



# laetus in praesens

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## Global Challenge of the Global Challenge

### ¿ In-quest of a decision-making framework appropriate to a world in crisis ?

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## Introduction

This is a response to the announcement of the surprising *Global Challenges Prize for a New Shape Remodelling Global Cooperation* (2017). As articulated in a [letter to potential participants](#), it has been instigated by [László Szombatfalvy](#), founder and chairman of the [Global Challenges Foundation](#), created in 2012 with the aim of deepening understanding of the greatest risks to humanity -- and catalyzing ideas around how these global risks can be minimized or eliminated.

Acclaimed as one of Sweden's most successful investors of all time, László Szombatfalvy is urging the younger generation to rethink global governance. The Global Challenges Prize takes the form of \$5 million USD in prizes for the best ideas that re-envision global governance for the 21st century (Tom Turula, *This Swedish billionaire has issued a \$5 million award for anyone who invents a UN 2.0*, *Nordic Business Insider*, 25 Nov 2016). The founder is inspired by the belief that radical measures are required to tackle inequality, and that the world's rich need to take more responsibility. Proposals are to be submitted before 27th May 2017, with results to be announced in November 2017 after evaluation by a panel of academic experts followed by a high-level international jury of respected global figures. The jury will choose the final winners based on how well they meet a set of [criteria](#).

The following is a reflection on the global challenge of any such delightfully provocative global challenge. How best to apprehend the possibility it represents and the nature of the response it is expected to engender? The new challenge is of course unique and original but it also emerges within a context of invocations to creative new thinking over decades past -- all evoking hopes for their fruitful outcome.

There is clearly a case for learning from the past, given the oft-cited warning of [George Santayana](#): *Those who cannot remember the past are condemned to repeat it*. There are of course the other oft-cited learnings of Albert Einstein (*Insanity: doing the same thing over and over again and expecting different results*) and *We can not solve our problems with the same level of thinking that created them*). There is also the precautionary insight of [H. L. Mencken](#): *For every complex problem there is an answer that is clear, simple, and wrong*.

None of these may be significant if the primary purpose is to evoke a process of engagement on the part of those making submissions -- to evoke hope, if "hope-mongering" is not to be called into question. There is however a concern with how best to benefit collectively from this process, whatever its effect with regard to elaborating a more effective decision-making framework.

For those who have long been concerned about the evident problems of global civilization, and the frustrated potential in that regard, there is a further concern. How have past responses been so ineffectual, despite the commitment variously applied at different stages by the best and the brightest -- with whatever level of funding? Given the focus on decision-making of the new Global Challenges Prize, is there then a case for implicating its own decision-making process in envisioning possibilities for the future and how these are to be selected? From the self-referential perspective of cybernetics, this suggests the need to recognize that: *unless a proposal takes account of how it is itself part of the problem, it is unlikely to comprehend or encompass the nature of the solution required*.

Such a consideration applies equally to the following commentary. To indicate a necessary break from potentially outmoded conventional patterns in the English language, the subtitle is a question. It is prefigured by the inverted question mark  $\text{¿}$  to recall the need for the unusual -- possibly even an inversion of perspective of which the emergence of populism is perhaps only one indicator. The subtitle also exploits a play on "in quest", variously understood as "in quest" and "inquest", as well as offering some sense of "questing within". "Inquest" is a reminder of the relevance of any probable future perspective in evaluating the current response to crisis.

In that spirit, given the hopes engendered by past initiatives -- and their track record -- it is questionable how seriously any new proposal should now be taken. In taking it seriously however, there is a case for doing so somewhat playfully as suggested by the following account (*Enacting Transformative Integral Thinking through Playful Elegance: a Symposium at the End of the Universe?* 2010). What should a Global Challenges Prize evoke in anticipation of a collapse of global civilization -- as variously imagined?

## Inadequacy of global decision-making?

As noted by Aseem Prakash and Matthew Potoski (*Dysfunctional institutions? Toward a New Agenda in Governance Studies, Regulation and Governance*, 10, 2016, 2):

There is a wide-spread perception among academics and commentators that institutional dysfunction has become increasingly common in important social, political, and economics arenas. Opinion polls show a decline in trust and confidence in major actors and institutions, including inter-governmental organizations, governments, firms, NGOs, and religious organizations. For some, the core of the problem is that the hitherto well-functioning states have become less effective in aggregating and acting upon citizens' preferences. Many policy initiatives of the 1990s -- deregulation, privatization, new public management, private regulation, regional integration, civil society, and so on -- seemed to have failed to meet expectations.

In the quest of the Global Challenges Prize for "[A New Shape](#)", one commentary specifically focuses on the possibility of a "UN 2.0" -- exploiting internet jargon with respect to [upgrades](#). Unfortunately any UN-focus naturally frames the quest in terms of the decades of debate on UN reform and the frustration to which this has given rise. There is a case for exploring the challenge more generally given that track record.

It would be good to benefit from some kind of checklist of what does not work, with some indication of why. More systemic insight into why complex systems governance do not "get off the ground" (or fail) merit recognition, as separately argued (*Variety of System Failures Engendered by Negligent Distinctions*, 2016). Of particular interest is the systems engineering compendium by [John Gall](#), successively titled as *Systemantics: how systems really work and how they fail* (1986) and *The Systems Bible: the beginner's guide to systems large and small* (2002) -- and separately reviewed as *Why Systems Fail and Problems Sprout Anew* (1980). Also relevant are obviously the arguments of [Jared Diamond](#) (*Collapse: how societies choose to fail or succeed*, 2005).

Issues of concern include:

- delays
- dominance
- influence peddling
- tokenism/traction
- appearance
- visibility
- misleadership
- representativity
- oversimplification
- short-termism
- status
- information overload
- tunnel/funnel/blinkered vision
- blind spots
- risk aversion
- panic avoidance
- secrecy
- indifference
- procedural preoccupations
- deciding to meet and deciding to resolve
- media preoccupations with appearance and image
- blame-game
- status preoccupation
- fake news / post-truth
- disarray -- "headless chicken" dynamics

Given the track record of [UN reform](#), there is the possibility that the much sought "new thinking" may be more fruitfully triggered by calling into question the methodology through which it is sought. As noted by the Global Policy Forum ([UN Reform](#)):

UN reform is endlessly discussed, but there is sharp disagreement on what kind of reform is needed and for what purpose. Foundations, think tanks and blue ribbon commissions regularly call for institutional renovation. Secretary Generals trumpet their reform initiatives. NGOs make earnest proposals. And from Washington come somber warnings that the UN must "reform or die". UN reform is not a politically neutral, technocratic exercise. Bids for power and privilege lurk in every proposal. Many experts would like to see a stronger and more effective multilateral organization, but the mightiest governments are usually opposed to a robust institution, and they often use their power to block change.

Despite Einstein's above mentioned insight (*We can not solve our problems with the same level of thinking that created them*), to what extent can a problematic methodology be detected in the Global Challenges process itself?

Given the exploitation of the internet metaphor -- towards UN 2.0 -- such a possibility was explored with respect to the [1st International Conference on Internet Science](#) (2013), held under the aegis of the EU (*Internyent Nescience? Self-referential upgrading of obsolete Internet conference processes inhibiting emergence of integrative knowledge*, 2013).

