C. Clarke](#) (*Hazards of Prophecy: the failure of imagination*, 1962) especially the third:

1. When a distinguished but elderly scientist states that something is possible, he is almost certainly right.
2. When he states that something is impossible, he is very probably wrong. The only way of discovering the limits of the possible is to venture a little way past them into the impossible.
3. Any sufficiently advanced technology is indistinguishable from magic.

Reframing the phrasing of Keynes, it might be asked who has proven to be *not the first of the age of imagination, but rather the last of the Newtonian mechanics*. The point to be made being that, despite Newton's repudiated alchemical endeavours, [Newtonian mechanics](#) is now used as indicative of the constrained physical framing characteristic of the development of classical mechanics. This is associated with the physical concepts employed by and the mathematical methods invented by Newton himself, in parallel with Leibniz, and others.

By comparison, the insights and technologies subsequently explored by physics could be readily considered "indistinguishable from magic". The question, suggested by the condemnation of Sheldrake by "science", is how to recognize the possibility of processes that are even more "magical" -- process which may be vital to survival of global civilization. The argument here is that **alchemy is effectively a meta-process about comprehension and as such recognizes the cognitive processes enabling new insights and meanings to be elicited**. The etymological relation between "magic" and "imagination" is appropriate.

**Misplaced concreteness:** The intriguing question raised by engagement with "alchemical processes" in any context relates to illusory reification -- the framing of the "thing" to which value is attached. Gold was one such -- and remains a preoccupation for many as a particular understanding of wealth. A psychological shift from a metaphorical "gold standard" encourages obsessive attention to other vehicles of value -- exemplified by monetary and other tokens, credit facilities, paper qualifications, "honours" and the like. These are typically pursued as "property" to be acquired for "selfish" purposes, to the relative disadvantage of others. Such "selfishness" is only associated with "self-reflexiveness" when a constrained alchemical process fails to sustain the engendering of meaning -- when the experiment, so defined, fails.

Curiously this becomes evident in the quest for "solutions" in relation to the "thing" -- currently evident with respect to finance, wealth, and debt. In terms of the argument above, the solutions envisaged preclude the process of "resolving" through which a more subtle "thing" might be recognized as a vehicle for value. Of relevance is the strange role of time as being necessary for the learning process to come to fruition. At present, with respect to both finance and sustainability, the challenge is one of enabling credibility over time as a means of eliciting coherent meaning.

**Historical succession of "alchemical" preoccupations:** Such indications suggest that the focus of collective preoccupation with "alchemical processes" may now be fruitfully seen in terms of a succession of three (experimental) stages, each effectively superseding its predecessor, whatever the degree of overlap and co-existence:

- alleged preoccupation with transmutation of base metals into gold -- discovered to be a failure by the Hartlib Circle, and long repudiated by science and ridiculed from that perspective
- alleged preoccupation with engendering credit facilities an circulating currency fundamental to financial systems and economic development -- currently subject to intense criticism, given the financial crisis, the accumulation of public debt, and the inability to address challenges collectively and coherently
- emergent concerns with alternatives to "growth" and "materialism" -- exemplified by the acclivities of many intentional communities, and notably by the preoccupation of Bhutan with [gross national happiness](#)

Provocatively, but appropriately, each stage focuses on a "thing" usefully to be understood as a "[transitional object](#)" (as noted above). Otherwise termed a "comfort object" or a "security blanket" (reminiscent of some current security preoccupations), such an object is recognized as especially important to the psychological development of children and for therapeutic al purposes in times of disaster. In the case of children, as separation between the "me" from the "not-me" occurs, in evolves from complete dependence to a stage of relative independence, it uses transitional objects.

The process of "alchemy" -- *solve et coagulo* -- can then be understood as akin to the "antifragility" articulated by Nassim Nicholas Taleb (*Antifragile: how to live in a world we don't understand*, 2012) in that it is a process of "anti-attachment" and thrives on the questions to which premature attachment eventually gives rise. Provocatively it could be suggested that as a cognitive process, "alchemy" -- through *solve et coagulo* -- is the generic version of the current preoccupation of science and technology with "research and development" (R

and D). Use of "generic" is appropriate since it calls into question the methodology itself -- something science is clearly unable to do. Alchemy is a challenge to conceptual "lock-in" in that it recognizes that as a condition within alchemical processes, as with the religious methodology science has claimed so arrogantly to render meaningless.

Also recognizable in this succession of phases is both the inappropriateness and misguidedness attributed to previous phases and the mystification enthusiastically associated with an emergent phase (possibly within the contexts of secret societies). The latter is now to be seen both with respect to the abstruse nature of string theory and the enthusiastic attribution of (spiritual) significance to quantum consciousness and the like.

**A new locus of "alchemical reflection"?** Framed in this way, in the light of the historical precedents noted, the question might be asked: **Where is to be found the "Hartlib Circle" with preoccupations appropriate to the challenge of the present time?** What processes can enable the current "mindset" to evolve -- to enable "thinking outside the box" to which it is currently confined by state-oriented thinking?

Emerging as it did from the early innovative initiatives of the Hartlib Circle, there is great historical irony to the current effort of [The Royal Society](#) to address the challenges of the times through its recent report (*People and the Planet*, 2012) -- echoed in a key article in its proceedings (Paul R. Ehrlich and Anne H. Ehrlich, *Can a collapse of global civilization be avoided? Proceedings of the Royal Society (B)*, 7 March 2013). As reviewed, the report unfortunately exemplifies the unimaginative constraints characteristic of current scientific endeavour (*Scientific Gerrymandering of Boundaries of Overpopulation Debate*, 2012).

Another potential functional equivalent to the Hartlib Circle is the [Club of Rome](#). This launched its own report just weeks after that of The Royal Society ([Jorgen Randers](#). *2052: A Global Forecast for the Next Forty Years*, 2012). Although concerned with similar issues and the need for similar strategic responses, the reports do not acknowledge each other's existence. The former was the work of an eminent group, the latter of an eminent individual variously advised by a group. How imagination is to be elicited is not addressed, as argued in a review (*Engendering 2052 through Re-imagining the Present*, 2012). In the light of the financial dimensions of the above argument and the role of processes of denial, the title of the subsequent report evokes an appropriate degree of irony ([Anders Wijkman](#) and [Johan Rockström](#), *Bankrupting Nature: denying our planetary boundaries*, 2012).

