



# laetus in praesens

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## Transcending an Asystemic View of Life

### Review of *The Systems View of Life: a unifying vision*

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#### Introduction

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## Introduction

A truly remarkable analysis of why things ought to work in theory is provided in a *magnum opus* by [Fritjof Capra](#) and [Pier Luigi Luisi](#) as *The Systems View of Life: a unifying vision* (2014). It is however also a remarkable example of why the global system is in such dire straits -- through failure to apply systemic insights to why they do not work in practice.

It is for this reason that this review is titled to suggest that there is a contrasting perspective that merits attention -- of the very quality that the authors offer, and yet seemingly consider to be beyond the mandate of the systemic perspective as they define it. The consequence is that the analysis and conclusions of the *opus* can be considered fundamentally asystemic through the pattern of themes considered in relation to those avoided. The further consequence is that the vision articulated is necessarily unilluminating for those in quest of understanding as to why the global system is in the state of crisis that is both only too evident and widely documented.

As the jacket of the book notes, the volume integrates the ideas, models, and theories underlying the systems view of life into a single coherent framework. Taking a broad sweep through history and across scientific disciplines, the authors examine the appearance of key concepts such as autopoiesis, dissipative structures, social networks, and a systemic understanding of evolution. The implications of the systems view of life for health care, management, and our global ecological and economic crises are also discussed. It provides excellent coverage of these matters.

Given the lead author's renown as a physicist for his early work on *The Tao of Physics: an exploration of the parallels between modern physics and eastern mysticism*, (1975), it is appropriate to frame this review in terms of a stanza from a Taoist classic, the *Tao Te Ching*:

Thirty spokes share the wheel's hub.  
It is the centre hole that makes it useful...  
Therefore profit comes from what is there;  
Usefulness from what is not there.

With respect to the current work, the "spokes" are the 18 chapters. However it is what is missing that makes it useful -- especially in the light of the analysis by [Terrence W. Deacon](#) (*What's Missing from Theories of Information?* 2010; *Incomplete Nature: how mind emerged from matter*, 2011). It is the framing of what is not there, the "hole" in the argument, that makes it useful. There is indeed profit to be gained from what is in the "unifying vision". However usefulness is to be gained from "what is not there". Appropriate to this argument, the cover image echos the sense of a hole framed by spokes.

In a previous study, Capra himself has given attention to what is seemingly missing (*The Hidden Connections*, 2002) in which he extended the framework of systems and complexity theory to the social domain, using that framework to discuss critical issues of the times.

In adopting a critical perspective here, the point to be made can be further highlighted by quoting another classic Taoist author, [Chuang Tzu](#), to the effect that:

The wise man therefore... sees that on both sides of every argument there is both right and wrong. He also sees that in the end they are reducible to the same thing, once they are related to the pivot of Tao. When the wise man grasps this pivot, he is the center of the circle, and there he stands while "Yes" and "No" pursue each other around the circumference. (*The Way of Chuang Tzu*, interpreted by [Thomas Merton](#), 1970)

Somewhat ironically, this well-known reference to "pivot" can be usefully understood as fundamental to an earlier work of Capra (*The Turning Point: science, society, and the rising culture*, 1982). Although a natural scientist, like Capra, as co-author Pier Luigi Luisi has a particular preoccupation with the cognitive implications of the systems perspective (*Mind and Life: discussions with the Dalai Lama on the nature of reality*, 2009). This justifies extending the concluding argument of this review to consider this dimension.

This review therefore explores what is "not there", as a means of complementing an asystemic *opus* in order to point to possibilities of eliciting a system perspective of higher order -- perhaps to be understood as a meta-systemic perspective, as separately argued (*Metascience Enabling Upgrades to the Scientific Process*, 2014). The perspective follows from arguments developed with regard to lack of attention to remedial capacity -- even when conventional systemic insights are available (*Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity*, 2009). The approach is consistent with an earlier review (*Tomorrow, Who Will Govern the World? Commentary on Jacques Attali's "Demain, qui gouvernera le monde?"*, 2011).

A particular concern in this review is how original is the systems view as presented, given the variety of "save the planet" reports produced in past decades -- few of which are cited in this new *opus*. The concern relates to whether its originality lies in its difference from other reports -- therefore defined as irrelevant to its preoccupations -- or whether this failure is significantly indicative of an asystemic cognitive framework through which the planet is to be saved.

## Inadequacy of conventional systems thinking

As currently defined by its proponents, "systems thinking" is necessary -- although it has proven to be insufficient to effective engagement with the challenges. It is inadequate in practice because it is unable to reframe the relevance of its perspective to other portions of the "system" -- understood in a more general sense. From this perspective, the point of the following criticism is made in a concluding paragraph of the *opus*:

The current ecosdesign revolution, which is now well under way, provides compelling evidence that today the transition to a sustainable future is no longer either a technical or a conceptual problem. We have the knowledge and the technologies to build a sustainable world for our children and for future generations. (p. 452).

The difficulty with this articulation is that it could have been made by many innovative civilizations down the centuries. It could be made by a number of belief "systems" at this time. Many such systems have expressed confidence that they know what needs to be done, whatever the level of sophistication within which they operate. The failure of many has been variously reviewed ([Jared Diamond](#), *Collapse: How Societies Choose to Fail or Succeed*, 2005; [Johan Galtung](#) and [Sohail Inayatullah](#), *Macrohistory and Macrohistorians: perspectives on individual, social, and civilizational change*, 1997).

**Political will:** One "explanation" for inability to make appropriate use of the knowledge is offered in the sentence following the above quotation: *What we need is political will and leadership* (p. 452). The sentence is immediately followed by a quotation from [Lester Brown](#) of the [Worldwatch Institute](#) and the [Earth Policy Institute](#):

We are in a race between tipping points in nature and our political systems. Can we phase out coal-fired power plants before the melting of the Greenland ice sheet becomes irreversible? Can we garner the political will to halt deforestation in the Amazon before its growing vulnerability to fire takes it to the point of no return? Can we help countries stabilize population before they become failing states? (*Plan B.3.0*, 2008, p. 5)

The point to be made with regard to use of "systems" is that there is very little indication that "political systems" are usefully analyzed within a work that purports to offer a "unifying" systems view of life -- a point made with respect to an early study (*Tomorrow, Who Will Govern the World? Commentary on Jacques Attali's "Demain, qui gouvernera le monde?"*, 2011). Given the concluding remarks on their systemic implications, how is this possible? Why is it possible in a scientific study that lays claim to being "unifying"?

**Strategic track record:** By citing Lester Brown, and the remarkable work of the Worldwatch Institute since its foundation by him in 1974, the *opus* raises the question as to the nature of the impact in practice of the recommendation made over decades with respect to global strategic formulation and implementation. There is of course no question that a degree of awareness has been raised and that the formulation of multiple initiatives has been influenced by such bodies.

The point can be made more generally with respect to the many global reports ranked as strategically significant with respect to the global condition. The *opus* could be considered as one in that series. The question is the extent of attention to previous reports, their strengths and weaknesses, and issues relating to by whom they were taken into consideration. The point is usefully made by the reports variously engendered over decades by the Club of Rome, as separately discussed (*Club of Rome Reports and Bifurcations: a 40-year overview*, 2012). The inadequacy of track record assessment in that case was the subject of commentary (*Engendering 2052 through Re-imagining the Present*, 2012) -- being a review of (*2052: A Global Forecast for the Next Forty Years*, 2012) authored by [Jorgen Randers](#) as a framework for the Club of Rome.

The question is whether the systems tools advocated by the *opus* have been applied to assess the various threads of this remarkable track record and the learnings to be derived from them. One of the rare efforts to do so, in the case of one specific Club of Rome proposal, is that of Graham Turner (*A Comparison of the Limits to Growth with Thirty Years of Reality*, 2007). This is not cited by the *opus*. Given the concluding focus in the above quotation on "political will" and "leadership", how are such pleas to be compared with those of other social enterprises, most notably the religions -- who have long made analogous pleas, and continue to do so?

The difficulty to be faced is the increasing tendency for groups to frame the failure of their preferred strategy in terms of "if only X" would act appropriately, or supply needed resources, then all would be well. This effectively blames "X", relieving those formulating such pleas of any ultimate responsibility in the matter. The *opus* fails to address this pattern, effectively defining itself as part of the problem.

**System boundaries and scientific gerrymandering:** Consideration of system boundaries can be fruitfully understood in terms of the manner of their manipulation -- usefully compared with [gerrymandering](#) in politics (*Scientific Gerrymandering of Boundaries of Overpopulation Debate*, 2012). This plays out in the cultivation of [information silos](#), [groupthink](#) and derivative thinking (*Vigorous Application of Derivative Thinking to Derivative Problems*, 2013). Should the *opus* be understood as a magnificent exercise in derivative thinking?

Science would appear to be completely unable to address destabilizing social processes like unchecked population growth or the flood of economic refugees -- or even the systemic factors inhibiting reasoned discourse on such controversial matters. These are carefully defined to be outside its exciting mandate to "advance the boundaries of human knowledge" for which ever more resources are required - - irrespective of the irrelevance to daily life (*Challenges More Difficult for Science than Going to Mars -- or exploring the origins of the Universe or of Life on Earth*, 2014).

**System of socio-political actors:** The study does indeed include reference to a small selection of social and political actors. The question is whether these are explored and understood as part of the system that is the unifying preoccupation -- given the number that are not recognized as useful from a systemic perspective. How many such actors should be recognized in a systemic study?

Such questions are appropriately raised given the manner in which the intelligence services are in process of developing a range of analytical systemic approaches to such actors -- extending down to the individual level. Ready reference is made to social "networks", but with only passing recognition of the analytical issues which they might suggest in terms of "unifying".

**Leadership and disagreement:** Again, the study concludes with: *What we need is political will and leadership*. How are these to be explored from a systemic perspective? What does the study fail to explore them in such terms -- or is this an instance of scientific gerrymandering to define a comfort zone of a simplistic "unifying vision"?