Or maybe there is an unstated dependence on failure to evoke fundamental reform and more appropriate patterns. There may then be an "art" to inaction (*The Art of Non-Decision-Making -- and the manipulation of categories*, 1997). Awaiting disaster may even be the most effective mode of decision-making in enabling necessary change.

## Starting afresh in envisioning new possibilities?

Much as there is a need to evoke new creativity, the tendency to "start afresh" endangers the viability of what is envisioned. There is a strong case for recognizing what proved to be less than successful in the past, especially given the tendency to disguise the extent of failure through upbeat reporting and selective forgetfulness. So many imaginative initiatives have sunk without a trace and with little effort to learn from them. Enthusiasm is evoked for the new in defiance of the above-mentioned warning of George Santayana.

One point of departure is to recognize the variety of ways in which new systemic processes tend to fail, as separately argued (*Variety of System Failures Engendered by Negligent Distinctions*, 2016). Another is to recognize the extent of misplaced focus on the more obvious challenges (*Vigorous Application of Derivative Thinking to Derivative Problems*, 2013). Paradoxically, in the spirit of this argument, both are necessarily problematic and merit being called into question. How indeed to transcend enthusiasm for thinking "positively" in contrast with the questionable focus on "negative" feedback?

A different approach is merely to recall some of the heroic attempts of the past as providing the context for any new response. How are they best considered as memorials to forms of inadequacy which need to be overcome -- or even as memorials to problems mistakenly upheld as critical by the past? Do they individually or collectively offer guidance for new imagination? Especially intriguing is why the uptake of their insights proved to be so limited.

Examples, variously involving authorities, the eminent, the wise, and activists, might include the following (partially derived from (*Emergence of a Global Misleadership Council: misleading as vital to governance of the future?* 2007)):

- Religions (as catalysts of so much societal violence) and their various unrelated [interfaith dialogue](#) initiatives, including the [Parliament of the World's Religions](#) (*List of interreligious organizations*, *Wikipedia*)
- Gatherings of the eminent, the wise and the influential
  - "Clubs": [Club of Rome](#), [Club of Budapest](#), [Bilderberg Group](#), [Club of Athens Global Governance Group](#)
  - "Councils" of the influential and the wise: [Council on Foreign Relations](#), [InterAction Council](#), [The Elders](#), [Trilateral Commission](#), [Mont Pelerin Society](#), [Lindau Nobel Laureate Meetings](#), [Wisdom Keepers](#)
- Initiatives of international authorities, including:
  - [Agenda 21](#), [Sustainable Development Goals](#), [Millennium Development Goals](#),
  - [United Nations University](#), [UN Global Compact](#)
- Awards and prizes for [humanitarianism](#), [international relations](#), and [service](#), notably including:
  - [Charlemagne Prize](#), [Gandhi Peace Prize](#), [Grassroot Diplomat Initiative Award](#), [International Peace Prize](#), [Nobel Peace Prize](#), [Right Livelihood Award](#), [Sakharov Prize](#), [Templeton Prize](#), [U Thant Peace Award](#), [Hutter Prize](#) (Prize for Compressing Human Knowledge)
- Integrative secular initiatives:
  - Universities: [Singularity University](#) ([Global Grand Challenges](#)), [Gaia University](#), [University for Peace](#), [Transcend Peace University](#)
  - Conference series: [World Economic Forum](#), [World Social Forum](#), [Tällberg Forum](#), [State of the World Forum](#), [World Strategic Forum](#), [European Forum Alpbach](#)
  - Futures research: [The Millennium Project](#), [World Futures Studies Federation](#), [World Future Council](#)
  - Systemic preoccupations: [International Society for the Systems Sciences](#), [Integral Movement](#), [Edge Foundation](#) ([World Question Center](#))
- Secret and semi-secret societies: [Opus Dei](#), [Freemasonry](#)
- Enabling environments (as distinct from universities):
  - think tanks, incubators, EU centres of excellence
  - monasteries, ashrams, retreat centres
  - intentional communities: [Auroville](#), [Damanhur](#), [Findhorn](#), [Arcosanti](#), etc

## Deriving insights and learnings from past and complementary initiatives

In addition to the conferences and other dialogue processes these may have engendered, some of these initiatives have given rise to writings and compilations reflective of their learnings and recommendations. These include:

- Encyclopedias (increasingly accessible online), including:
  - [Wikipedia](#)
  - [State of the World Forum](#) proposal (*Global Solutions for Global Challenges: a proposed International Consultation and Global Solutions Wiki*) as discussed separately (*Global Solutions Wiki*)
  - *Encyclopedia of Life Support Systems* (UNESCO-EOLSS)
  - *Hmolpedia: Encyclopedia of Human Thermodynamics, Human Chemistry, and Human Physics*
  - *New Advent: the Catholic Encyclopedia*
  - *Encyclopedia of World Problems and Human Potential* interrelating databases on perceived [world problems](#), [global strategies](#), [human values](#), [human development](#), [integrative knowledge](#), [metaphors/patterns](#), and the like) in relation to the complementary *Yearbook of International Organizations*
- Integrative strategic project reports (typically "sinking without a trace):

- [Club of Rome reports](#) (as discussed below), notably including:
  - Jorgen Randers: *2052: A Global Forecast for the Next Forty Years* (2012)
  - W. Botkin, M. Elmandjra and M. Malitza: *No Limits to Learning: bridging the human gap* (1979)
  - Johan Rockstrom, et al: *Planetary Boundaries: exploring the safe operating space for humanity* (2009)
  - Yehzkel Dror: *The Capacity to Govern* (2001)
- UNU/GPID): *Goals, Processes and Indicators of Development; Comments on Problematique of GPID* (1980)
- Courses and dialogue processes for change agents
- Web sites and compilations of proposals for systemic social change:

Curiously the current Global Challenges Prize is itself indicative of an important aspect of the problem it endeavours to address. Any web search (for "global challenges" or "global challenge") gives numerous results indicating the existence of a wide range of local, national and international initiatives with that preoccupation. These include, for example: [The Global Challenge](#) (universities), [Global Challenges](#) (Worldwide University Network), [Global Challenges Research Fund](#) (UK Research Councils). The very multiplicity of responses highlights the issue of assumptions regarding the possibility of a coherent global approach to global issues. Hence the title of this commentary.

The global challenge of providing a singular framework is further highlighted by the many hundreds of international [Catholic orders](#) and [religious institutes](#) variously beholden to the Catholic Church. Their number poses the question as to their lack of integration (despite the unquestionable coherence of their belief system) and to the nature of the distinctions between them. Such questions are relevant to the wider issue of the number and variety of responses to global challenges.

Given the current crisis of global decision-making, a key question is then: *so what?* How is any new proposal to engage with the evident lack of uptake of past proposals and insights? The possibility of factors remaining to be more effectively addressed is discussed separately (*Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity*, 2009).