As discussed separately, there is a case for imagining that an appropriate locus to explore eliciting a universe of meaning from nothing might well be a University of Ignorance (*University of Ignorance: engaging with nothing, the unknown, the incomprehensible*, 2013; *Emerging Significance of Nothing*, 2012). Nothing is increasingly recognized as mattering, as explored by [Ronald Green](#) (*Nothing Matters: a book about nothing*, 2011). Such a context might mitigate against the tendency to misguidance and misleadership as a consequence of conceptual lock-in and imaginative failure (*Framing the interplay of (mis)leadership and (mis)followership: challenges and responsibilities*, 2007).

**Process time:** Implicit in any process framing is the role of time, whether historical time or that of the learning processes associated with any initiative. A central feature of the "magic" of modern physics is a high degree of engagement with the nature of time. The account of [Dan Falk](#) (*In Search of Time: the history, physics, and philosophy of time*, 2010) argues that:

Time surrounds us. It defines our experience of the world; it echoes through our every waking hour. Time is the very foundation of conscious experience. Yet as familiar as it is, time is also deeply mysterious. We cannot see, hear, smell, taste, or touch it. Yet we do *feel* it—or at least we *think* we feel it. No wonder poets, writers, philosophers, and scientists have grappled with time for centuries.

Such preoccupations are echoed by [Lee Smolin](#) (*Time Reborn: from the crisis in physics to the future of the universe*, 2013):

What is time? This deceptively simple question is the single most important problem facing science as we probe more deeply into the fundamentals of the universe. All of the mysteries physicists and cosmologists face -- from the Big Bang to the future of the universe, from the puzzles of quantum physics to the unification of forces and particles -- come down to the nature of time.

The recent reports cited on the global crisis highlight the lack of time. This is echoed in both the business and lifestyle concerns of individuals ([Jeremy Rifkin](#), *Time Wars: the primary conflict in human history*, 1987). As discussed separately (*Strategic Embodiment of Time: configuring questions fundamental to change*, 2010):

Do such arguments suggest the value of considering how individuals and global civilization are embedded in time in ways of relevance to the governance of sustainability, as previously explored (*The Isdom of the Wisdom Society: Embodying time as the heartland of humanity*, 2003)? Does the metaphor of "timeships" offer a fruitful complement to preoccupation with "spaceships" (*Embodying a Timeship vs. Empowering a Spaceship*, 2003)? Does death result from exhausting the cognitive geometry on which an individual (or a civilization) chooses to live -- as an extension of the argument of [Jared Diamond](#)? (*Collapse: How Societies Choose to Fail or Survive*, 2005).

Given the current preoccupation with time in astrophysics and cosmology, it can be argued that there are insights into the temporal process of eliciting meaning to be derived from the pattern of thinking regarding the creation of the universe -- from nothing as currently suggested ([Lawrence M. Krauss](#), *A Universe from Nothing: why there is something rather than nothing*, 2012).

Curiously [Martin Rees](#), the past-president of The Royal Society and [Astronomer Royal](#) (as Professor of Cosmology and Astrophysics), has now launched a project to explore "existential risks" and their denial (*Denial of Catastrophic Risks*, *Science*, 339, 8 March 2013).

Seemingly however, as ever in the case of "science", this precludes consideration of the psycho-methodological issues with which it is argued here that alchemy is preoccupied -- even though reference is specifically made to "denial" and "existential" (cf. *Map of Systemic Interdependencies None Dares Name: 12-fold challenge of global life and death*, 2011).

## Geometry of meaning: an alchemical Rosetta Stone?

**Alchemy as a meta-metaphor:** Being an "out of the box" process, alchemy is not "what one thinks it is" -- rather "it" is better understood as being about the process of thinking about "its". It might be said to be a process of being otherwise by being other wise (*Human Intercourse: Intercourse with Nature and Intercourse with the Other*, 2007; *Intercourse with Globality through Enacting a Klein bottle*, 2009). It may be best understood indirectly through metaphor (as with the encounter of Perseus with the Gorgon), as being a "science" of metaphor, if not a technology, perhaps as implied by the work of Erik Davis (*TechGnosis: Myth, Magic, and Mysticism in the Age of Information*, 1999).

Like the mercury which is a major focus of its traditional commentaries, alchemical processes are "cognitively tricky" -- emphasizing self-reflexivity through the mirroring offered by "quicksilver". Alchemy is essentially about itself as a meta-metaphor -- about the process of engendering reassuring transitional objects in which confidence may be invested for a time. Religion, science and the monetary system offer such temporary comfort through the states whose recognition they enable -- as distractors from more fundamental existential questions.

**Insights into creative governance from technomimicry:** Tentatively, the argument can be taken further in the light of the explorations of Arthur M. Young (*The Geometry of Meaning*, 1976). He was the designer of Bell Helicopter's first helicopter, the Model 30, and inventor of the stabilizer bar used on many of Bell's early helicopter designs. He sought to generalize insights into the control of the flight of a helicopter -- which he framed metaphorically through 12 standard physical "measure formulae" -- in the quest for the design a "psychopter".

Young's approach might also be framed in terms of technomimicry, as separately discussed (*Engendering a Psychopter through Biomimicry and Technomimicry: insights from the process of helicopter development*, 2011). It is through insightful "mimicry" of the technology that innovation essentially takes place -- mysteriously eliciting new meaning from nothing. The widely acknowledged mysteries of the creative process have implications the development of this argument in that it recognizes a complex of potentials and constraints indicated by apophysis and autopoiesis. This is consistent with the aversion of innovators to "explaining" the process and progress of their "work". The implications go further in the case of alchemy.