Much has been made of the incidence of disagreement with respect to issues such as climate change. There has been little effort to study such disagreement with systems tools. Why not, if it is so fundamental? Are the tools adequate for the purpose, when disagreement is so rife within the sciences? As noted in this respect by [Nicholas Rescher](#) (*The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985):

For centuries, most philosophers who have reflected on the matter have been intimidated by the strife of systems. But the time has come to put this behind us -- not the strife, that is, which is ineliminable, but the felt need to somehow end it rather than simply accept it and take it in stride.

Given this argument, the plea for "leadership" would seem to be naive in the extreme. It reflects a very primitive understanding of systems with multiple leaders of very different ranking -- typically with highly problematic relations with one another (*Epistemological Challenge of Cognitive Body Odour: exploring the underside of dialogue*, 2006). Does the *opus* assume that some mega-leader will emerge, despite all the problems this might arouse? Does that assumption feed simplistically into anticipation of various ideal messianic figures, prophesied by religious belief "systems"? How would the scientific community respond to a leader with a particular unifying systemic understanding?

In his acceptance speech on receiving the Nobel Peace Prize, President Barack Obama asserted that: *For make no mistake: evil does exist in the world* (*Remarks by the President at the Acceptance of the Nobel Peace Prize*, 10 December 2009). This is consistent with the current controversies regarding evil, variously considered to be embodied by the US, its critics, and its opponents. Given his acknowledged leadership role in a world system, and the scientific advisers on whom he relies, how might it be expected that "evil" would be integrated into any unifying systems perspective? More intriguing, if Obama's assertion was purely for political purposes, how does are such "factoids" taken into account systemically?

What simulations are made of the emergence of leadership roles within complex psycho-social systems? More provocatively, what might then be the systemic requirements for followership, if leaders are to be effectively followed in the application of systemic insights? (*Framing the interplay of (mis)leadership and (mis)followership: challenges and responsibilities*, 2007). Is it the case that leaders hailed as having ideal attributes are as likely to be excuse their own ineffectiveness in terms of the quality of followership? Given widespread current concern with those dissenting from the policies of particular leaders, how might a unifying vision handle such dissenters -- given historic precedents?

**Consensus delusion and ungovernability:** It is appropriate to note the number of "unifying visions" that have been variously promulgated over centuries. From a systemic perspective how should the process of engendering such visions be understood? What degree of self-reflexivity is appropriate in doing? Why does this not figure in the *opus* -- given that its coherence will be variously criticized and opposed from the perspective of other "visions" as a characteristic systemic process?

The phenomenon can be considered more generally in terms of the nature of the widespread delusion regarding the degree of consensus that is possible or necessary for governability (*The Consensus Delusion: mysterious attractor undermining global civilization as currently imagined*, 2011). This raises the question as to whether the system, as currently understood, in systemic terms or otherwise, is essentially ungovernable (*Ungovernability of Sustainable Global Democracy ?* 2011).

**Asystemic approach to hope:** Given the conclusions highlighted above, the *opus* frames its final point in terms of the question: ***So what can we hope for the future of humanity?*** It cites Vaclav Havel (1990) as providing the most inspiring answer to this existential question:

The kind of hope that I often think about... I understand above all as a state of mind, not a state of the world. Either we have hope within us or we don't, it is a dimension of the soul and it's not essentially dependent on some particular observation of the world or estimate of the moment... [Hope] is not the conviction that something will turn out well, but the certainty that something makes sense, regardless of how it turns out. (*Disturbing the Peace*, 1997, p. 181)

Unfortunately (as with "evil") this raises the question of what is "hope" in the systemic framework elaborated by the *opus*? How does such hope relate to the coherence and credibility that have proven to be so fundamental to the recent financial crisis -- and to the highly problematic aftermath for so many. If hope is to be given such prominence, why not the despair with which so many are confronted? This challenge is central to the worldwide experience of depression and despair, as separately discussed (*Implication of Personal Despair in Planetary Despair: avoiding entrapment in hopeful anticipation*, 2010).

It would appear that "hope", like other dimensions, is designed out of the "unifying vision". Is this true of other intangible values which are equally meaningless in systemic terms? Rather than framing them statically, is there a need to frame them dynamically, for example (*Freedom, Democracy, Justice: Isolated Nouns or Interwoven Verbs? Illusory quest for qualities and principles dynamically disguised*, 2011).

Concluding with such a focus on hope, gives credibility to the reliance of many on "faith" (as with the religious), or "confidence" (as with the optimists), or even "love" (as with the popular Beatles song *All You Need is Love*). This suggests the merit of integrating such values into a systemic framework -- drawing on the consciousness considerations of the *opus*, if it is to be "unifying".

Given the number of ongoing faith-based conflicts, the challenge of such terms in practice merits a far more radical systemic approach, separately explored as a self-reflexive global reframing to enable faith-based governance (*Mathematical Theology: Future Science of Confidence in Belief*, 2011).

**Wicked problems and asystemic untidiness:** As the *opus* notes, systemic understanding has been explored and applied over decades. Missing from its discussion is recognition of the literature on so-called **wicked problems**. As discussed separately (*Wicked problems and the renunciation of science*, 2014), *Wikipedia* notes that a wicked problem is a term originally used in social planning to describe a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize.

The term "wicked" is used to denote resistance to resolution, rather than any association with "evil". Moreover, because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems. Wicked problems are inherently untidy and messy (*Problems, problematique and wickedness?* 2014). Nescience would seem to be required to engage meaningfully with the untidiness of messy wicked problems, as discussed separately (*Nescience and ignorance*, 2014).

The *opus* can therefore be seen as offering a "tidy" systems understanding. Through failing to deal with the messiness of reality as experienced by many, its use of "unifying" is then to be understood as synonymous with "tidiness". Is the desired leadership then to be understood as a person who can ensure tidiness by whatever means seems appropriate -- unfortunately recalling the tidiness imposed by many dictators.

**Systemic surprises?** A highly problematic form of untidiness is evident in the systemic consequence of surprises. The *opus* avoids reference to such surprises -- of which the financial crisis of 2008 is a major instance.

No reference is made to the widely-cited commentary on surprises by **Nassim Nicholas Taleb** (*The Black Swan: the impact of the highly improbable*, 2007; *Antifragile: things that gain from disorder*, 2012).

**Unsaid and unmentionable:** At best a systems analysis makes every effort to recognize factors considered relevant by the widest variety of social actors -- potentially expected to form a strategic consensus. Part of the methodological concern is where to locate such perceptions and how to manage their articulation from a systemic perspective. This was a concern in the profiling of thousands of problems, perceived by thousands of international constituencies, frequently with their particular strategic preferences (as discussed below with respect to the *Encyclopedia of World Problems and Human Potential*). The question can be framed from a strategic perspective (*Strategic Implications of 12 Unasked Questions in Response to Disaster*, 2013; *Considering All the Strategic Options -- whilst ignoring alternatives and disclaiming cognitive protectionism*, 2009).

The difficulty in undertaking such an enterprise is the extent to which mention of many problems is taboo in some way (*Global Strategic Implications of the "Unsaid"*, 2003). This has implication for any systemic analysis in that those sponsoring or funding the study may be complicit in avoiding reference to issues considered "sensitive" -- whether politically or otherwise.

The issue is notably evident with respect to corruption. It is evident in other ways with respect to overpopulation -- despite its aggravating systemic impact on other major issues (*Institutionalized Shunning of Overpopulation Challenge: incommunicability of fundamentally inconvenient truth*, 2008). If "corruption" is treated in the *opus*, it is not considered worthy of mention in the comprehensive index. Whilst "population stabilization" is indeed discussed, the systemic factors inhibiting adequate debate on the matter

are not (*Overpopulation Debate as a Psychosocial Hazard*, 2009).

The revelations enabled by Wikileaks, Bradley Manning and Edward Snowden are not only of significance in their own right, they are also indicative of other potential surprises regarding matters framed as unmentionable. Whereas such matters may be known -- although unmentionable -- the concern is how a systems analysis takes account of their possibility, even though it is unable to mention them.

## Restrictive comprehension of "life" and "death"?

The *opus* is explicit in framing its approach to "life", framing the dilemma as follows:

It is a common understanding that it is impossible to provide a scientific definition of life which is universally accepted. This stems from the fact that the background of scientists dealing with the question -- biologists, chemists, computer scientists, philosophers, astro-biologists, engineers, theologians social scientists, ecologists (just to cite a few) -- differs considerably from one another, depending on one's conceptual framework. In this book, we will not dwell so much on the question of a unique definition of life -- a single sentence catching all the various aspects of life -- but rather, we will consider the more general question: what are the essential characteristics of a living system? ....

What does the term "systems view" mean when it is applied to life? It implies looking at a living system in the totality of its mutual interactions. (pp. 129-130)

This articulation is helpful in clarifying how a "unifying" comprehension of life may be restricted by its implications. It explicitly acknowledges the differences of perspectives of a variety of disciplines and the choice of avoiding of any single sentence definition. It then implies the possibility of a "systems view" -- one which is upheld by the *opus* as unifying.

The difficulty with this framework is that it effectively avoids features of living systems as they are lived in practice -- as is evident in the problematic dynamics between disciplines, or between belief systems more generally. Whilst avoiding the problem of articulation of a single sentence definition, it implies that there is a viewpoint from which a unifying perspective is possible. This is of course the fundamental difficulty with any approach claiming an integrative perspective of unique value -- as with the disciplines cited, the religions, or the arts. The "unifying vision" of the *opus* does not address the challenge of "disagreement" -- which may well be the death of it in practice. Can it fruitfully understand itself to be part of the problem?

As implied by arguments above, the *opus* is then vulnerable to the criticism that it fails to address the highly problematic dynamics of such systems -- notably the academic "turf wars" and "territorial" equivalent -- within which people variously "live and move and have their being", and experience a sense of identity. As argued here, it would appear that the *opus* itself neglects knowledge processes which merit systemic insight (*Knowledge Processes Neglected by Science: insights from the crisis of science and belief*, 2012). With respect to the "life" associated with many works of art, and the "unifying" experience they offer, the latter document is in fact the annex to an argument regarding the poetic origins of autopoiesis (*Being a Poem in the Making: engendering a multiverse through musing*, 2012).