Why is it that only new manifestations of crisis and inadequacy provide a focus for collective attention? Ironically the emergence of Donald Trump suggests that for many "not-Trump" is seen as framing a desirable strategy (as with "non-Jihadism") -- but unfortunately without any appropriately articulated content in either case, especially subsequent to success in the shorter term (*Eradication as the Strategic Final Solution of the 21st Century?* 2014).

The web site of the Global Challenges Prize offers some materials to guide reflection by participants in articulating their submissions. These notably focus specifically on the current hopes for internet-enabled governance. The challenges of the latter have already become evident in various arenas, despite the great enthusiasm of its advocates.

## Dimensions and processes to be encompassed self-reflexively?

This exercise is a further articulation of points previously made more extensively in response to the [Urgent Appeal to Change the Mindset](#), launched by the [Civil Society Reflection Group on Global Development Perspectives](#) and elaborated separately (*Embodiment of Change: Comprehension, Traction and Impact? Discovering enabling questions for the future*, 2011). The latter noted:

- [Identifying meta-challenges: checklists and documents](#)
  - Checklists variously framed, highlighting the nature of questions which are typically avoided in considering future possibilities
  - Denial and question avoidance, indicating various approaches to the nature of denial
  - Misplaced optimism regarding governance and systemic negligence in existing approaches
  - Neglected issues in dialogue, facilitation and game-playing as currently framed
  - Possibilities of anticipating and reframing disagreements that tend to undermine the coherence of global initiatives.
  - Neglected conventional cognitive traps undermining framing of strategies
  - Unexamined implications of the requisite complexity of "new thinking" in response to strategic obsolescence
  - Unquestioned assumptions regarding forms of presentation of conclusions
  - Humouristic and poetic summaries endeavouring to highlight the current tragedy by unconventional means
- [Case studies: sources of potential insights and learnings](#)

Dimensions meriting consideration as to how they are best to be integrated include the following -- recognizing the dynamics engendered by their possible exclusion:

- *Disagreement*: how indeed to engage with those who disagree with the process or any emergent recommendations for a new decision-making framework? How should their perspectives be designed in or designed out? Given the current outcomes of democratic elections and referenda, with the right to govern being determined by 52% vs 48% (irrespective of the percentage of abstentions), a fundamental issue is how is any proposal for a new framework to be deemed satisfactory and for whom. Despite the vain efforts of the majority to elicit "unity", how best to handle disappointment?
- *Adherence to pre-defined requirements?* how to elicit creativity and pattern-breaking within a framework which requires adherence to particular pre-defined criteria? The issue becomes evident with very occasional EU calls for "off the wall" research proposals which are then rejected by evaluators because their results cannot be proven in advance.
- *"Unsaid" and "Non-dit"*: how to take account of what is not frankly stated and is only subtly implicit, if not carefully designed out of consideration? This may apply both to the framing of the organization of the Global Challenge, the motivations of those

involved, the nature of acceptable deliverables, and the biases of those to whom they are addressed (*Global Strategic Implications of the "Unsaid": from myth-making towards a "wisdom society"*, 2003).

- **Blame-game:** The current crisis of governance is characterized to a large degree by various forms of blame-game. Each is able to indicate others who are (primarily) at fault in inhibiting more effective decision-making. How is this tendency to be taken into account in the case of any new framework -- whose promoters are liable to imply blame (if their views are not accepted) or be considered blameworthy by others resistant to any implementation of the new? (*Collective Mea Culpa? You Must be Joking ! Them is to blame, Not us !* 2015).
- **Stylistic antagonism and incompatibilities:** Any blame-game may well be a rationalization of antipathy to the style of the proposers (or the Global Challenge itself). The challenge of style extends to those whose dynamics need to be encompassed by the new framework and may be highly resistant to being "seated at the same table", especially on equal terms (*Epistemological Challenge of Cognitive Body Odour: exploring the underside of dialogue*, 2006)
- **Information overload and constrained span of attention:** The challenge of information overload is increasingly evident for all. It notably applies to the handling of any issues of governance in which key documents may well be thousands of pages in length. The issue extends even more dramatically to those with oversight responsibility -- potentially only manageable by neglecting the vital details in many documents. The issue is of course of relevance to the evaluation of submissions to the Global Challenge. It may be asked, hypothetically, how 100, 1000 or 10,000 submissions could be adequately processed -- if the process attracted an unexpected number of participants. (*Comprehension of Numbers Challenging Global Civilization: number games people play for survival*, 2014).
- **Integrative comprehension:** Irrespective of issues of information overload, there is clearly an issue of the comprehensibility of any adequate new framework -- where adequacy may require engagement with higher orders of complexity beyond habitual comfort zones. Depending on the style of presentation (text, visualization, oral, sonification, equations, etc) or any mix of styles, who is expected to be effectively engaged by what (lengthy) argument? Again this applies as much to the framework (as it is sought to implement it) as to the appreciation of submissions within the Global Challenges framework. Who can be expected to "see the forest for the trees", namely who is liable to be distracted by the "trees" or unduly enthused by the "forest". What forms of integration merit appreciation and to what extent may any one be meaningless to some? (*Living with Incomprehension and Uncertainty: re-cognizing the varieties of non-comprehension and misunderstanding*, 2012; *Global Brane Comprehension Enabling a Higher Dimensional Big Tent?* 2011)
- **Ignorance, credibility and communicability:** With the rise of populism, and the discrediting of past expertise (proven to be inadequate to the times), a major challenge is associated with those who variously fail to comprehend the insight embodied in any recommended new framework. The conventional response to this challenge -- evident in the strategies of religions, science, philosophy and ideologies -- has been to make use of increasingly sophisticated public relations techniques. Understood otherwise, the focus is on "marketing" the preferred perspective -- irrespective of indications of limited uptake. The abuse of this facility, remarkably evident in media engagement in the US presidential campaign, has resulted in its being extensively discredited. The process is increasingly indistinguishable from confidence trickery -- especially notable with respect to "fake news" and "post-truth" politics. (*Credibility Crunch engendered by Hope-mongering*, 2008).
- **Openness to the potential of missing dimensions:** The request for a new "framework" itself implies a tendency to closure and finality, cognitive or otherwise, when the challenge of openness merits particular attention -- especially to the emergence of future issues and creative perspectives. Combining the incommensurability of openness and closure calls for a design philosophy characterized by paradox. As a design metaphor, this is helpfully exemplified by the **ITER toroidal nuclear fusion reactor** currently under construction (*Enactivating a Cognitive Fusion Reactor: Imaginal Transformation of Energy Resourcing (ITER-8)*, 2006).
- **Avoidance of controversy and inconvenient questions:** To facilitate discourse in the moment, there is a marked tendency to avoid issues of significance to decision-making of relevance to governance in the longer-term. If recognized, their relevance may simply be denied with respect to challenges of the shorter-term. This tendency creates vulnerability to strategic surprises as argued by Nassim Nicholas Taleb (*The Black Swan: the impact of the highly improbable*, 2007).
- **Limiting focus on the singular solution:** As framed the Global Challenge process is designed to elicit a single framework in a period in which there are clearly preferences for contrasting frameworks. This is the challenge of the unitary versus the multiplicity -- with total system dominance versus some form of "multiverse" -- potentially exemplified by advocates of the singularity hypothesis. In agriculture this is evident in the challenge of monoculture to crop diversity. In society this is evident in pressures for conformity to a particular set of "universal" norms versus some form of multiculturalism. The question is how these incommensurable tendencies are to be resolved within a new pattern of global governance -- questionable framed as some form of magical "silver bullet" in response to a complex of "wicked problems" (*Embodying Strategic Self-reference in a World Futures Conference: transcending the wicked problem engendered by projecting negativity elsewhere*, 2015; *Strategic Ecosystem: beyond The Plan*, 1995).
- **Static focus versus Dynamic focus:** As with the emphasis on closure, aspiration to a new "framework" may also be challenged as implying advocacy of a new form of stasis or invariance -- when the requirement for some may be a new form of engagement with change. If astrophysics and relativity theory recognize the need for comprehension of frames of reference shifting in relation