The essentially controversial intention of Young can usefully be framed in terms of the repudiated alchemical endeavour of "transmuting base metals into gold". He chose as his "base metals", a set of 12 standard formulae of physics, those most ironically characteristic of "Newtonian mechanics". His purpose was to elicit the design of a psychopter as a "winged self" (*The Bell Notes: a journey from physics to metaphysics*, 1979). The cognitive "transmutation" could be framed in terms of what is readily termed "generalization". It could be better understood in musical terms as "transposition of key" (*Paradigm-shifting through Transposition of Key: a metaphoric illustration of unexplored possibilities for the future*, 1999). Douglas Hofstadter "played" with such a musical metaphor in his original work (*Gödel, Escher, Bach: an Eternal Golden Braid*, 1979). He has developed the implications in his most recent work with Emmanuel Sander (*Surfaces and Essences: analogy as the fuel and fire of thinking*, 2013).

12 "measure formulae" distinguished and clustered by Arthur Young (reproduced from <i>The Geometry of Meaning</i> , p. 102)		
Actions	States	Relationships
Position -- L	Moment -- ML	Power -- $ML^2/T^3$
Velocity -- L/T	Momentum -- ML/T	Inertia -- $ML^2$
Acceleration -- L/T <sup>2</sup>	Force -- ML/T <sup>2</sup>	Action -- $ML^2/T$
Control -- L/T <sup>3</sup>	Mass control -- ML/T <sup>3</sup>	Work -- $ML^2/T^2$

Young indicates with respect to this table: *The last column is displaced one place.., in order to have the three members on each line 120 degrees apart* (p. 102) ... in the circular configurations presented below

**Universality of 12-fold patterns:** Young comments extensively on the significance of each of these 12 in terms of the cognitive processes of learning/action cycles. Of relevance to the above argument is the co-presence of "states" and "actions" -- the latter implying the process dimension otherwise lacking in a "state-focus". Recognition of a "relationship" dimension suggests a valuable means of transcending that duality. These distinctions have been interpreted separately for a variety of psychosocial contexts (*Typology of 12 complementary strategies essential to sustainable development*, 1998; *Characteristics of phases in 12-phase learning / action cycles*, 1995; *Typology of 12 complementary dialogue modes essential to sustainable dialogue*, 1998).

The requisite cognitive diversity within such a pattern is fruitfully explored in the quest for "operacy" through the work of Edward de Bono (*How to Have Creative Ideas*, 2012). His 6-fold generalization can be interpreted as offering set of 6 binary dimensions with 12 polar variants (*Six Frames For Thinking About Information*, 2008).

Curiously there is a widespread tendency to favour a 12-fold articulation of conventional strategic initiatives, as documented separately from web resources (*Checklist of 12-fold Principles, Plans, Symbols and Concepts*, 2011). This cognitive disposition reinforces the potential of Young's approach, as separately explored (*Eliciting a 12-fold Pattern of Generic Operational Insights: recognition of memory constraints on collective strategic comprehension*, 2011; *Enabling a 12-fold Pattern of Systemic Dialogue for Governance*, 2011).

**Magnum Opus of global civilization?** Framed in terms of alchemy, Young effectively gives focus to its classical preoccupation with a **Magnum Opus**. This was occasionally framed in terms of 12 phases. The provocative challenge of this time of crises could then be

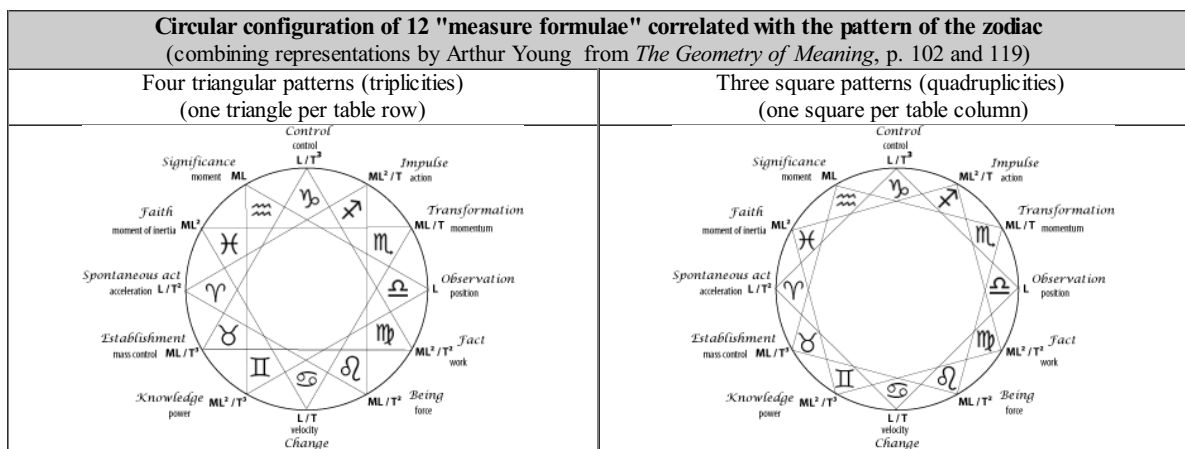
framed through a question such as: **How is any Magnum Opus of humanity's global civilization to be understood?** Can the elements of such a Magnum Opus be distinguished as processes implicit in strategic reports purporting to respond to these challenges -- as in the following?

- The key strategic report of the Royal Society (*People and the Planet*, 2012), as mentioned above, makes 9 recommendations. Discussed separately (*Report recommendations and relevant strategic questions*, 2012), what might have been neglected in systemic terms?
- The key strategic report of the Club of Rome (*2052: a Global Forecast for the Next Forty Years*, 2012), also mentioned above, makes no recommendations as such, focusing (in despair) on *What Global Society Ideally Should Have Done*. However it concludes with a set of 12 "shoulds" indicative of what individuals should do. Treating the elements of the report as "base metals", the review of it offers an imaginative reframing in three sections:
  - *Imaginative consciousness required to engage with the future?*
  - *Reframing the 2052 Report through imaginative inquiry*
  - *Re-imagining the future through the present: re-engaging Dreamtime*
- The latest Club of Rome report (*Bankrupting Nature: denying our planetary boundaries*, 2013), mentioned above, offers "12 key messages". Can these be understood in systemic terms -- with their psychosocial implications (*Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity*, 2009)

Do these sets of "recommendations", "shoulds", or "messages" imply a Magnum Opus? How are the processes in questions to be comprehended as interrelated? How are they to be communicated meaningfully and credibly -- such as to elicit confidence?