Through what "form" is "unifying" then to be comprehended? Use of "systems" and "view", whilst potentially helpful, raise the question as to whether their helpfulness derives from their role as metaphors rather than otherwise. The *opus* is attentive to the cognitive psychological perspective elaborated by George Lakoff and his collaborators (*Metaphors We Live By*, 1980; *Where Mathematics Comes From: how the embodied mind brings mathematics into being*, 2000). The question is whether it is itself constrained by uncritical use of some metaphors, whilst failing to explore others. Especially problematic is what might be meant by "unifying" and "view".

The argument naturally leads from a biological perspective as it manifests in the **biosphere**. The arguments regarding **autopoiesis** in biological systems, and their relevance to the social sciences, are discussed in terms of social autopoiesis, developed by Niklas Luhmann as networks of communication (*Essays on Self-Reference*, 1990). In a key statement in the *opus*:

Its extension to the social domain is not straightforward, however, since human social systems exist not only in the physical domain but also in a symbolic social domain.... From these generalizations emerges the important insight that social networks exhibit the same general principles as biological networks. There is an organized ensemble with internal rules that generates both the network itself and its boundary (a physical boundary in biological networks, and a cultural boundary in social networks). Each social system -- a political party, a business organization, a city, or a school -- is characterized by the need to sustain itself in a stable but dynamic mode, permitting new members, materials, or ideas to enter the structure and become part of the system... **The observation that the "bio-logic", or pattern of organization, of a simple cell is the same as that of an entire social structure is highly nontrivial. It suggests a fundamental unity of life, and hence also the need to study and understand all living structures from such a unifying perspective.** (p. 136-137). [*emphasis added*]

This confirms the point made by Elisabet Sahtouris (*Gaia: the human journey from chaos to cosmos*, 1989). Failure to cite such prior conclusions is an unfortunate indication of the selectivity of the *opus* -- but more generally of the problematic dynamics of knowledge processing, requiring new understanding in systemic terms.

Despite specific references to the role of mind and consciousness, the question is the degree to which this is adequate to an understanding of life and death as it is experienced, or may increasingly come to be experienced with respect to the:

- **sociosphere**, a framework for interrelated social institutions, associations, reference and affinity groups -- an understanding variously promoted, as by the *Advocacy Journal for Human Unity*. Related concepts include the **blogosphere**, namely the set of

blogs and all their interconnections

- **noosphere**, as the transformation of the biosphere as a consequence of human cognition. Related frameworks might include the **axiosphere** (of values) and the **semiosphere** (of signs). Similarly related is the understanding of **infosphere**, referring to an environment (like a biosphere) that is populated by informationally embodied organisms called **inforgs** or natural agents. An example of the sphere of information is cyberspace, infospheres are not limited to purely online environments.
- "technosphere", as might be understood (beyond its proprietary use) to include all the "species" of artefacts, as recognized by **Kenneth Boulding** (*Ecodynamics: A New Theory of Societal Evolution*, 1978). This could be extended through the manner in which robots may themselves be considered to be alive -- notably in the future.

Each of the above implies an understanding of life and its dynamics -- as a matter of experience. Each may offer a context for future understanding of **memetics** as fundamental to the life of the mind. Understanding of life may also be reframed by the identity and existence of extraterrestrials and artificial superintelligence (*Sensing Epiterrestrial Intelligence (SETI): embedding of "extraterrestrials" in epistemic dynamics?* 2013; **Nick Bostrom**, *Get ready for the dawn of superintelligence*, *New Scientist*, 5 July 2014).

Also of interest is the nature of life attributed to physical features of the environment, namely topographical features of the geosphere. This is most notably done by many indigenous peoples -- more generally with respect to rivers and **sacred rocks**, as extensively documented (**Darrell A. Posey**, *Cultural and Spiritual Values of Biodiversity*, United Nations Environmental Programme, 1999; **Emma Jane Kirby**, *Why Icelanders are wary of elves living beneath the rocks*, *BBC News*, 20 June 2014). Of interest is whether there is any emergent systemic understanding of the relationships between such spheres -- even a **"music of the spheres"**.

The unifying framework of such metaphorical geometry might well be speculatively extended to include "life" in the "probosphere" (of problems) or the "stratosphere" (of strategies). From a mathematical perspective, the metaphor might itself be challenged (*Metaphorical Geometry in Quest of Globality -- in response to global governance challenges*, 2009; *Geometry, Topology and Dynamics of Identity: cognitive implication in fundamental strategic questions and dilemmas*, 2009).

The basic question is whether, through ignoring the dynamics of the conceptual system of disciplines within which it is embedded, the *opus* effectively condemns living systems to the kind of bloody conflict which is only too evident in various regions of the world. The "unifying vision of life" that it offers is disassociated from such conflict in questionable ways. It fails to suggest imaginative means of transcending it.

The *opus* discusses "death" in systemic terms (pp. 139-140) -- possibly even to be construed as justifying it. This is of little value to those dying -- especially in conflicts which merit reframing in systemic terms. The conventional explanatory style of any "unifying vision" may well not be adequate to the cognitive challenge of the times. It recalls the classic phrase in the movie *As Good as It Gets* (1997): *I'm drowning here and you're just describing the water*.

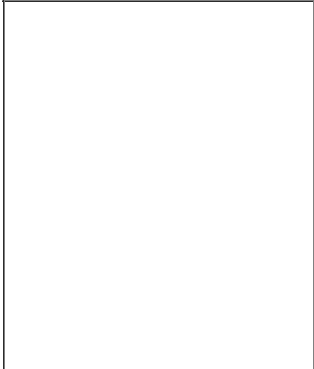

Whilst the cycle of life and death may indeed be vital to systemic renewal, it is unfortunate that no reference was made to the process of adaptation through which it may, in some sense, be navigated -- namely the **adaptive cycle**, as promoted by the **Resilience Alliance** based notably on the work of **C. S. Holling** (*Panarchy: understanding transformations in human and natural systems*, 2002; *Discontinuities in Ecosystems and Other Complex Systems*, 2008). The systemic relevance has been highlighted by **Thomas Homer-Dixon** (*The Upside of Down: catastrophe, creativity, and the renewal of civilization*, 2006).

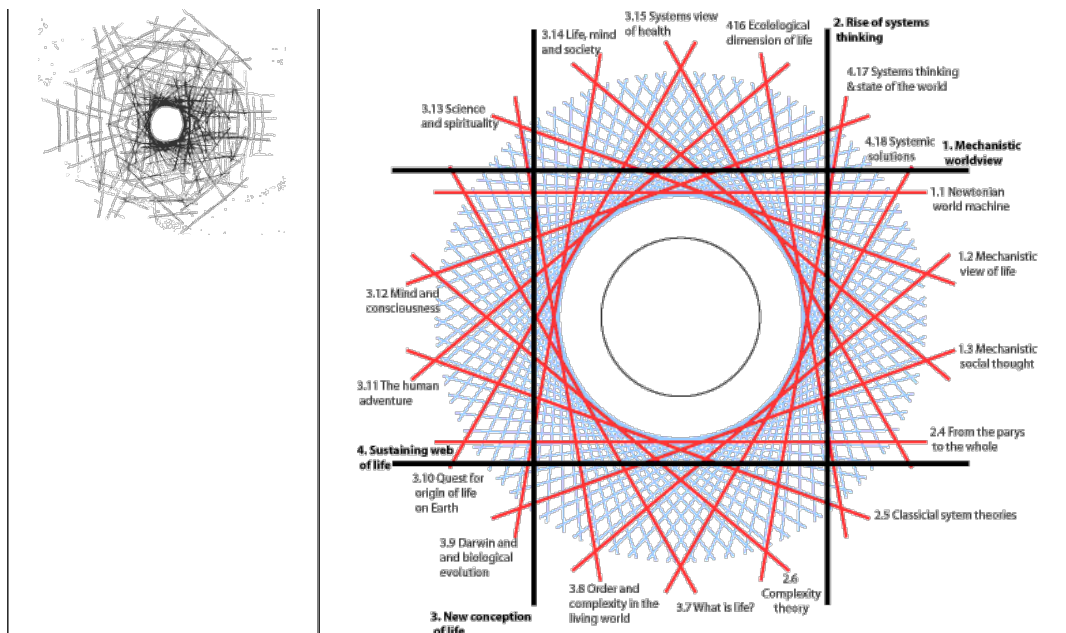
Given the above-mentioned recognition by the *opus* of the relevance of "metaphors to live by", it could be argued that the focus of any "unifying vision" could have been placed on engendering better metaphors -- both to live by and to die by, as separately argued (*Metaphors To Die By: correspondences between a collapsing civilization, culture or group, and a dying person*, 2013). The biological metaphor could itself be extended, as implied in use of "flowering" (*Flowering of Civilization -- Deflowering of Culture: flow as a necessarily complex experiential dynamic*, 2014).

## Asystemic organization of unifying vision?

The *opus* claims to constitute a "unifying vision". It is therefore somewhat extraordinary that the implied unification is not reflected in an appropriate visualization. The *opus* has no "site map", other than the contents page reproduced below, accompanied by a 26 page index. Together these do not provide a systemic overview.

Curiously the cover of the book has an evocative illustration suggestive of the possibility of such an overview. A detail is presented on the left below. It recalls the point made above with respect to the spokes of a wheel. Following this lead, the schematic on the right has been produced in the light of the elements on the contents page.