to one another, the potential relevance to governance of some psychosocial equivalent clearly merits consideration. Curiously the issue applies to any implication that values are invariants best circumscribed and defined by nouns, when they may well need to be understood as verbs or even questions as to the nature of what is implied

- **Risk aversion:** The articulation of the Global Challenges Prize specifically calls for a framework around how "global risks can be minimized or eliminated". This is somewhat extraordinary in that the funding of the Prize derives from financial initiatives which have creatively embraced risk. The question may be addressed otherwise through recognition of the extent to which people seek exposure to risk and admire those who cultivate extreme risk. This contrasts with the assumption that people are in quest of a cocooned existence -- echoed in conservative tendencies to preserve the status quo. How is risk aversion to be mitigated in a society strangely dependent on change?

Any explicit consideration of these dimensions tends to obscure the need for their constraints to be ignored -- because their recognition may well inhibit and discourage creative thinking and innovation. Hence the enthusiasm for "starting afresh" and ignoring any lessons from failures of the past. Such consideration suggests the need for a "meta-perspective", especially in the light of the world leadership to be offered by the presidency of Donald Trump (*Requisite Meta-reflection on Engagement in Systemic Change? Fiat, fatwa and world-making in a period of existential radicalisation*, 2015). The latter frames the challenge in terms of:

Towards a more self-reflexive focus  
Agencies of systemic change  
Science and nescience  
Systemic neglect by science  
Mutual embedding of disparate cognitive modalities

Systemic change by authoritative fiat  
Fiat and world-making as an individual opportunity  
Self-reflexive discourse as catalyst for change  
Mnemonic catalysts enabling self-reflexive discourse  
Achieving traction through embodiment

## Interweaving disparate modalities

The following are modalities which respond in part to the above constraints:

- **Simulation:** Given the complexity of the situation, and the variety of proposals and preferences, there is a good case for making use of increasing simulation facilities to give a readily deliverable focus to the decision-making challenge. This might seek to encompass:
  - a multiplicity of problems
  - a multiplicity of proposed strategic responses
  - a wide variety of preferences and sensitivities in regard to both problems and strategies
  - a multiplicity of approaches to decision-making, and the quest for consensus, in a context in which a degree of variety may be healthy, if not essential and realistic
  - the challenge of comprehension of any such variety, especially with regard to perceived needs for oversight and surveillance -- notably taking into account the issues of information access, overload and constrained attention span
  - the probability of any initiative being a focus of disruption and hacking by parties who perceive themselves inadequately recognized by the simulation -- or motivated by the possibility of other benefits from it
  - the capacity to test unforeseen "surprises", including those triggered by disruptive hacking
  - the relevance to collective discourse and debate in engaging with such variety and deriving insight from any simulation -- potentially benefiting from the increasingly sophisticated analysis of team sports (notably passing patterns in ball games)

A focus on simulation could benefit from insights in [neural learning networks](#) and their use in the possible detection of previously unrecognized windows of opportunity. It could also benefit from simulations of democratic decision-making and voting systems. Indications include efforts to simulate world governance through analogues to the United Nations, as well as a variety of world decision-making games, whether in online video form as originally proposed by Buckminster Fuller (as noted below). Especially interesting would be insights emerging from new approaches to disagreement between incommensurable alternative perspectives. These might offer the possibility of designing viable (eco)systems which do not require universal agreement (*Coherent Patterns of Schism Formation, Bifurcation and Disagreement -- and the associated bonding, encounters and agreements they evoke*, 2001; *Beyond Method: engaging opposition in psycho-social organization*, 1981; *Using Disagreements for Superordinate Frame Configuration*, 1992)

It is of course the case that the processes, concerns and decision-making of any Global Challenge initiative lend themselves to such simulation -- especially as a means of anticipating large numbers of submissions and the challenge they represent to effective assessment. This would reflect, to some degree the challenge faced by international institutions, such as the European Commission, in calling for proposals and endeavouring to evaluate their significance for its pre-defined agenda. Simulating the existence of any such agenda could offer further insight into the constraints on the emergence of unforeseen innovations.

- **Elaborating a holding framework:** Whether as a feature of any simulation exercise, or as a resource which could enable simulation, there is a case for an information framework into which perceived problems, proposed strategies, and the like, could be "filed". In anticipation of any processing, whether foreseen or not, this would constitute a basic resource for decision-making.

It is of course the case that every international institution with a variety of preoccupations maintains such a data base, whether online, publicly accessible, or subject to major access constraints. A difficulty for collective decision-making is that there are major issues in reconciling the data so held -- as is only too evident in the challenges experienced by fragmented security and intelligence services.

Illustrative examples of holding frameworks are indicated above, notably the example offered by a *Global Solutions Wiki* (2009) and the *Encyclopedia of World Problems and Human Potential*.

- **Multimodal:** With a few notable exceptions, the tendency is to design information systems to focus on text and statistical data. Search engines such as Google offer an unprecedented level of world wide access to imagery. YouTube and the like offer access to video presentations. Both are seemingly disassociated from what is conventionally considered appropriate for decision-making - despite their widespread appeal.

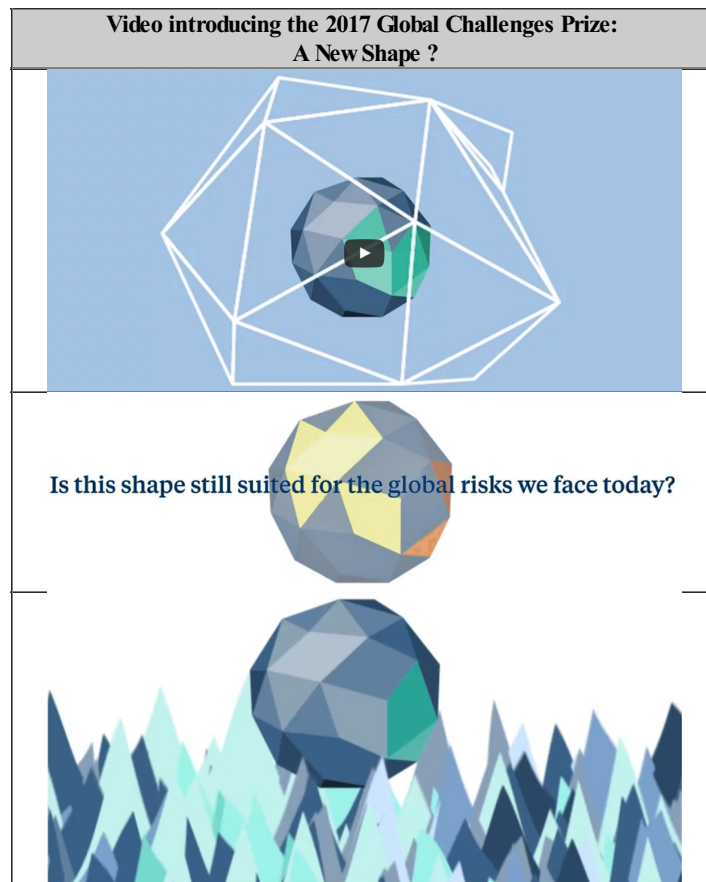
Given the contrasting preferences for information, a more systematic approach could be taken to enabling access to the following and the relationships between them of relevance to decision-making -- namely the "translation" between such modalities as:

- text, including conversion between long and short through **text mining** (*Convertor from Text to Poetry, Song or Music: computer-assisted aesthetic enhancement of treaties, declarations and agreements*, 2007)
  - **visualization** and mapping, notably in 3D and 4D as explored on this site (*Configuring Global Governance Groups: experimental visualization of possible integrative relationships*, 2008)
  - **sonification:** exemplified by the implications for strategy articulation (*A Singable Earth Charter, EU Constitution or Global Ethic?* 2006)
  - poetry, exemplified by epic poetry (*Poetry-making and Policy-making*, 1993; *Poetic Engagement with Afghanistan, Caucasus and Iran: an unexplored strategic opportunity?* 2009)
  - learning stories (*Educational fables for faith-based global governance*, 2006)
  - art forms, including painting, sculpture, dance (*Aesthetics of Governance in the Year 2490*, 1990)
  - symbolism, include mandalas and rosaries (*Concordian Mandala as a Symbolic Nexus: insights from dynamics of a pentagonal configuration of nonagons in 3D*, 2016; *Designing Cultural Rosaries and Meaning Malas to Sustain Associations within the Pattern that Connects*, 2000)
  - metaphors (*Through Metaphor to a Sustainable Ecology of Development Policies*, 1989)
  - **aphorisms**, as the most succinct form of governance-related wisdom (V.S.M. de Guinzbourg, *Wit and Wisdom of the United Nations*, 1961)
  - humour (*Humour and International Challenges: augmenting problem and strategy comprehension through psycho-cultural catalysts*, 1998)
  - mathematical representation
- **Participation:** There is of course a strong case for rendering any new approach appropriately participative, enabling those with information, suggestions, insights or feedback to "file" them accessibly. Relevant considerations include:
    - Enabling the challenge to be remade and reconfigured dynamically, according to particular preferences and biases:
      - effectively remaking the challenge in one's own image, possibly even playfully (*Possibilities for Massive Participative Interaction including voting, questions, metaphors, images, constructs, melodies, issues, symbols*, 2007)
      - encouraging experimentation with the deliverability of meaning (notably through symbolism, song, stories related to learning pathways)
    - Enabling explorations of the possibility of consensus and coherence -- as an evolving focus of research on unity and integration, under conditions of diversity and complexity
    - Offering the possibility for indications of
      - supportive agreement, and indication of complementary initiatives and concerns
      - disagreement and critical feedback, rendered explicit (through critical links between alternatives) rather than implicit
      - indifference and tokenism
      - questions challenging conventional framings, especially in anticipation of potential surprises
    - Enabling richer forms of discourse, possibly through elaboration of a relevant pattern language
  - **Enabling and embodying dynamic insight:** As may prove to be especially significant in the case of values (*Freedom, Democracy, Justice: Isolated Nouns or Interwoven Verbs? Illusory quest for qualities and principles dynamically disguised*, 2011).
  - **Excellence detection:** Enabling new approaches to recognition of creativity (and the controversy evoked) possibly in the light of the extensive experience with the dynamics and criteria of the competitions, or their simulation (as noted below)
  - **Emergency preparedness and speed of response:** as illustrated by the case of deep oil spill containment (*Enabling Collective Intelligence in Response to Emergencies*, 2010)
  - **Pattern fitting and relevance:** Enhancing recognition of relevance through pattern fitting (*In Quest of a Strategic Pattern Language: a new architecture of values*, 2008). This would encourage exploration of the extent to which "everything is relevant somehow", as a complement to the recognition "everything is connected" (cf *Six degrees of separation*). Of value is then the assumption that in some way, and to some degree, yet to be discovered, "everything is relevant"

The above possibilities are necessarily a reflection of the biases of the author of this document. Many aspects reflect the motivation for originally instigating the *Encyclopedia of World Problems and Human Potential*, now **online** with its participatory and visualization possibilities. This was approved for funding by the European Commission and the World Bank (see respectively *Ecolynx: Information*

## Polyhedral transformation in support of global decision-making

**New shape?** The Global Challenge web site is remarkably characterized by a somewhat unusual video of a polyhedron variously transformed dynamically. It explicitly calls into question the relevance of one such polyhedron as symbolic of an (in)adequate mode of organization.



**Variable geometry?** The video is consistent with occasional references to the possibility of "variable geometry" for international institutions. This has been most notably considered with respect to governance of Europe (Carla Cattaneo and Dario Velo, *Variable Geometry Europe: an interpretation of the European integration development*, *Archive of European Integration*, 1995; Charles Grant, *Variable Geometry*, *Centre for European Reform*, 1 July 2005; Patrick Joachim Dunphy, *Variable Geometry Europe*, *Institute for Trade and Commercial Law*, February 2007; Paola Subacchi, *The Variable Geometry of National Sovereignty*, *EUObserver*, 18 December 2013; *Brexit Brief: the charms of variable geometry*, *The Economist*, 11 June 2016).

The approach has also been envisaged for the UN system (*Alternation between Variable Geometries: a brokership style for the United Nations as a guarantee of its requisite variety*, 1985) and within the UN system. As reviewed by C. Patel (*Single Undertaking: a straitjacket or variable geometry?* 2003) and discussed with respect to aspects of the United Nations system by Andrew Cornford (*Variable Geometry for the WTO: concept and precedents*, 2004).

A more general approach to the possibility was discussed with respect to *Possibilities of "variable geometry" in psycho-social organization* within the context of a possible *Polyhedral Pattern Language* (2008). This considered issues of software facilitation of emergence, representation and transformation of psycho-social organization.

**Unexplored polyhedral possibilities:** As noted there, use of such a polyhedral form as a new mode of organization originated with the work of **Buckminster Fuller**. His extensive analysis of such geometry was framed as offering a new mode of thinking (*Synergetics: Explorations in the Geometry of Thinking* (1975, 1979). He gave concrete form to his reflection in the design of **geodesic domes**. It was also adapted to the innovative design of a global map -- the **Dymaxion Map**. This figured notably in his consideration of global decision-making as developed by the **World Game**, sometimes called the World Peace Game.