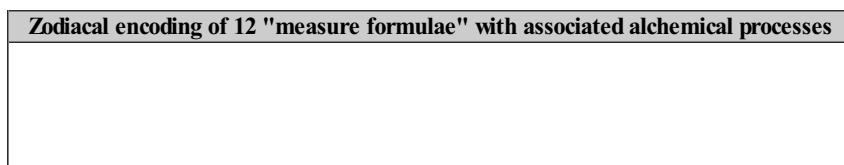
**Zodiac as a memorable popular configuration:** Young uses the traditional pattern of 12 zodiacal signs to provide a circular (mnemonic) encoding of the learning/action cycles in terms of their psychological implications. The pattern constitutes a commonly multifaceted container through which to engage with the infinite potential of a universe in all its senses. Young sees this pattern as constituting a **Rosetta Stone** of meaning -- readily associated with the **philosopher's stone** traditionally engendered by the Magnum Opus of alchemy. The current implications of such a "stone" metaphor can be variously explored (*Transforming and Interweaving the Ways of Being Stoned: imagination, promise, rocks, memorials, petrification*, 2012). It could be understood as a process of "enstating" or "instating".

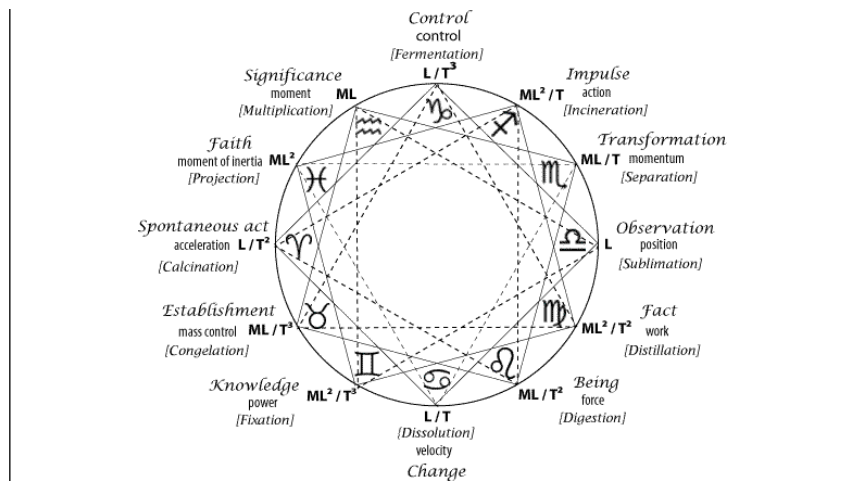
The elements of the table above can then be presented in two configurations, as indicated in the images below -- with the addition of the psychological analogues to each element on which he comments extensively. Most of **these terms correspond to the vocabulary of strategic change management** -- as would be required for the governance of a psychosocial vehicle (just as their physical equivalents are for a helicopter).



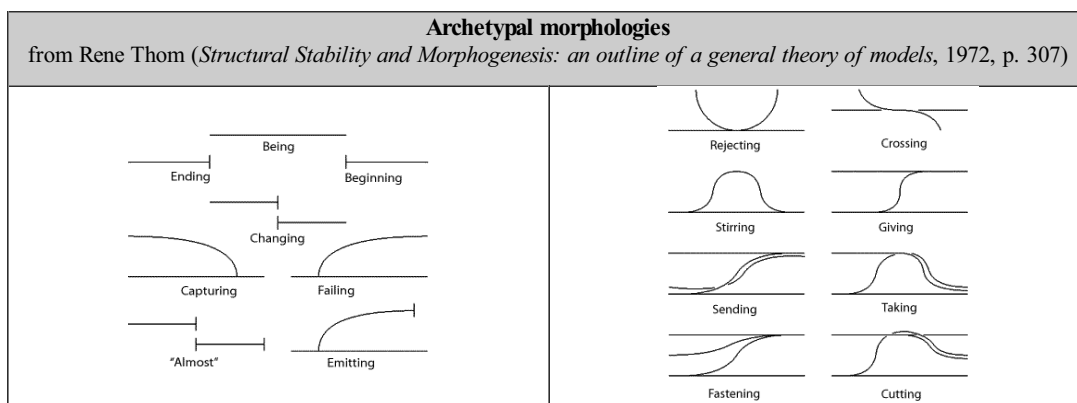
These two distinct cyclic patterns can be fruitfully seen as implying the experiential challenge recognized by a cyclist in riding a bicycle - and in learning to ride. Verbal explanation does not convey the nature of viable dynamic balance, nor how this should be comprehended. The metaphor could be used to reframe the challenge of governance in "cycling" around the **adaptive cycle**. More intriguing is the potential consequence of the constraint on human memory described in the much-cited paper by **George A. Miller** (*The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*, 1956). This would imply a sense in which the only means of "encompassing" a pattern of 12 is by "cycling through" combinations of 3 and 4 phases -- as indicated in the two schematics.

**Correlating alchemical processes with the zodiac:** With the reservations indicated above regarding the tricky cognitive nature inherent in the creativity of the alchemical process, there is a case for reviewing the 12 phases of the process as they have been traditionally associated with the signs of the zodiac (although other patterns of phases are also identified). The names for these **alchemical processes** (as indicated by *Wikipedia*) have been added to the circular representation in the schematic below. This combines the triangular and square patterns of connectivity in the schematics above





Use of the signs of the zodiac in the above manner, if only for mnemonic purposes, is of course questionable because of their problematic associations with a deprecated methodology. However as forms which have held valued psychosocial distinctions over centuries they merit a degree of attention, especially if they have a degree of mnemonic value in engaging with complexity. It is however striking to consider that they may be seen as performing the same function as the distinctions provided by [Rene Thom](#) between "archetypal morphologies" -- notably for semiotic purposes. He presents the set of 16 indicated below, of which 12 merit comparison with the functions indicated by the signs of the zodiac, and possibly even their forms. The first 4 (top left, below) could be considered "primitives". Such a comparison is even more justified by Thom's subsequent consideration of the pattern below in terms of their cognitive implications as processes, following his semiotic generalization (*Esquisse d'une Sémiophysique: physique aristotélicienne et théorie des catastrophes*, 1989).