Cover detail	Schematic representation of the organization of the opus contents
	



Thicker lines in the schematic (above right) are indicative of major chapter divisions (see below), lines of intermediary thickness are indicative of sub-divisions, and the thinnest of more detailed divisions. An even finer division, in the body of the book, is not reflected in the contents page. The schematic raises the question as to whether a unifying vision should be organized in systemic terms, namely whether the connectivity between thematic content should be rendered explicit, as suggestively implied by the pattern of intersecting lines, as separately suggested (*Interweaving Thematic Threads and Learning Pathways*, 2010)

Contents page organization of <i>The Systems View of Life</i>		
1. Mechanistic worldview	2. Rise of systems thinking	4. Sustaining the web of life
1. The Newtonian world-machine 1.1 The Scientific Revolution 1.2 Newtonian physics 2. Mechanistic view of life 2.1 Early mechanical models of living organisms 2.2 From cells to molecules 2.3 The century of the gene 2.4 Mechanistic medicine 3. Mechanistic social thought 3.1 Birth of the social sciences 3.2 Classical political economy 3.3 The critics of classical economics 3.4 Keynesian economics 3.5 The impasse of Cartesian economics. 3.6 The machine metaphor in management	4. From the part to the whole 4.1 The emergence of systems thinking 4.2 The new physics 5. Classical systems theories 5.1 Tektology 5.2 General systems theory 5.3 Cybernetics 6. Complexity theory 6.1 The mathematics of classical science 6.2 Facing nonlinearity 6.3 Principles of nonlinear dynamics 6.4 Fractal geometry	16. The ecological dimension of life 16.1 The science of ecology 16.2 Systems ecology 16.3 Ecological sustainability 17. Connecting the dots: systems thinking and the state of the world 17.1 Interconnectedness of world problems 17.2 The illusion of perpetual growth 17.3 The networks of global capitalism 17.4 The global civil society 18. Systemic solutions 18.1 Changing the game 18.2 Energy and climate change 18.3 Agroecology - the best chance to feed the world 18.4 Designing for life
3. New conception of life		
7. What is life? 7.1 How to characterize the living 7.2 The systems view of life 7.3 The fundamentals of autopoiesis 7.4 The interaction with the environment 7.5 Social autopoiesis 7.6 Criteria of autopoiesis, criteria of life 7.7 What is death? 7.8 Autopoiesis and cognition 8. Order and complexity in the living world 8.1 Self-organization 8.2 Emergence and emergent properties 8.3 Self-organization and emergence in dynamic systems 8.4 Mathematical patterns in the living world	9. Darwin :md biological evolution 9.1 Darwin's vision of species interlinked by a network of parenthood 9.2 Darwin, Mendel, Lamarck and Wallace: a multifaceted interconnection 9.3 The modern evolutionary synthesis 9.4 Applied genetics 9.5 The Human Genome Project 9.6 Conceptual revolution in genetics 9.7 Darwinism and creationism 9.8 Chance, contingency, and evolution 9.9 Darwinism today 10. The quest for the origin of life on Earth 10.1 Oparin's molecular evolution 10.2 Contingency versus determinism in the origin of life 10.3 Pre-biotic chemistry 10.4 Laboratory approaches to minimal life 10.5 The synthetic biology approach to the origin of life 11. The human adventure 11.1 The ages of life	12. Mind and consciousness 12.1 Mind is a process! 12.2 The Santiago theory of cognition 12.3 Cognition and consciousness 12.4 Cognitive linguistics 13. Science and spirituality 13.1 Science and spirituality: a dialectic relationship 13.2 Spirituality and religion 13.3 Science versus religion: a "dialogue of the deaf"? 13.4 Parallels between science and mysticism 13.5 Spiritual practice today 13.6 Spirituality, ecology, and education 14. Life, mind, and society 14.1 The evolutionary link between consciousness and social phenomena 14.2 Sociology and the social sciences 14.3 Extending the systems approach 14.4 Networks of communications 14.5 Life and leadership in organizations 15. The systems view of health

	11.2 The age of humans 11.3 The determinants of being human	15.1 Crisis in healthcare 15.2 What is health? 15.3 A systemic approach to healthcare
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## Uncritical asystemic selectivity?

The methodology outlined by the *opus* is a challenge to any review because of the distinction between the arguments for a theoretical systems framework -- a unifying vision -- and the sets of data cited as indicative of that understanding. The question is then whether a selective or skewed set of examples is to be considered as adequate to make a systemic point, or whether it is to be considered as indicative that the point is being made inadequately -- through failure to encompass a representative sample.

The following critique is made in the light of the data sets of the online [Encyclopedia of World Problems and Human Potential](#), associated with those of the [Yearbook of International Organizations](#).

The *opus* includes sections (as numbered above) on the following.

**Global civil society** (17.4): Without citation of source, passing reference is made to the increase in the number of international NGOs to over 20,000. The *opus* is asystemic in the sense that it fails to acknowledge that these bodies exist neither in isolation nor clumped into a category to be termed "global civil society" with which they are assumed to identify. They in fact constitute a complex system of which social media networks are an additional variant, with a complex relationship between both forms.

Not only do they constitute a system however, but its complexity is in part due to the complex dynamics between bodies therein -- potentially precluding their consideration as acting as a coherent "global civil society", as is only too readily claimed as a matter of convenience and for public relations purposes. The *Yearbook of International Organizations* is unique in endeavouring to identify the interlinkages between thousands of organizations such as to render evident the system they constitute -- an organizational ecosystem. Given the biological emphasis of the *opus*, it is appropriate to note that any conventional effort to identify the linkages between millions of species is typically restricted to isolated ecosystems -- thereby inhibiting any systemic overview.

Missing from the discussion in the *opus* is how system tools might enhance the collective capacity of civil society bodies, in relation to others, if any reliance is to be placed upon their ability to act -- other than in a sporadic and ad hoc manner. The issue is discussed separately from one systemic perspective ([Polyhedral Empowerment of Networks through Symmetry: psycho-social implications for organization and global governance](#), 2008).

Of increasing relevance is the question of whether social media networks can be considered as more than centrifugal clusters focused on particular interests, as separately argued ([Dynamically Gated Conceptual Communities: emergent patterns of isolation within knowledge society](#), 2004; [Ethan Zuckerman, Rewire: digital cosmopolitans in the Age of Connection](#), 2013; [Evgeny Morozov, The Net Delusion: the dark side of internet freedom](#), 2012).

**Interconnectedness of world problems** (17.1): This section reiterates the much-cited observation that world problems are interconnected. It makes no effort to indicate how many such problems there might be and the nature of their interconnectivity -- as documented in detail by the [World Problems Project](#) of the above-mentioned Encyclopedia. Whilst the systemic perspective of the latter might be considered irrelevant to the systemic perspective offered by the *opus* and the nature of a unifying vision, far more problematic is the assertion that the most fundamental problem is that of unlimited growth -- citing the research of Lester Brown (2008).

The difficulty with this assertion is that in a complex system different actors (notably those of civil society) frame quite differently what is the most "fundamental problem". Ironically, that could in fact be asserted to be the "systemic meta-problem" which the *opus* fails to address in adhering unquestioningly to the Brown perspective. Whilst those failing to agree with that assertion may be simply declared to be "wrong" or "misguided", the reality in practice is that the consequence is that they will not then subscribe to any simplistic strategy which neglects their own particular perception. This may well be better informed than is readily assumed. How is that to be determined from a systemic perspective? By counting the number of "likes"?

Curiously, as further discussed below, the only schematic in the *opus* resembling a systems diagram is that reproduced from Brown (2008) indicating some 60 interconnected problems associated with unlimited growth. By contrast, the World Problems Project profiles some 56,135 problems (variously defined) as variously perceived by international constituencies [see [table](#)]. A total of some 269,953 relationships between them are indicated (variously distinguished).

This network data enabled detection of systemic feedback loops of various lengths identified between 12,397 perceived problems ([Feedback Loops Linking World Problems](#), 2000; [Examples of vicious problem cycles and loops](#)). These included 35,438 9-loop problems (as well as 10,600 8-loop, 3,473 7-loop, 1,163 6-loop, 473 5-loop, 230 4-loop, 173 3-loop). The purpose was to raise the level of systemic analysis, notably through enabling consideration of configurations of interlocking between such loops ([Spherical Configuration of Categories -- to reflect systemic patterns of environmental checks and balances](#), 1994)

**Systemic solutions** (18): The *opus* frames its consideration of systemic solutions through the "review of proposals for reshaping globalization, developed by a task force of leading international NGOs" (p. 394). It provides a select list of 40 "research institutes and centers of learning of the global civil society" (pp. 395-6).

From a systemic perspective, the *opus* raises no questions as to whether this is considered a representative sample or whether particular perspectives have been designed out for the usual reasons -- as many would suspect. Use of "leading" is clearly designed to elicit controversy. Is it to be assumed that only civil society, and only those claiming to be leading it, have insights of strategic relevance to offer?

This assumption would then position other actors as irrelevant -- including the academic bodies with which the authors of the *opus* are

associated. More problematic still is the manner in which "other" bodies may then be asystemically framed as "opponents" in some way - representative of an obsolete, legacy mindset (*Us and Them: Relating to Challenging Others*, 2009). This then frames a pattern of game-playing, as speculatively explored (*All Blacks of Davos vs All Greens of Porto Alegre: reframing global strategic discord through polyphony?* 2007). However, from a biological perspective, what kind of system is possible without the dynamics between predators and prey?

This ill-considered selectivity itself defines the conclusions as asystemic. However there is the further consideration of what problematic issues and strategies are favoured by the selected sample -- and which are implicitly deprecated as irrelevant. Is the task force simply to be considered a collection of bodies who feel they share a common set of values -- in a world torn by conflicting sets of values. The *opus* sees no need to address the systemic issues of discourse between parties with highly divergent views and appreciations of each other. The point is tragically made at the time of writing by the ongoing bloody conflict between Sunni and Shi'ite in the Middle East -- purportedly groups sharing the same set of values to the highest degree.

The *opus* notes that the self-selected cluster of NGOs (primarily English-speaking and based in the West, if not in the USA) engendered a final report on *Alternatives to Economic Globalization* (2004). Given its origins, this might be named as the "Seattle Consensus" as an alternative to the so-called [Washington Consensus](#). Some specialized reports, notably on energy and climate change, are discussed in the *opus*.

No consideration is given of the process of uptake of such reports. This is despite the track record of previous reports emanating from eminent and worthy bodies or individuals (as noted below). The [United Nations Climate Change Conference](#) (Copenhagen, 2009) provided stark lessons in that respect, as noted separately (*Insights for the Future from the Change of Climate in Copenhagen*, 2010).

What might be considered the "Copenhagen Consensus" in consequence of learnings at the event? Subsequent events have been equally disappointing -- although without any "systemic" analysis of the factors contributing to this. How are such processes to be understood in systemic terms? Where is the unifying vision? Or, again, is it just a question of having "hope" -- despite its absence as a meaningful factor from any systemic analysis.