There has been relatively little uptake of his non-architectural insights, as argued separately in a submission (by the author of this commentary) to **The Buckminster Fuller Challenge 2010**, organized by **The Buckminster Fuller Institute** (*Geometry of Thinking for Sustainable Global Governance: cognitive implication of synergetics*, 2009). This pointed to the possibility of deriving an array of insights from the dynamic reconfiguration of polyhedra -- as is implicit to a degree in the Global Challenges video. As with the current Global Challenges Prize, that earlier challenge was conceived in support of the development and implementation of a strategy that has significant potential to solve humanity's most pressing problems.

The question, as yet inadequately explored, is whether polyhedral forms can be used as mapping devices to enable discovery of new forms of decision-making -- suitably interrelating a diversity of perspectives, issues and actors. Some possibilities have been presented,

with illustrations and animations, in:

- *Towards Polyhedral Global Governance: complexifying oversimplistic strategic metaphors* (2008)
- *Polyhedral Empowerment of Networks through Symmetry: psycho-social implications for organization and global governance* (2008)
- *Configuring Global Governance Groups: experimental visualization of possible integrative relationships* (2008)
- *Configuring Global Governance Groups: experimental animations and video sequences* (2008)
- *Psychosocial Implication in Polyhedral Animations in 3D: patterns of change suggested by nesting, packing, and transforming symmetrical polyhedra* (2015)

Of particular interest is the remarkable range of polyhedra and the variety of transformations between them -- as indicative of a highly desirable flexibility in imaginatively interrelating a diversity of perspectives. This possibility has been rendered highly accessible through the *Stella Polyhedron Navigator* (developed by Robert Webb) and the manner in which 3D imagery and videos can be generated from it -- in anticipation of the expected breakthrough into **virtual reality** anticipated in 2017.

As one illustration, use was made of this approach to suggest the dynamics between participants and issues at a conference of the International Peace Research Association (*Polyhedral Conference Representation as a Catalyst for Innovation: polyhedral animation of IPRA*, 2008). Clearly the relation between the different actors, perspectives and proposals in any Global Challenge could be similarly configured -- suggesting a multiplicity of related possibilities.

Of particular relevance to decision-making framed by the Global Challenges Prize, is the adaptation of aspects of Buckminster Fuller's insights through the work of management cybernetician **Stafford Beer** (*Beyond Dispute: The Invention of Team Syntegrity*, 1994).

**Beyond "one plan" thinking:** Given the multiplicity of proposals "on the table" (or "designed off it"), maybe "table" is indeed the wrong metaphor. Such an argument could be used to call into question the widespread tendency to focus on a "global plan". Such a 2D metaphor may be similarly inappropriate, as argued with respect to papal framings (*Adhering to God's Plan in a Global Society: serious problems framed by the Pope from a transfinite perspective*, 2014).

It is indeed possible that "one plan" thinking may be as inappropriate to the challenge of a complex society as some of the more simplistic understandings of the globe, the solar system and the universe (*Irresponsible Dependence on a Flat Earth Mentality -- in response to global governance challenges*, 2008). The challenge of the times may be explored otherwise through metaphor, notably the remarkably degree to which international institutions of governance house themselves in rectangular and cubic structures as a context for their deliberations -- consistent with the convenience of spreadsheet organization of their strategic "planning". It might even be said that, metaphorically speaking, the architecture of the UN Secretariat in New York is a 3D spreadsheet.

**Spherical implications of global strategies?** Little thought is given to the possible relevance of the spherical, with its cognitive implications for engaging with the global -- as speculatively argued separately (*Spherical Accounting: using geometry to embody developmental integrity*, 2004). Curiously curves are typically only evident in the design of plenary conference rooms -- but only to a degree. A striking exception is seemingly offered by the recently opened spherical building -- colloquially named the Space Egg, designed to be the HQ of the Council of the EU and the European Council (*Meet the "Space Egg", the EU's €321 million headquarters*, *Euronews*, 8 December 2016).

A key question, ignored in the announcement of the Space Egg, is the nature of the strategic and cognitive implications of this "new shape". Should it be recognized as a new "echo chamber" for groupthink -- a challenging metaphor used by a reviewer in *The Economist*:

The Western intelligentsia, snug in its echo-chamber, has done a dismal job of understanding what is going on, either dismissing populists as cranks or demonising them as racists. (*A perfectly timed book on populism*, 3 December 2016)

With the **unforeseen** rise of a deprecated populism protesting at being "**unheard**", it is **unlikely** that the "shape" of the new debating chamber will be characterized by a higher order of "acoustics" -- in the sense required.

Spherically symmetrical polyhedra offer one comprise to a "new shape", as explored in the documents cited above, especially with respect to the transformations possible between them (*Changing Patterns using Transformation Pathways*, 2015). These are important to any process of transformation from an "old shape" to a "new shape". Curvature and its symbolic implications can be more extensively explored through spirals.

**Toroidal requirement for a "global" strategy?** As exemplified by the **Nautilus Institute for Peace and Security**, spirals reinforce a non-linear understanding of complex development (*Visualization in 3D of Dynamics of Toroidal Helical Coils: in quest of optimum designs for a Concordian Mandala*, 2016). To the extent that any "new shape" should be other than "heartless", the latter includes its implications in 3D (*Cognitive heart dynamics framed by two tori in 3D*).

It could be considered curious that the "New Shape" for the EU is "egg shaped" (another approximation to a **sphere**), when the EU countries are primary supporters of the ITER reactor (requiring a **torus** design) from which fusion energy is expected in response to the **global** energy challenge of the future. Is it not faintly possible, as suggested above, that any "new shape" should take account of the design implications of a torus (rather than a sphere) in order to be of relevance to the psychosocial systemic challenges of a global society? Has the EU engendered a shape of relevance to yesterday's strategic insights?

**Dynamic rather than static shape?** There is a strong case for recognizing that the quest for a "new shape" may require recognition of the "shape of a dynamic", rather than a shape in static geometric terms. Any transformation may need to be understood as being to a dynamic rather than to another static shape, as indicated elsewhere (*Dynamic Transformation of Static Reporting of Global Processes: suggestions for process-oriented titles of global issue reports*, 2013; *From Statics to Dynamics in Sustainable Community*, 1998).

Is it possible that the long-standing unresolved issues of the Middle East, centered on the Israel-Palestine situation, require resolution in dynamic rather than static terms, as argued separately (*Middle East Peace Potential through Dynamics in Spherical Geometry: engendering connectivity from incommensurable 5-fold and 6-fold conceptual frameworks*, 2012). Tragically, as currently exemplified by the vision offered by the outgoing US Secretary of State, John Kerry, this is framed as a two-state solution (*Remarks on Middle East Peace*, 28 December 2016). This vision was immediately criticized by the Prime Minister of Israel, Benjamin Netanyahu, as a failure to recognize the absolute historical necessity of a one-state solution (*Israel-Palestinians: Netanyahu condemns John Kerry speech*, *BBC News*, 29 December 2016).