As noted by Thom with respect to his approach:

It may seem difficult to accept the idea that a sequence of stable transformations of our space-time could be directed or programmed by an organizing center consisting of an algebraic structure outside space-time itself. The important point, as always, is to regard it as a language designed to aid the intuition of the global coordination of all the partial systems controlling these transformations. (1972, p. 119)

One of the basic postulates of my model is that there are coherent systems of catastrophe (**chreods**) organized in archetypes and that these structures exist as algebraic entities independent of any substrate, but it must not be forgotten that the substrate does have a part fundamental in the dynamic of these forms. (p. 316)

From where, then, does our feeling of beauty come? From the idea that the work of art is not arbitrary, and from the fact that, although unpredictable, it appears to us to have been directed by some organizing center of large **codimension**, far from the normal structures of ordinary thought, but still in resonance with the main emotional or genetic structures underlying our conscious thought. (p. 316)

So what I am offering here is not a scientific theory, but rather a method: the first step in the construction of a model is to describe the dynamical models compatible with an empirically given morphology, and this is also the first step in understanding the phenomena under consideration. It is from this point of view that these methods, too indeterminate in themselves, lead not to a once-and-for-all explicit standard technique, but rather to an art of models. (p. 323)

Many of my assertions depend on pure speculation and may be treated as day-dreams, and I accept this qualification -- is not a day-dream the virtual catastrophe in which knowledge is initiated? At a time when so many scholars in the world are calculating, is it not desirable that some, who can, dream? (p. 325)

The implications of Thom's work, notably in relation to psychological types, are discussed separately [Potential emergence of coherent transformational connectivity](#) (in the context of *In Quest of a Dynamic Pattern of Transformations: sensing the strange attractor of an*

*emerging Rosetta Stone*, 2012). Thom is of course renowned for his work on *catastrophe theory*, to which the above morphologies are naturally related. This suggests that the creative process is a succession of elementary catastrophes -- phases which can be characterized and denoted by the zodiac signs. Cognitively these catastrophes are potentially related to questions, as discussed separately (*Conformality of 7 WH-questions to 7 Elementary Catastrophes: an exploration of potential psychosocial implications*, 2006).

Rather than seeking inspiration from the helicopter, whose operation few understand, the 3-fold and 4-fold circular patterns above could be compared to the *front derailleur* and *rear derailleur* on a *multi-gear bicycle*. One derailleur offers 4 possible gears -- to be compared with the 4 catastrophes with 1 active variable (*fold catastrophe*, *cuspid catastrophe*, *swallowtail catastrophe*, *butterfly catastrophe*). The other derailleur offers 3 possible gears -- to be compared with the 3 catastrophes with 2 active variables (*hyperbolic umbilic catastrophe*, *elliptic umbilic catastrophe*, *parabolic umbilic catastrophe*). Together, any one of the 4 with any one of the 3, this offers 12 possible "cognitive gears" -- 12 operational modalities between which to choose according to circumstances.

Thom's highly innovative transdisciplinary work is now largely deprecated, strangely echoing repudiation of Isaac Newton's preoccupation with alchemy. There is some irony to Thom's use of *chreod*, given a related notion (*creode*), and the challenge of comprehension of the geometrical consideration he proposes, as with that of fundamental symmetry more generally (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008). Provocatively, creode could be explored as indicative of a "way" of creative comprehension -- combining credo, creativity, and credibility -- namely "something to believe in". This suggests an exploration of an interweaving of mathematics and theology (*Mathematical Theology -- Future Science of Confidence in Belief Self-reflexive: global reframing to enable faith-based governance*, 2011).

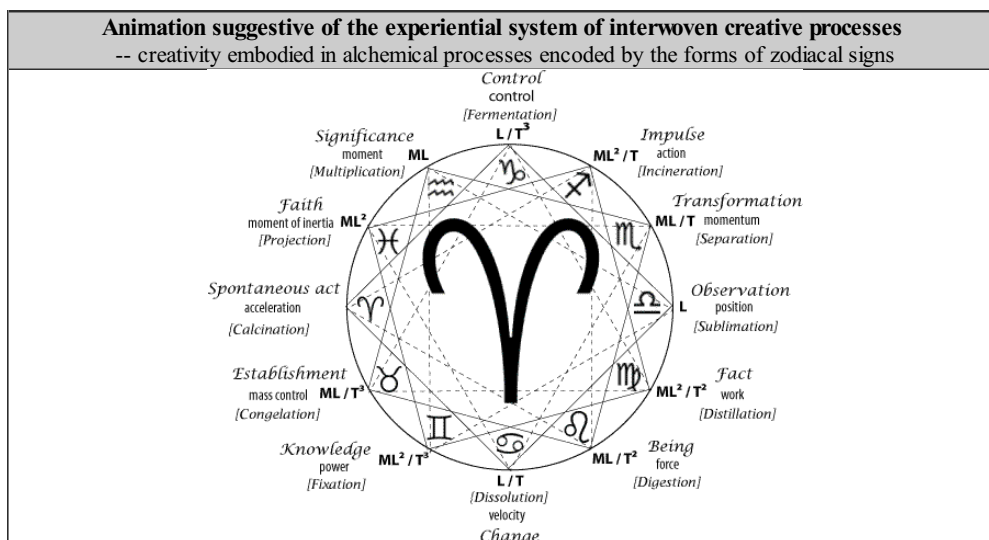
Given the unresolved dynamics between various cognitive "ways", there is indeed a case for more radical reflection, as implied by *Stephen Prothero* (*God Is Not One: the eight rival religions that run the world -- and why their differences matter*, 2011). Prothero's pattern could be fruitfully challenged as corresponding to different styles of "catastrophe" (with one "too many"), or as a subset of 12 "religions" (with four "unrecognized"). Widely recognized as "gods ruling the world", the missing four" might include: "money", "combat" (sport, military), "distraction" (alcohol, drugs, etc), and "sex". Classical Greece and Rome may have been more perceptive in recognizing 12 "gods"-- the *Dodekatheon* and the *Dii Consentes* respectively.