The scope of such dynamics has perhaps been best summarized by [Stafford Beer](#) (prior to his dramatic experience in the [Chile of Allende](#)) in his adaptation of *Le Chatelier's Principle* -- relevant to any discussion of complex adaptive systems:

Reformers, critics of institutions, consultants in innovation, people in short who "want to get something done", often fail to see this point. They cannot understand why their strictures, advice or demands do not result in effective change. They expect either to achieve a measure of success in their own terms or to be flung off the premises. But an ultra-stable system (like a social institution)... has no need to react in either of these ways. It specializes in equilibrial readjustment, which is to the observer a secret form of change requiring no actual alteration in the macro-systemic characteristics that he is trying to do something about. (Stafford Beer on *Le Chatelier's Principle* as applied to social systems: *The Cybernetic Cytoblast - management itself*. Chairman's Address to the International Cybernetic Congress, September 1969)

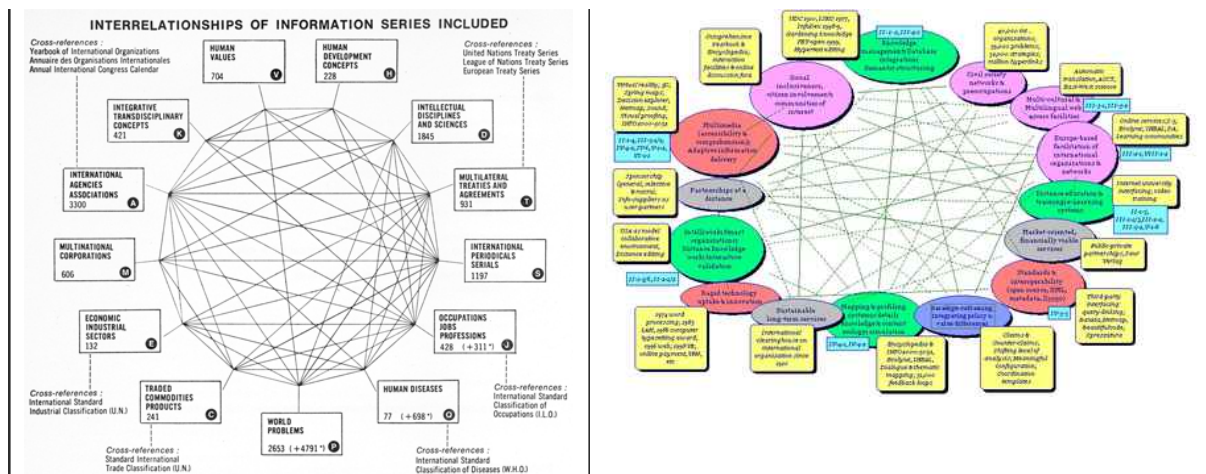
The [Global Strategies Project](#) profiled some 32,695 "solutions" (variously defined), as variously promoted by a comprehensive set of international constituencies [see [table](#)]. A total of some 262,941 relationships between them are indicated (variously distinguished). This network data enabled detection of feedback loops reinforcing or undermining (or counter-balancing) particular strategic possibilities.

**Ethics** (13.2.4): The *opus* is limited in its coverage of "ethics", treating it as a small section of Spirituality and Religion. Even more limited is its separate coverage of "values".

The difficulty is that groups and disciplines of every kind select and uphold particular sets of values, variously articulated and defined. These may be enshrined in constitutions or other (strategic) declarations. From a systems perspective, despite the fact that neither "values" nor "ethics" have any reality from a natural science perspective, these call for careful attention as being fundamental to organization belief systems and the possible emergence of any strategic consensus. The case is developed at much greater length in the [Human Values Project](#) of the above-mentioned Encyclopedia. There an effort was made to organize and interrelate a set of 987 "constructive values", together with 1,992 "destructive values", notably clustered by set of 230 "value polarities" -- the source of much division in practice. the exercise was designed to challenge the process by which values were uncritically defined.

The schematic relationship between these and other systemically relevant data sets from the above-mentioned Encyclopedia have previously been represented in the following schematic. These raise the question as to how best to represent together the systemic relationships between relevant sets of entities of different types.

<b>Various presentations of subproject database relationships (1976-2001)</b> [larger representation of <a href="#">images together</a> ; click <a href="#">on each</a> for individual enlargement]	
Database relationships (1976)	Database match with EU strategy (2001)



These data sets go further towards encompassing the variety of ways in which people engage with life and living -- and the challenges to which these give rise. The question is how to address such data more systemically -- and how to engage with it in a comprehensibly integrative manner, as discussed separately (\*\*).

## Unexamined methodological constraints

In helpfully highlighting what is "not there" (as noted above), the *opus* notably makes reference to cybernetics as a feature of the systems perspective. Missing however are emerging considerations of [second-order cybernetics](#) and the possibility of higher orders of cybernetics: "third", "fourth", as separately discussed (*Consciously Self-reflexive Global Initiatives: Renaissance zones, complex adaptive systems, and third order organizations*, 2007). Such self-reflexivity is notably consistent with the emphasis on consciousness in the *opus*.

The question is whether the current pattern of strategic analysis is locked into a first-order systems approach about which there is little second-order insight. How indeed are proposals, unifying visions, belief systems, and the like, to be understood systemically? Indeed where does the *opus* itself fit into any such system perspective? Furthermore, what then is the meaning of "perspective" and "vision" within such a context? What is the point from which observation occurs?

A possible check list of second-order challenges might then include the following:

1. **Unexamined assumptions regarding uptake capacity:** How is it assumed that potential audiences will engage with the *opus*? What attention will be given to it in the light of increasing information overload and attention deficiency, as separately argued (*Investing Attention Essential to Viable Growth*, 2014)
  1. Cognitive constraints on information processing: These include: "Miller number" ( $7 \pm 2$ ), "Spreadthink number" (assumed to be 5), "Dunbar's number" (commonly valued at 150), Span of control (*Conceptual clustering and cognitive constraints*, 2014)
  2. Pattern learning disability with respect to past initiatives: This is highlighted by the classic quote of [George Santayana](#): *Those who cannot remember the past are condemned to repeat it.*
2. **Absence of nexus of systemic concern:** What might be considered a knowledge-based nexus of systemic concern -- whether collective or individual? Where is such a concern nourished? How to distinguish the systemic scope of any such nexus, beyond self-serving claims enthusiastically made?
  1. Increasing delegation to intelligent agents without oversight: This is evident in the manner in which effective decision-making is transferred to complex algorithms whose operational consequences it is difficult to anticipate or supervise. Even more problematic situations are expected with the increasing dependence on artificial intelligence ([Nick Bostrom](#), *Get ready for the dawn of superintelligence*, *New Scientist*, 5 July 2014)
  2. Inability to simulate/represent the complexity of the current condition (as discussed below with respect to mapping)
3. **Ineffectual non-decision making:** How to engage with the extent of non-decision making as a *de facto* operating modality, as separately discussed (*The Art of Non-Decision-Making -- and the manipulation of categories*, 1997).
  1. Avoidance of challenging issues and problems: To what extent is there a well-developed pattern of denial of critical system dynamics, whether conscious or unconscious?
  2. Crisis dependency as the trigger for any change: If effective decisions are no longer taken in anticipation of both the expected and the unexpected, what does this imply for dependence on surprise to trigger any requisite fundamental change? Is there a case for recognition of a default mode in which decision is only triggered by a sufficient number of human sacrifices -- as in the distant past? Could legislation be ranked by the number of such sacrifices required to trigger it?
4. **Unrecognized extent of problem wickedness:** As noted above, wicked problems have proven to be beyond the capacity of conventional systems thinking. This raises the question of how to engage with them effectively, given constraints on cognitive capacity, and the like
  1. Dynamic complexity higher than collective comprehension capacity -- especially when unrecognized

2. Undermining of initiatives by institutional and personality strife: This is a characteristic blame-game pattern -- typically either an overt feature of negative campaigning or part of the process whereby groups, perspectives and individuals are designed out of any purportedly systematic perspective in order to reinforce their particular sense of identity
5. **Functional dependence on business-as-usual:** Systems thinking as articulated by the *opus* has become a luxury and an indulgence in the face of the pressures for business-as-usual. It might even be recognized as a feature of an increasing conceptual gap between the widely-informed and those who can only afford to focus on economic priorities for survival
1. Preoccupation with ensuring income/employment -- necessarily most evident with respect to the shorter term and the least privileged
  2. Economic constraints:
    - *copyright*: issues of intellectual copyright are now a primary factor in the economics of information dissemination. This is well-illustrated by the *opus* itself, as produced by Cambridge University Press from whom permission to use any portion of it must be obtained -- despite an explicit statement to the effect: *It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence* (back of title page). The systemic issue is not considered systematically therein in the light of the ongoing concern with peer review and *Science 2.0*, as the suggested new approach to science that uses information-sharing and collaboration made possible by network technologies. How is who expected to benefit from *The Systems View of Life: a unifying vision* under such circumstances? Who will not be enabled in this respect? How will this affect the uptake of those insights?
    - *advertising*: It is ever more evident that knowledge is dependent for its dissemination on advertising, whether by the media or in use of web search engines. Given the extent to which strategic initiatives are obliged to promote themselves as successful, irrespective of their level of inadequacy, this too can be considered as form of advertising. From a systemic perspective the question then arises as to the point at which advertising dominates knowledge (more conventionally understood) to the point of becoming knowledge (as publicly accepted). Taken further, at what point will such "knowledge" completely undermine any capacity to assess remedial strategies to concrete problems. How is knowledge then to be distinguished from special pleading in support of a particular perspective -- such as to marginalize others? What of the *opus* from this perspective?
6. **Minimalism and short-termism:**
1. Self-justificatory token initiatives: There are now very strong pressures to frame issues and strategies minimalistically in the shortest possible terms (notably with respect to budgetary and electoral cycles). Succinctly put, it is a question of how little needs to be done "to get away with it" and claim adequacy of response. Short-termism does not feature as a problem in an *opus*, which presumably calls for the systemic reconciliation of long and short-term -- especially when longer-term crises are promoted as critical, using the "peak" framing (*Checklist of Peak Experiences Challenging Humanity*, 2008).
  2. Non-transparency and corruption: It could be considered extraordinary that a systemic study should avoid any reference to recent disclosures regarding invasive surveillance, especially in terms of what has thereby been highlighted regarding the extent of non-transparency. Is it assumed -- as in the past -- that a valid systems perspective should only focus on what is apparently transparent? Should a systems perspective of higher order anticipate levels of unsuspected non-transparency that are liable to completely reframe a number of systemic assumptions?  
More intriguing is why the *opus* should avoid addressing this challenge -- typically an indicator that its objectivity is constrained by institutional pressures. As with issues that have only recently become transparent through a series of scandals, the extent of corruption has long been denied at the highest levels. Clearly a systemic approach should take account of pressures to constrain information dissemination that might limit uptake of a systemic perspective -- other than to reinforce such constraints.
7. **Asystemic response to the factors above:** Aside from the need for contexts in which first-order issues and initiatives are a primary focus, the argument can be extended to second and higher order issues, such as those articulated above. In promoting the systemic perspective of the *opus*, where is it assumed that its "unifying" insights might be further developed? On the jacket it is claimed that the *opus* is primarily written for undergraduates, but is also *essential reading for graduate students and researchers interested in understanding the new systemic conception of life and its implications for a broad range of professions -- from economics and politics to medicine, psychology, and law*. This intention can be usefully challenged, given the uncritical complicity of such academics with the systemic conditions which gave rise to the recent financial crisis -- most notably the schools of management.
1. Failure to recognize and articulate in systemic terms factors such as those above
  2. Failure to render the pattern widely comprehensible and actionable