Despite the unquestionable mathematical sophistication of both cultures, there is seemingly no motivation whatsoever to explore non-binary possibilities -- beyond the cognitive limitations of binary and unitary "shapes", as argued separately (*And When the Bombing Stops? Territorial conflict as a challenge to mathematicians*, 2000). Despite initiatives via the United Nations over decades, further constraints on engendering a new shape are evident with the assertion by the US President-elect that the UN was itself only a "club" -- a situation he intends to change in ways likely to prove problematic ("*Just a club for people to get together*": *Trump slams UN after Israel vote*, *RT*, 27 December 2016). There is a degree of irony to reference to "club" given its Stone Age connotation -- potentially of some relevance to other "clubs" claiming a strategic focus.

Such dysfunctional oversimplification is in ironic contrast to the widespread familiarity in practice with alternation of "possession" as in [timeshare housing](#) and [car sharing](#), and in the more complex forms of [time-sharing of computer resources](#) (through [multiprogramming](#) and [multi-tasking](#)). It is especially ironic that the familiarity is evident in cultures practicing [polygamy](#) and [polyandry](#) -- and in forms of [shared parenting](#) of children, notably following divorce.

## Configurative mapping of Global Challenges Prize submissions

If the response to the Global Challenge Prize is as successful as hoped, many creative proposals will be elaborated. Unfortunately, "many will be called, but few will be chosen". The pattern is familiar with many other calls for proposals. It is also evident in the multiplicity of reports variously produced under the aegis of international bodies -- especially including the United Nations and its agencies. A particularly interesting example is provided by the set of reports engendered by the Club of Rome over decades (*Club of Rome Reports and Bifurcations: a 40-year overview*, 2012).

The key question is why the content of such reports is not integrated into an appropriate data set enabling the relationships among its insights to be mapped as a framework for integrative overview -- rather than decaying into "lost knowledge" as at present. The appropriate text analysis and mapping software has existed for a number of years, exemplified by the [Leximancer](#) application -- under the slogan: *text in, insight out*. One indication of possibilities is offered separately (*Complementary Knowledge Analysis / Mapping Process*, 2006). The argument also applies to serial (or parallel) presentations in a conference environment (*Concept Analysis of Climate Change Agreements*, 2009). One aspect of the concern is a focus of the [Global Sensemaking](#) network.

Reasons for avoiding such possibilities seem to include:

- concerns about intellectual copyright and the tedious nature of negotiations with copyright holders -- an issue creatively overcome by Google Books
- achieving access to electronic versions of the texts -- primarily the costs of scanning hardcopy versions (increasingly a trivial matter, given the scanning technology and the number of pages of concern)
- perceived lack of relevance of disparate insights to currently fashionable preoccupations -- especially when alternative insights are critical of one another
- overriding commitment to the identity of the instigating body (and its legacy) -- perceived as undermined by any indication of the relevance of similar or complementary initiatives (and especially where these are implicitly critical of those promoted)
- reluctance to be exposed to any mapping of past inanities because it would imply the need for due diligence in exploring the "ecosystem" of extant strategic proposals before formulating a new one
- basic lack of interest in any more integrative perspective and its systemic implications -- especially those enabled by the potential of other representational modalities (visualization, sonification, mapping, etc)

It is extraordinary to note that those producing bound compilations of integrative insights and remedial proposals see no need to interrelate more fruitfully what is assembled in this way -- nor are their contributors especially motivated to articulate any emergent perspective. The pattern is reinforced by the constraints of conventional journal publishing with its focus on text and avoidance of colour. The resulting "synthesis" can be described by the ironical German term: *Buchbindersynthese*.

Despite a most insightful editorial, a recent example is provided by the remarkable compilation for the [Spanda Foundation](#) by [Helene Finidori](#) (*Systemic Change*, *Spanda Journal*, 6, 2015). Appropriate to this argument, the same could be said of an earlier compilation, edited by the founder of the Spanda Foundation, [Sahlan Momo](#) (*Collective Intelligence*, *Spanda Journal*, 2, 2014). Contrary to most journals, however, Spanda offers a multiplicity of colourful aesthetic images -- but only of allusively symbolic relevance to the text, in contrast to any requirement for systemic insights. One can but fantasize about the insights to be drawn from a collective mapping of the texts assembled in the many special issues of that journal, and in others of relevance to this theme.

The fundamental commitment would seem to be a belief in the emergence of a singular, readily comprehensible, remedy to a complex crisis of civilization -- accompanied by assumptions about how widely acceptable it can be made to be. This of course ignores the warning of Mencken cited above: *For every complex problem there is an answer that is clear, simple, and wrong*.

## Engendering shape under threat of global catastrophe




**Container for multiple shapes:** Given the dynamic nature of the strategic response appropriate to any "crisis of crises", there is a

strong case for recognizing that it is not one particular shape that is required. It is a question of strategic nimbleness calling for a variety of shapes. The issue is then the nature of the "container" for a variety of shapes. From a security perspective, there is however some irony to the fact that SHAPE, as the [Supreme Headquarters Allied Powers Europe](#), is the central command of NATO military forces.

A more general understanding of container has resulted from work on the container metaphor by cognitive psychology ([George Lakoff](#) and Mark Johnson, *Metaphors We Live By*, 1980). One practical implication has been further developed by Alexander Klose (*The Container Principle: how a box changes the way we think*, 2015). The above-mentioned approach to polyhedra by Buckminster Fuller (*Synergetics: Explorations in the Geometry of Thinking*, 1975/1979), and the management cybernetic implications explored by Stafford Beer (*Beyond Dispute: The Invention of Team Syntegrity*, 1994), can also be recognized as offering new insight into containers.

Cognitive role of containers is further discussed separately (*Cognitive significance of a container*, 2016; *Containing embodiment dynamically: conceptual boxes versus cognitive waves?* 2016).

**Clues from biomimicry:** One approach to the thinking required for a variety of shapes is through biomimicry, specifically the life cycle of a butterfly -- fruitfully consistent with the naming of the new EU debating chamber as a "Space Egg". The life cycle insight was explored in a separate discussion (*Animating the Representation of Europe: visualizing the coherence of international institutions using dynamic animal-like structures*, 2004). This noted the argument of [John Elkington](#) (*The Chrysalis Economy*, 2001) regarding the necessary institutional metamorphosis for the 21st century from the insect chrysalis. For Elkington, the transformation is not achieved without radical shifts in the nature of the animal that involves "self-digestion" before metamorphosis is possible. He uses insights from this metaphor to illuminate many aspects of corporate transformation.