**Enabling a sense of the dynamics of the creative process:** There is huge irony to the use of the circular schematic above to configure the phases of the creative process. This derives variously from:

- the conventional deprecation of the significance traditionally attached to the zodiac -- especially through its continuing value in horoscopes, deprecated to an even higher degree
- the fact that as a configuration (valued for its popular use in horoscopes), the zodiac configuration is more familiar to a wider proportion of the world's population than the reports and proposals on the global crisis, of such as the Club of Rome or The Royal Society, can ever hope to be
- the apparently "static" nature of the presentation above -- despite the earlier arguments -- and the manner in which it is designed to encode processes which can only, at best, be inferred through that form

As with maps of metabolic pathways and systems diagrams, including those of the world models promoted by the Club of Rome, the cognitive challenge is how to give a sense of those dynamics in a manner which enables cognitive entrainment -- as is so readily evident in the case of music. With respect to creatively eliciting a universe of meaning, and sustaining it, the cyclic processes of the imagination can be fruitfully framed as the "circulation of light" -- given the metaphorical significance attributed to light (*Circulation of the Light: essential metaphor of global sustainability?* 2010).

Following the transformation of alchemical operations, via chemistry, into chemical engineering, a case can be made for imagining the sequence of creative processes in terms of the systemic process thinking essential to the productivity of chemical plants. Such systemic thinking remains to be engendered with respect to the creative process itself -- as with the cognitive implication of the dependence of a global civilization on "oil". To be emphasized, however, is the sense in which creativity is an imaginative process beyond the bounds of science -- and essentially disruptive of the tangible states and processes which it defines.



The animation is a reminder of the manner in which a helicopter pilot is obliged to embody instinctively and intuitively the various skills

and insights required to control the vehicle (as was the inspiration of Arthur Young). The implication is that a similar pattern of skills, but of a subtler cognitive order, is required for other form of (self)governance, whether of the individual or of a collectivity. Is governance too readily assumed to be less challenging than flying a helicopter -- perhaps too readily compared with riding a bicycle, driving an automobile, or piloting "the ship of state"?

In a civilization inundated with ever more attractive multimedia presentations, an animation is also a reminder of the need to embody the insights of any global strategic proposal into cognitive "attractors" -- as a civilizational Magnum Opus -- if they are creatively and imaginatively to elicit meaning. The further implication is that they may well need to take the form of "strange attractors" in order to be of requisite complexity to enable meaningful engagement with psychosocial reality. Related issues have been discussed separately (*Psychosocial Implication in Gamma Animation: epimemetics for a Brave New World*, 2013).

The personal implications of creativity in eliciting meaning have been explored separately -- in the light of the elegance essential to comprehension of the subtler forms of coherence of complexity commensurate with that of the universe (*Being a Poem in the Making: engendering a multiverse through musing*, 2012; *Enactivating Multiversal Community: hearing a pattern of voices in the global wilderness*, 2012).

The explorations of "the universe" by astrophysics suggest ways of thinking about the interpenetration of "multiple universes" essentially insensible to each other's existence. Currently such [brane cosmology](#) frames "the universe" as being restricted to a [brane](#) inside a [higher-dimensional](#) space. The question for the individual is how to benefit from such insights and what they may imply for any communication between the "universes" variously cultivated and inhabited by individuals and groups, as discussed separately (*Global Brane Comprehension Enabling a Higher Dimensional Big Tent?* 2011). One curious implication is the possibility of a more fruitful approach to the imperceptible nature of "what matters" in another universe, as speculatively explored (*Import of Nothingness and Emptiness through Happening and Mattering*, 2008).

---

## References

Yakir Aharonov and Daniel Rohrlich. *Quantum Paradoxes*. Wiley-VCH, 2005

Jim Al-Khalili. *Paradox: the nine greatest enigmas in physics*. Broadway, 2012

Christopher Alexander:

- The Nature of Order: an essay on the art of building and the nature of the universe. Center for Environmental Structure, 2003-4. [[summary](#)]
- New Concepts in Complexity Theory: an overview of the four books of the Nature of Order with emphasis on the scientific problems which are raised. 2003 [[text](#)]

Jacques Attali:

- Noise: the political economy of music. University of Minnesota, 1985 (English translation of 1977 edition) [[text](#)]
- Demain qui gouvernera le monde? Fayard, 2011
- A Brief History of the Future: a brave and controversial look at the Twenty-First Century. Arcade Publishing, 2006 [[summary](#)]
- La crise, et après? Fayard, 2008
- Survivre aux crises: 7 stratégies. Fayard, 2009

Mehrdad Baghai, Steve Coley, David White and Stephen Coley. *The Alchemy of Growth: practical insights for building the enduring enterprise*. Basic Books, 2000

Mohammad Bahareth. *Micronations: for those who are tired of existing incompetent governments and are longing for something new and refreshing*. iUniverse, 2011

Mary Catherine Bateson:

- Composing a Life. Grove Press, 2001
- Composing a Further Life: the Age of Active Wisdom. Vintage, 2011

Harold Baum. *The Biochemists' Songbook*. Pergamon, 1982

Geoffrey Benington. *Superanus. Theory and Event*, 8, 2005, 1 [[text](#)]

Peter L. Berger and Thomas Luckmann. *The Social Construction of Reality: a treatise in the sociology of knowledge*. Doubleday, 1967

Edward Bernays:

- Propaganda. Ig Publishing, 2004
- Crystallizing Public Opinion. Ig Publishing, 2011

Hans Christoph Binswanger:

- The Growth Spiral: money, energy, and imagination in the dynamics of the market process. Springer, 2012
- Die Glaubensgemeinschaft der Ökonomen. Murmann Verlag, 2011
- Money and Magic: a critique of the modern economy in the light of Goethe's Faust. University of Chicago Press, 1994
- Geld und Natur: Das wirtschaftliche Wachstum im Spannungsfeld zwischen Ökonomie und Ökologie. Edition Weitbrecht, 1992

Karen A. Cerulo. *Never Saw It Coming: cultural challenges to envisioning the worst*. University of Chicago Press, 2006

Dean Cvetkovic and Irena Cosic (Eds.). *States of Consciousness: Experimental Insights into Meditation, Waking, Sleep and Dreams*. Springer, 2011

Erik Davis. *TechGnosis: Myth, Magic, and Mysticism in the Age of Information*. Three Rivers Press, 1999

Edward de Bono:

- *How to Have Creative Ideas: 62 exercises to develop the mind*. Ebury Digital, 2012
- *Six Frames For Thinking About Information*. Vermilion, 2008

Andre de Guillaume. *How to Rule the World: A Handbook for the Aspiring Dictator*. Chicago Review Press, 2005

Jared Diamond. *Collapse: How Societies Choose to Fail or Survive*. Viking Press, 2005

Jorri C. Duursma. *Fragmentation and the International Relations of Micro-states: Self-determination and Statehood*. Cambridge University Press, 1996

Thomas M. Eccardt. *Secrets of the Seven Smallest States of Europe: Andorra, Liechtenstein, Luxembourg, Malta, Monaco, San Marino and Vatican City*. Hippocrene Books, 2004

Paul R. Ehrlich and Anne H. Ehrlich. Can a collapse of global civilization be avoided? *Proceedings of the Royal Society (B)*, 280, 7 March 2013, 1754 [[abstract](#)]

Dan Falk. *In Search of Time: the history, physics, and philosophy of time*. St. Martin's Griffin, 2010

Joseph P. Farrell. *Babylon's Banksters: the alchemy of deep physics, high finance and ancient religion*. Feral House, 2010

Michael Foley. *The Age of Absurdity: why modern life makes it hard to be happy*. Simon and Schuster, 2011

Jay W. Forrester. *World Dynamics*. Productivity Press, 1971

Nelson Goodman. *Ways of Worldmaking*. Hackett, 1978

Ronald Green. *Nothing Matters: a book about nothing*. iff Books, 2011

Charles Handy:

- *The Age of Unreason*. Harvard Business Review Press, 1991
- *The Age of Paradox*. Harvard Business Review Press, 1995

Mark Patrick Hederman. *Dancing with Dinosaurs: a spirituality for the 21st Century*. Columba Press, 2011

Chris Hedges. *Dancing with Dinosaurs*. *The New Humanist*, 122, 2, March/April 2007 [[text](#)]

Douglas Hofstadter:

- *Gödel, Escher, Bach: an Eternal Golden Braid*. Basic Books, 1979 [[summary](#)]
- *Metamagical Themas*. Basic Books, 1985 [[summary](#)]
- *I Am a Strange Loop*. Basic Books, 2007 [[summary](#)]
- *What Is It Like to Be a Strange Loop*. In: Uriah Kriegel and Kenneth Williford (Eds). *Self-Representational Approaches to Consciousness*. MIT Press, 2006, pp. 465-516

Douglas Hofstadter and Emmanuel Sander. *Surfaces and Essences: analogy as the fuel and fire of thinking*. Basic Books, 2013

Thomas Homer-Dixon. *The Upside of Down: catastrophe, creativity, and the renewal of civilization*. Knopf, 2006

G. J. Ikenberry and A. M. Slaughter. *Forging a World of Liberty Under Law; U.S. National Security in the 21st Century (Final Report of the Princeton Project on National Security)*. The Woodrow Wilson School of Public and International Affairs, 2006 [[text](#)]

Neil Irwin. *The Alchemists: three central bankers and a world on fire*. Penguin Press HC, 2013

T. Jagtenberg. *The Social Construction of Science: a comparative study of goal direction, research evolution and legitimation*. Springer, 1983

Mark Johnson:

- *The Body in the Mind: the bodily basis of meaning, imagination, and reason*. University of Chicago Press, 1987
- *The Meaning of the Body: aesthetics of human understanding*. University of Chicago Press, 2008

Michael Jordan. *Encyclopedia of Gods: over 2,500 deities of the world*. Facts on File, 1993

Rosabeth Moss Kanter. *When Giants Learn To Dance*. Free Press, 1990

Ali Khan. *The Extinction of Nation-States*. *American University International Law Review*, 7, 1992 [[abstract](#)]

P. Christiaan Klieger. *The Microstates of Europe: Designer Nations in a Post-Modern World*. Lexington Books, 2012

David C Korten. *The Great Turning: from Empire to Earth Community*. Berrett-Koehler Publishers, 2007

Lawrence M. Krauss. *A Universe from Nothing: why there is something rather than nothing*. Atria Books, 2012

Grant McFetridge and Wes Gietz. *Peak States of Consciousness*. Institute for the Study of Peak States Press, 2008

Andrew Mack. Why Big Nations Lose Small Wars: the politics of asymmetric conflict. *World Politics*, 27, 1975, 2, pp. 175-200 [text]

Alberto Manguel. *The Dictionary of Imaginary Places*. Mariner Books, 2000

Donald Michael:

- *On Learning to Plan and Planning to Learn*. Miles River Press, 1973
- *In Search of the Missing Elephant: selected essays*. TriarchyPress.com, 2010 [summary]

Michael Murphy. *The Future of the Body: explorations into the further evolution of human nature*. Tarcher, 1993

Kinhide Mushakoji. *Global Issues and Interparadigmatic Dialogue; essays on multipolar politics*. Albert Meynier, 1988

F. David Peat. *Alchemical Transformation: Consciousness and matter, form and information*. *World Futures: The Journal of General Evolution*, 1997, 48. pp. 3-22 (earlier version in a presentation to Club of Budapest, Padova, 1995) [text]