## Beyond promotion of "our plan"

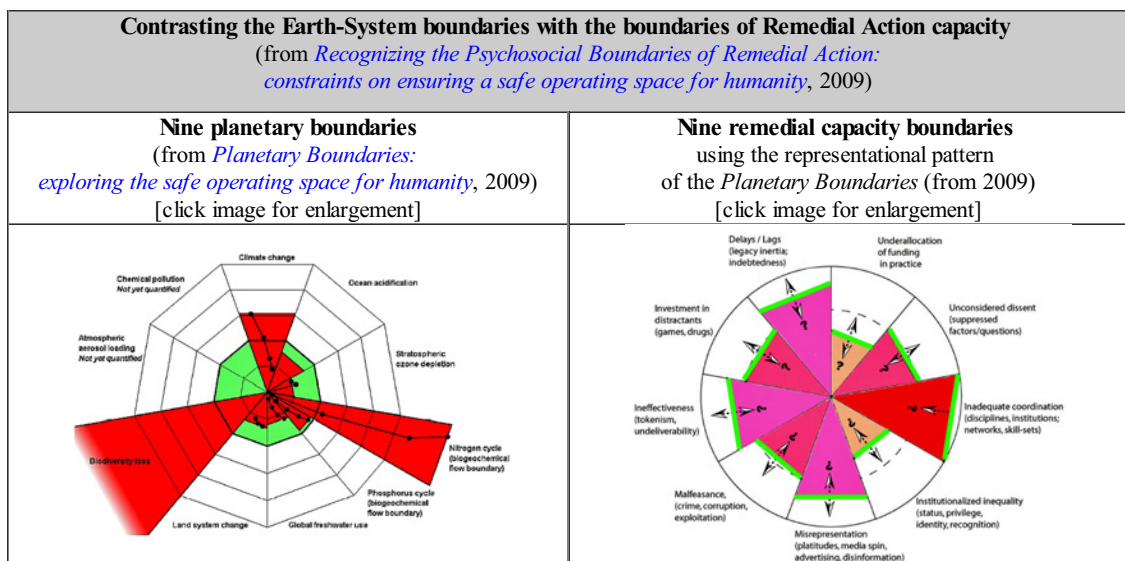
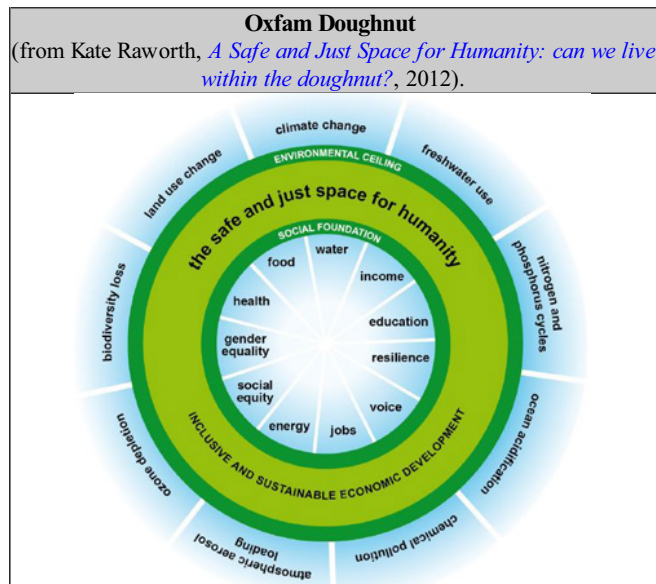
The challenge of remedial capacity was noted above (*Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity*, 2009).

**Requisite variety:** From a cybernetic perspective, it is useful to highlight the principle of **requisite variety** fundamental to the governance of any system. This holds that if a system is to be stable (meaning "sustainable"?), the number of states of its control mechanism must be greater than or equal to the number of states in the system being controlled.

It is therefore useful to note recent examples of the variety of global strategic articulations neglected in preference to that of Lester

Brown's *Plan B 3.0* (2008), as especially highlighted by the *opus*:

- Initiatives variously promoted by the Club of Rome (see systematic commentary at [Club of Rome Reports and Bifurcations: a 40-year overview](#), 2012):
  - Ervin Laszlo (*Goals for Mankind: Report to the Club of Rome on the New Horizons of Global Community*, 1977)
  - Yehezkel Dror (*The Capacity to Govern: a Report to the Club of Rome*, 2001)
  - J. Rockström, W. L. Steffen, et al. (*Planetary Boundaries: exploring the safe operating space for humanity, Ecology and Society* 14, 2009, 2)
  - Jorgen Randers (*2052: A Global Forecast for the Next Forty Years*, 2012) reviewed separately (*Engendering 2052 through Re-imagining the Present*, 2012)
- The Royal Society Science Policy Centre (*People and the Planet*, 2012), reviewed separately (*Scientific Gerrymandering of Boundaries of Overpopulation Debate*, 2012)
- Kate Raworth (*A Safe and Just Space for Humanity: can we live within the doughnut?*, Oxfam, February 2012). This is one approach to commentary on the pattern of issues highlighted by the much-debated set of 9 "planetary boundaries" -- augmented by a further set of 11 social boundaries, based on the 11 dimensions of human deprivation that emerged from the issues raised by governments in their Rio+20 submissions. The paper presents a single visual framework -- shaped like a doughnut -- that represents a space within which humanity can thrive. This offers a fruitful focus for debate on remedial capacity as discussed separately (*Exploring the Hidden Mysteries of Oxfam's Doughnut: recognizing the systemic negligence of an Earth Summit*, 2012).



As noted in the *Presentation context of the 2052 Report* (*2052: a Global Forecast for the Next Forty Years as presented to the Club of Rome*, 2012), it is typical of any such report, especially including the many produced for the Club of Rome, that little reference (if any) is made by one report to any other preceding it or conducted in parallel to it. The extent to which the recent Royal Society and Club of Rome initiatives ignore each other is but one example of "turf wars" of which Turner (2007) gave a more extensive account in relation to *Limits to Growth*. The *opus* makes no reference to any of the above, nor does it include the Club of Rome in its selection of 40 "research

institutes and centers of learning of the global civil society" (pp. 395-6). As noted with respect to the 2052 report:

It might be said that the Club's capacity to give its authority -- to what must now be seen to be essentially pathetic recommendations -- constitutes an inherent incapacity to learn. This is especially ironic given that it has elicited a valuable exploration of "learning" (James W. Botkin, [Mahdi Elmandjra](#) and Mircea Malitza, *No Limits to Learning: Bridging the Human Gap -- A Report to the Club of Rome*, 1980), as previously reviewed (*Societal Learning and the Erosion of Collective Memory: a critique of the Club of Rome Report: No Limits to Learning*, 1980). The 2052 Report makes no reference to any previous "Report to the Club of Rome", other than those relating directly to *Limits to Growth*.

From a systemic perspective, despite promotion of the concept of a so-called [learning society](#) by UNESCO and OECD, it would seem to be very clear that such reports reflect a non-learning modality, consistent with the above-quoted adage of Santayana: ***Those who cannot remember the past are condemned to repeat it.*** By failing to call this pattern into question, the systems view of the *opus* itself reinforces non-learning despite being specifically addressed to academia, as noted above.

**Moving on?** The challenge of remedial capacity can however be usefully recognized as having "moved" on from:

- assertion of existence of:
  - a single problem or pattern of problems
  - a single strategy or pattern of strategies
  - a shortage of resources of some kind
- reliance on:
  - hope or some other value
  - time as enabling current strategies to have their desired effect "in due course"
  - some particular area of expertise
  - some particular set of institutions
  - some particular set of initiatives

The issue can now be framed as the need to move on from promotion of "Our Plan" by different coalitions of organizations, individual groups, groups of individuals, or by single individuals.

A comparison could, for example, be made between the unifying syntheses produced by remarkable individuals, often strongly informed by a systems perspective ([Edward Goldsmith](#), *The Way: an ecological world-view*, 1992; [Stafford Beer](#), *Platform for Change*, 1975; [Edward Haskell](#), *Full Circle: the moral force of unified science*, 1972; [R. Buckminster Fuller](#), *Operating Manual for Spaceship Earth*, 1968).

One of the few to undertake such a comparison, with objectives consistent with those of the *opus*, is [Jennifer Gidley](#) (*The Evolution of Consciousness as a Planetary Imperative: an integration of integral Views*, *Integral Review: a transdisciplinary and transcultural journal for new thought, research and praxis*, 2007, Issue 5). Gidley explores commonalities and contrasts between the integral perspectives of Rudolf Steiner, Jean Gebser and Ken Wilber.