Lawrence M. Principe. *The Secrets of Alchemy*. University of Chicago Press, 2012

Stephen Prothero. *God Is Not One: the eight rival religions that run the world -- and why their differences matter*. HarperOne, 2011

Jørgen Randers. *2052: A Global Forecast for the Next Forty Years*. Chelsea Green, 2012

Martin Rees. *Denial of Catastrophic Risks*. *Science*, 339, 8 March 2013, 6124 [text]

Nicholas Rescher. *The Strife of Systems: an essay on the grounds and implications of philosophical diversity*. University of Pittsburgh Press, 1985

Jeremy Rifkin. *Time Wars: the primary conflict in human history*. Henry Holt and Company, 1987 [summary]

Steven M. Rosen:

- *Dreams, Death, Rebirth: a multimedia topological odyssey into alchemy's hidden dimensions*. 2013 [text]
- *Topologies of the Flesh: a multidimensional exploration of the lifeworld*. Ohio University Press, 2006 [excerpts]
- *Dimensions of Apeiron: a topological phenomenology of space, time, and individuation*. Value Inquiry Book Series of Editions Rodopi, 2004 [excerpts]
- *Science, Paradox and the Moebius Principle: the evolution of the transcultural approach to wholeness*. State University of New York Press, 1994 [summary]

John Ryan, George Dunford and Simon Sellars. *Micronations: The Lonely Planet Guide to Home-Made Nations*. Lonely Planet, 2006

John S. Saloma:

- *Theory of Process 1: Prelude - Search for a Paradigm*, 1991 [excerpt]
- *Theory of Process 2: Major Themes in 'The Reflexive Universe'* (by Arthur M Young). 1991 [excerpt]

Michael A. Sells. *Mystical Languages of Unsayings*. University of Chicago Press, 1994

Maxine Sheets-Johnstone. *The Primacy of Movement*. John Benjamins, 2011

Lee Smolin. *Time Reborn: from the crisis in physics to the future of the universe*. Houghton Mifflin Harcourt, 2013

Pitirim Sorokin. *Social and Cultural Dynamics: a study of change in major systems of art, truth, ethics, law and social relationships*. Extending Horizons Books, 1957

George Soros:

- *The Alchemy of Finance*. Wiley, 2003
- *The Alchemy of Finance*. Simon and Schuster, 1988

Erwin S. Strauss. *How To Start Your Own Country*. Paladin Press, 1999

Nassim Nicholas Taleb:

- *Antifragile: how to live in a world we don't understand*. Allen Lane, 2012 [summary]
- *The Black Swan: the impact of the highly improbable*. Allen Lane, 2007 [summary]

Cesidio Tallini. *The Fifth World: micronationalism on steroids*. CreateSpace Independent Publishing Platform, 2009

Charles Tart:

- *States of Consciousness*. iUniverse, 2001
- *Altered States of Consciousness*. Harper, 1990

Rene Thom:

- *Structural Stability and Morphogenesis: an outline of a general theory of models*. W. A. Benjam, 1972
- *Esquisse d'une Sémiophysique: physique aristotélicienne et théorie des catastrophes*. Interéditions, 1989
- *Apologie du Logos*. Hachette, 1990
- *Morphogenèse et Imaginaire*. *Circé*, 1978, 8-9

Larry Tye. *The Father of Spin: Edward L. Bernays and the birth of public relations*. Picador, 2002

Jacques Vallee. *The Four Elements of Financial Alchemy: a new formula for personal prosperity*. Ten Speed Press, 2001

Carl Wennerlind:

- *Casualties of Credit: the English Financial Revolution 1620-1720*. Harvard University Press, 2011
- *The Alchemical Roots of the Financial Revolution*. *Berfrois*, 14 March 2012 [[text](#)]
- *How Alchemists Invented Modern Finance*. *Bloomberg Echoes*, 8 March 2012 [[text](#)]

Philip L. White. *Globalization and the Mythology of the Nation State*. In: A.G.Hopkins (Ed.), *Global History: Interactions Between the Universal and the Local*, Palgrave Macmillan, 2006, pp. 257-284.

Anders Wijkman and Johan Rockström. *Bankrupting Nature: denying our planetary boundaries*. Routledge, 2012

Alan E. Wittbecker. *Global Government: Creating a System for Conducting the Planet*. CreateSpace Independent Publishing Platform, 2011

Worldwatch Institute. *State of the World*. 2012 [[summary](#)]

Erik Olin Wright. *Envisioning Real Utopias*. Verso, 2010

Maurice I. Yolles. *Knowledge Cybernetics: a metaphor for post-normal science*. In: Steve Wallis (Ed), *Cybernetics and Systems Theory in Management: Tools, Views and Advancements*, IGI Global, Hershey, 2010

Maurice Yolles and Gerhard Fink:

- *A General Theory of Generic Modelling and Paradigm Shifts (part 1): the fundamentals*. *Kybernetes*, 44, 2015, 2, pp. 283-298 [[abstract](#)]
- *A General Theory of Generic Modelling and Paradigm Shifts (part 2): cybernetic orders*. *Kybernetes*, 44, 2015, 2, pp. 299-310 [[abstract](#)]
- *A General Theory of Generic Modelling and Paradigm Shifts (part 3): the extension*. *Kybernetes*, 44, 2015, 2, pp. 311-328 [[abstract](#)]

Maurice Yolles, B. R. Frieden and G. Kemp. *Toward a formal theory of socioculture: a yin-yang information-based theory of social change*. *Kybernetes*, 37, 2008, 7, pp. 850 - 909 [[abstract](#)]

Arthur M. Young:

- *The Geometry of Meaning*. Delacorte Press, 1976
- *The Reflexive Universe: evolution of consciousness*. Delacorte Press, 1976 (including a theory of process)
- *The Bell Notes: a journey from physics to metaphysics*. Delacorte Press, 1979

John T Young. *Isaac Newton's alchemical notes in the Royal Society*. *Notes and Records of the Royal Society*, 60, 22 January 2006, 1, pp. 25-34 [[text](#)]



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](#).

For further updates on this site, [subscribe here](#)