To stress the point, in systemic terms there is an instructive comparison to be made between any synthesis from a singular unifying perspective (however well intentioned, as with the *opus*), and with that of others of a far more problematic nature (Adolf Hitler, *Mein Kampf*, 1925). In systemic terms, the *opus* is part of that pattern of production of unifying syntheses characterized by contrasting strengths and weaknesses, as variously recognized. These emerge through their confrontation -- or any recognition that they are a feature of the requisite variety of a learning system in a global knowledge-based society. Given its purported originality, how is the *opus* to be compared to that of other reports claiming to have related or overlapping intentions?

Would its coverage be considered especially unusual and valuable 10, 20, or 30 years ago -- or 10, 20, or 30 years into the future? What has been the uptake of such arguments since those times past? What is to be learned from the pattern of mutual citation of such reports, if that can be identified? Where is that learning assembled?

One "systematic" effort to identify integrative views has been that of the [Integrative Knowledge Project](#) of the above-mentioned Encyclopedia. This profiled 633 "integrative concepts". It is however characteristic that any understanding of "unifying" is itself subject to "turf wars" whose existence is not considered a factor in the integrative perspective offered.

**Systematic text analysis?** It is extraordinary to note the remarkable development of text analysis software [see [Wikipedia List of text mining software](#); also [Top 30 text analysis. text mining, text analytics](#); [Top 11 free software for text analysis. text mining, text analytics](#)]. Many are now capable of eliciting concept maps from the relationships amongst the terms within any text of whatever extent [see tutorial of [Leximancer](#)]. With respect to the extensive range of Club of Rome reports over 40 years, a case was made that their contents could be analyzed together to engender a fruitful overview.

A similar case could be made for the analysis of the points made in the otherwise insightful *opus* reviewed here. As noted above, the *opus* has no "site map", other than the contents page reproduced above, and its 26 page index. Together these do not provide a systemic overview. What would emerge from such an overview?

The argument could however be taken further by combining the *opus* text, with that of the Club of Rome reports, together with others (of which a sample is indicated above). The interesting "meta-systemic" question is why this is not done and why no efforts are made to explore the possibility -- given its technical feasibility at this time. A significant contributing factor is the issue of intellectual copyright constraints, variously held by different parties on the individual publications. More fundamental is the very particular asystemic understanding of "unifying" cultivated by those offering unifying perspectives -- but offering them competitively. There is also the strong

possibility that any such overview is not widely desired -- in preference to engendering "Our Plan", ignoring any other efforts as irrelevant. .

## Mapping complementary and contrasting views

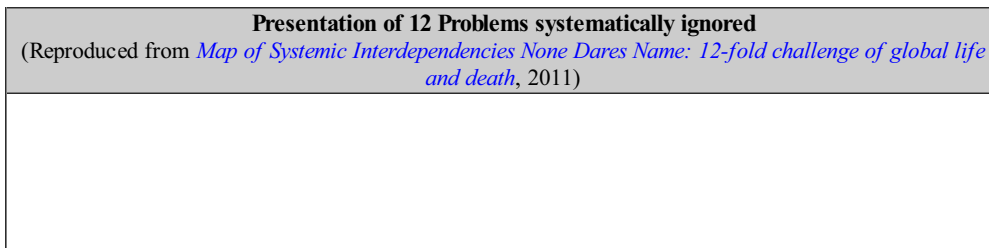
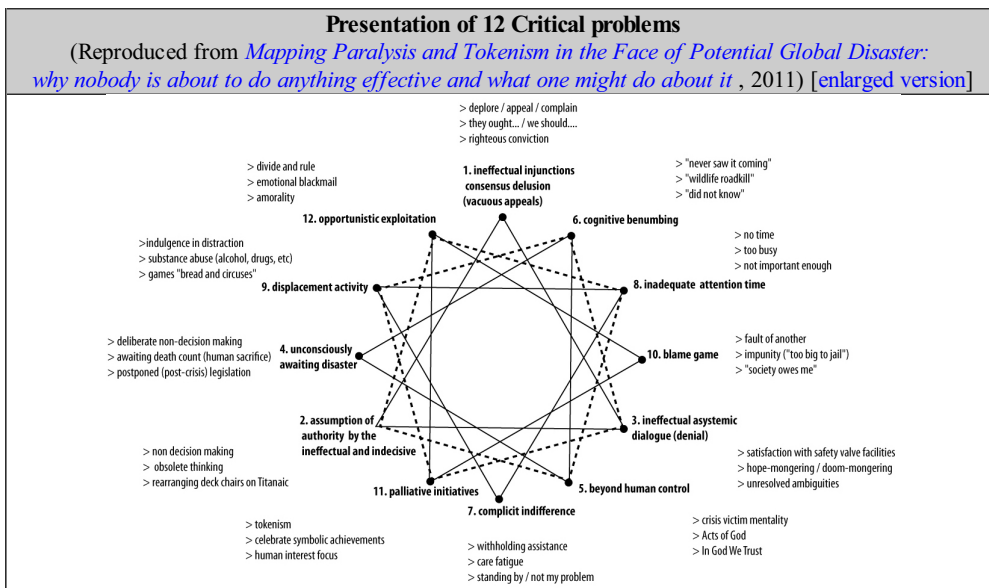
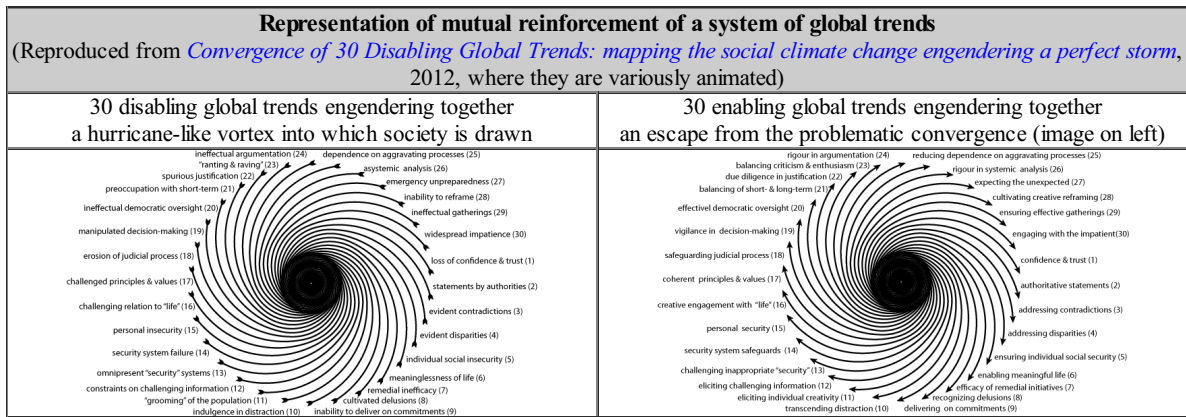
As noted above, the *opus* makes no attempt to map the system entities to which it refers -- with the exception of a limited set of world problems relating to unlimited growth. In its focus on life in the biosphere it does however reproduce a relatively complex network -- "a section of the metabolic network of a 'simple' bacterium" (p. 131).

The sense in which the "life" of the sociosphere and the noosphere is significantly represented by any network of organizations, strategies, problems or values is implied to some degree but not explored, as with the sense in which such a network performs "metabolic" functions with respect to sustaining that life. Clearly the conceptual tools developed for the biosphere also merit consideration with respect to the sociosphere and noosphere -- as suggested by the advances in biomimicry discussed in the *opus*.

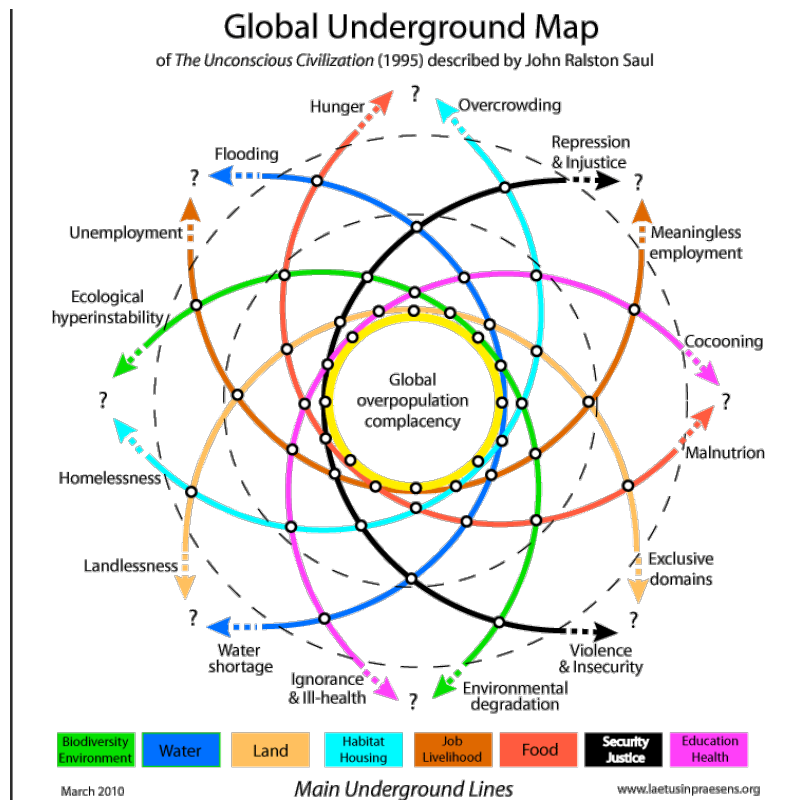
It is appropriate to indicate that examples of networks of problems and strategies resulting from the Encyclopedia initiative are accessible from a web page with sections on [Access to images on the Laetus site](#), [Experimental visualization of networks](#), and [PPT presentations \(with images\)](#). Many specifically resulted from later online development of the Encyclopedia with EU Info2000 funding (see [visualization gallery](#)).

From a global strategic perspective, given the concluding concerns of the *opus* reviewed here, the question is how to frame further possibilities in visual form. Various presentations can indeed be made as indicated in the following images (reduced in size here). These are of questionable utility, but significant because they fail to reframe the challenge in an actionable manner. As experiments they raise the question as to how the systemic concepts of the *opus* might be adapted to render any such visualizations of greater value.

Somewhat ironically, some of the images below are reminiscent of the above-indicated cover of the *opus* and that of the Oxfam doughnut -- framing a "hole" -- with the further association to the Taoist quotation in the introduction.







Are such visualizations to be understood as sub-systems of a larger, generic [metabolic pathway map](#) yet to be recognized -- a systemic meta-pattern?

## Transcending sterile meta-patterns of explanation

The above commentary and associated questions raise the issue of how to move on.

**Vision vs. Polysensorial?** The *opus* relies on the vision metaphor, implying that any unifying vision is something to be seen from a particular perspective -- whether or not multiple "eyes" are required for stereoscopic vision, as argued by [Magoroh Maruyama](#) (*Polyocular Vision or Subunderstanding?* *Organization Studies*, 2004). To what extent is the *opus* an exercise in "subunderstanding"? Given the range of other senses -- singly or in combination, -- by which "unifying" could be comprehended, there is a case for incorporating the choice of metaphor into the process of framing unifying (*Metaphor and the Language of Futures*, 1992; *Cyclopean Vision vs Poly-sensual Engagement*, 2006; *Strategic Challenge of Polysensorial Knowledge: bringing the "elephant" into "focus"*, 2008).

**Experiential coherence:** Clearly many people feel obliged seek alternatives to "unifying vision" through other modalities. These merit recognition in a living reality. What is the role of psychedelic experience in that respect -- especially in contrast to that of religion? How might these alternatives be reconciled in embodiment -- the embodiment of unifying processes -- following the arguments of George Lakoff and Mark Johnson (*Philosophy In The Flesh: the embodied mind and its challenge to western thought*, 1999)? Is some such approach the key to strategic traction, as separately explored (*Embodiment of Change: comprehension, traction and impact?* 2011).

**Hypothetical ideal solution?** One way to frame the challenge is to imagine an ideal resolution of the world problematic -- with an ideal set of strategies -- as might be recognized in an ideal future. The issue with this "thought experiment" is how the many constituencies at the present time would respond to such a hypothetical ideal. Would it even be widely comprehensible? If not, why not? What criticism would it arouse from particular perspectives? How would alternatives to such an ultimate solution be framed -- then to be recognized as sub-optimal? Why might current formulations be preferred? How might this potential diversity be integrated into a subtler unifying view?

**Mathematical reframing of unifying frameworks:** Given the sophistication offered by some of the subtler branches of mathematics and their visualization possibilities, are there new ways in which the dilemmas of the present could be framed and represented? What renders a meta-pattern of explanation credible and/or questionable? How many ways can "unifying" be fruitfully articulated, and what is their relationship?

**Strategic history of plans to "save the world":** Another approach would be to review the history of "save the world" plans, their proponents and their outcomes. How did learnings from one such plan get transferred to another, if at all? (*Collective Learning from Calls for Global Action*, 1981)

It is of course the case that past reports, upheld as offering a unifying vision, would tend to organize their arguments under various patterns of headings. It could be asked whether these patterns were together susceptible to some form of systemic analysis in their own right -- to elicit an insightful meta-pattern -- in the spirit of [Gregory Bateson](#):

The pattern which connects is a meta-pattern. It is a pattern of patterns. It is that meta-pattern which defines the vast generalization that, indeed, it is patterns which connect. (*Mind and Nature: a necessary unity*, 1979)

And it is from this perspective that Bateson warns: *Break the pattern which connects the items of learning and you necessarily destroy all quality* (1979, pp. 8-11).

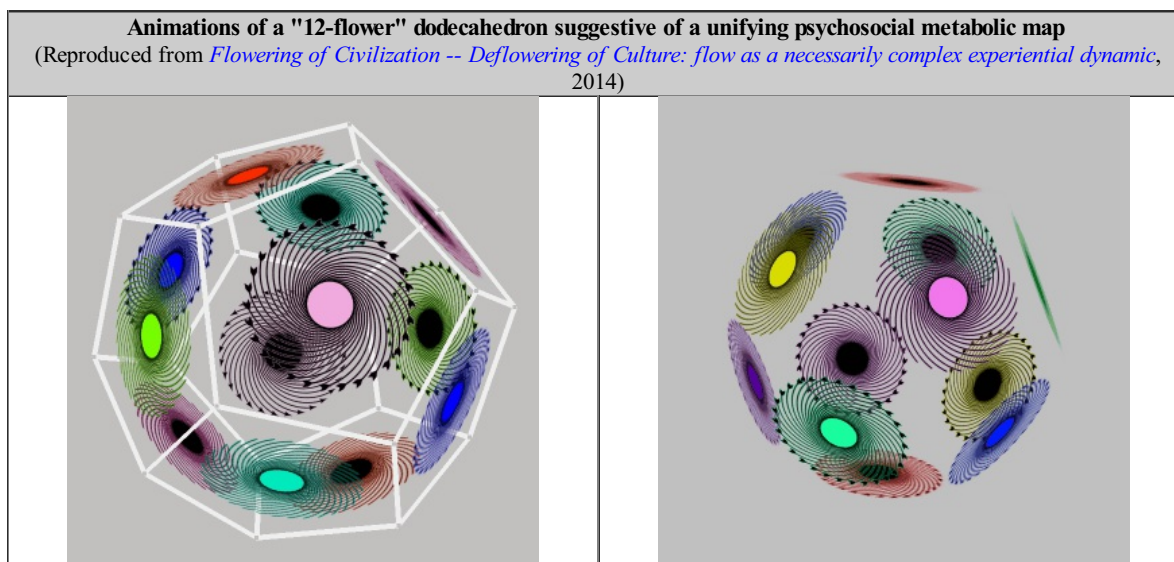
**Elaboration of experiential knowledge base:** Another approach would be to envisage a gathering of individuals who had struggled over decades to articulate a comprehensive strategy and unifying visions -- and had, in the process, acquired insights into the nature and justification for resistance to its adoption, or to each others arguments. An alternative would be to use the well-developed procedures for oral history recording. What do people tend to learn through engagement in the process -- as suggested by the adaptation of Le Chatelier's Principle by Stafford Beer from a cybernetic perspective (as quoted above).

How is subscribing to a unifying perspective to be envisaged in the light of such experience? How to distinguish and order the knowledge base from which it derives in each case? What are the dangers that such learning will be repeated by new enthusiasts -- without being able to move beyond the insights supposedly already acquired?

**Developing psychosocial "metabolic pathway" mappings:** As mentioned above, [metabolic pathways](#) are fundamental to systemic life processes as they are understood in biological terms. Various efforts have been made to provide comprehensive metabolic pathway maps (see list of [Free Pathway Maps](#); (Kellogg [Metabolic Pathways](#); SigmaAldrich [Metabolic Pathways](#); Elsevier [Pathway Studio](#)). [Wikipedia](#) offers [WikiPathways](#) as an open, public platform dedicated to the curation of biological pathways by and for the scientific community. Curiously, unlike the less complex challenge of representation of the [Periodic Table of Chemical Elements](#), efforts have not been made to elaborate more complex representations than simple 2D charts.

Despite arguments for recognition of social autopoiesis, and the explosion of international initiatives of every form, no attempts are made to develop analogous maps -- other than the visualization initiatives described above with respect to the *Yearbook of International Organizations* and the *Encyclopedia of world Problems and Human Potential*.

The above schematics could be considered indicative of psychosocial metabolic pathways. The question is how to configure such maps into a comprehensive map -- suggestive of a "unifying vision". The following represent one exercise to that end -- with the individual pathways framed metaphorically as "flowers"..



Use of polyhedra, especially those that are spherically symmetrical, places any chosen mapping within a topological context in which it can be transformed (experimentally) into a wide range of other such polyhedra. The *Stella Polyhedron Navigator* can be used for that purpose (as in the production of the animations above). Use of the dodecahedron in the above case is suggestive of a means of rethinking into 3D the widespread use of the archetypal "roundtable" valued for its knowledge management and governance implications, as separately discussed (*Implication of the 12 Knights in any Strategic Round Table*, 2014).

This then raises useful questions about the connectivity between the functions with which each metabolic pathway is associated (*Spherical Configuration of Interlocking Roundtables: Internet enhancement of global self-organization through patterns of dialogue*, 1998). The 12-fold pattern can be usefully related to arguments of Edward de Bono (*Six Thinking Hats*, 1985; *Six Frames: For Thinking About Information*, 2008).

**Function of nescience with respect to a "hole" in reality?** The introduction to this review cited the renown of one of the authors with respect to *The Tao of Physics* and adapted an image on the cover of the book to highlight the merit of a central "hole" implicit in any articulation of a unifying vision -- with respect to what is "not there". Separately an argument was made for creative engagement with unknowing, rather than seeking forms of closure which are necessarily premature -- if the future is expected to offer further insight (*Embodying a Hypercomplex of Unhygienic Nescience: questionable connectivity enabling apprehension of matters otherwise*, 2014)

What might be the nature of such a "hole" -- given the manner in which it is beyond description -- and how might it govern cognitive processes (*Existential implications -- of a "hole" in conventional reality?* 2012). Just as astrophysics is free to indulge in speculation about *Boltzmann Brains* and intelligence in/of the universe, there may be a case for speculating on forms of indwelling intelligence consistent with the mindfulness/mindlessness complex framed by Taoism (*Implication of Indwelling Intelligence in Global Confidence-building: sustaining the construction and dynamic of psychosocial reality through questioning*, 2012). The empty centres of the dodecahedra above offer a way of imagining such a hole -- usefully giving a locus for what occurs "under the table" -- so typically

ignored in the case of any "roundtable". It could be recognized as the locus of ignorance and nescience in both fruitful and unfruitful senses.

As with the astrophysics of a form of circulation of light around mysterious blackholes, is there a case for imagining forms of encircling any ultimately attractive formulation -- as a means of transcending more simplistic framings (*Paradoxes of Engaging with the Ultimate in any Guise: living life penultimately*, 2012; *World Introversion through Paracycling: global potential for living sustainably "outside-inside"*, 2013; *Way Round Cognitive Ground Zero and Pointlessness?* 2012) Might there be possibilities of "encycling" problems strategically (*Encycling Problematic Wickedness for Potential Humanity: imagining a future Encyclopedia of World Problems and Human Potential*, 2014).

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