Caterpillar to Butterfly Transformation -- a Renaissance		
Caterpillar	Pupa/Chrysalis	Butterfly
		


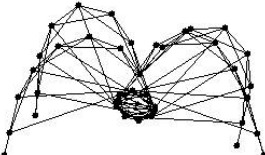
For [Edgar Morin](#) (*Vers l'abîme*, *Le Monde*, 1er janvier 2003):

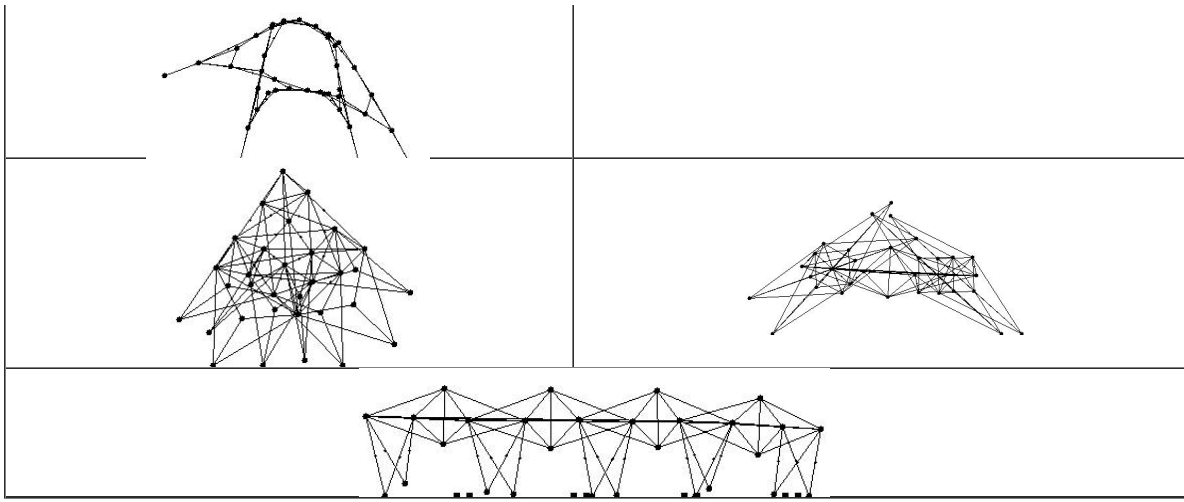
La métamorphose de la chenille en papillon nous offre une métaphore intéressante : quand la chenille est entrée dans le cocon, elle opère l'autodestruction de son organisme de chenille, et ce processus est en même temps celui de formation de l'organisme de papillon, lequel sera à la fois le même et autre que la chenille. Cela est la métamorphose. La métamorphose du papillon est préorganisée. La métamorphose des sociétés humaines en une société monde est aléatoire, incertaine, et elle est soumise aux dangers mortels qui lui sont pourtant nécessaires. Aussi l'humanité risque-t-elle de chavirer au moment d'accoucher de son avenir.

It is tempting to recognize the segmentation of the caterpillar as indicative of the partial (simpler) coordination that often prevails between divisions of a complex institution -- quite different from the degree of coordination required by a butterfly. In this sense the pupal phase might be understood as that in which the static pillar-based value organization is transformed through a "renaissance" into the radial organization typical of a rotating wheel.

**Modelling structural dynamics:** By modelling existing "cumbersome" structures and exploring their possible transformation, imaginative approaches (anchored in practical budget-line options), could be explored to ensure that an institutional system is transformed from cumbersome to elegant (from "Beast" to "Beauty"). It is such structures which would be expected to "fly" (as with a butterfly) -- to employ a common metaphor for a successful project -- in contrast to one that does not "get off the ground" (as when a project described as a "turkey" is contrasted pejoratively with one described as an "eagle").

There is a unique opportunity to render such institutional structures more meaningful and appealing by using dynamic representation techniques that have the recognized communication strengths of animation. The success of [Soda Constructor](#) in attracting millions of users at all levels of society is an indication of the creative potential of such tools. The earlier discussion developed this possibility in relation to a *Proposal for dynamic representation of institutional budget lines* (2004).

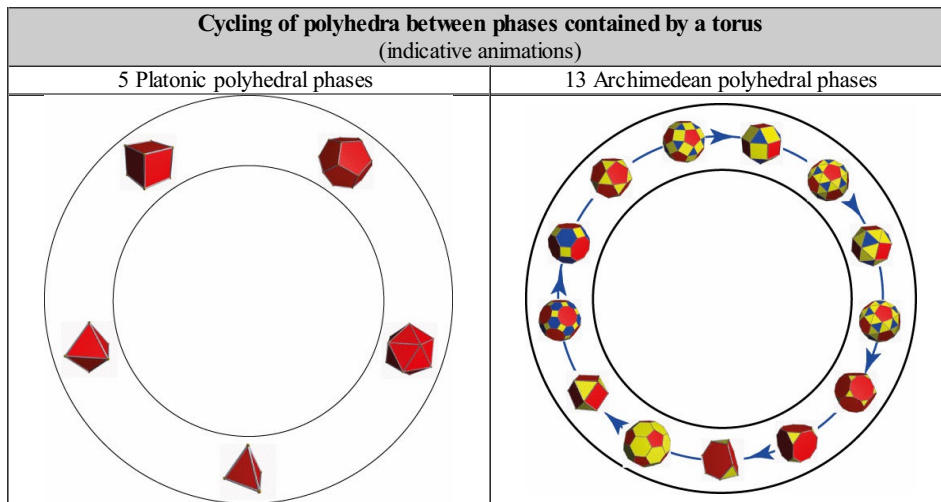
Examples of multi-legged animated Soda Constructor models (click on image for dynamic form; <a href="#">site currently disabled</a> )	
	



## Cyclic dynamic of emergent order versus States of emergency ordered spasmodically

**Cycles of inter-transforming polyhedra?** Following Stafford Beer, an interesting assumption with respect to polyhedra could be that the edges are indicative of transactions, lines of communication, or systemic conceptual relationships. Rather than assuming an institutional need to move from a primitive early stage (egg or chrysalis) to a final desirable later stage (butterfly), each stage may be valued for its particular strategic advantages in a continuing cycle.

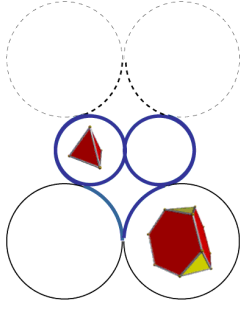
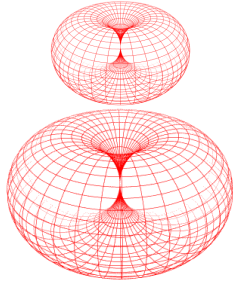
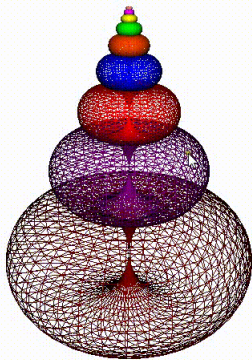
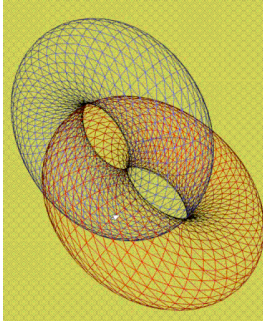
The question is then how to understand the phase transitions between the stages -- as helpfully rendered comprehensible in the case of sets of polyhedral shapes. The cycle of shapes may then be understood in terms of a dynamic toroidal container for the succession of phases. The number of such phases to be distinguished is a matter for future exploration. In the examples below the focus is on the "regular" [Platonic polyhedra](#) and the "semi-regular" [Archimedean polyhedra](#) -- each constituting a particular approximation to spherical, understood as "global".



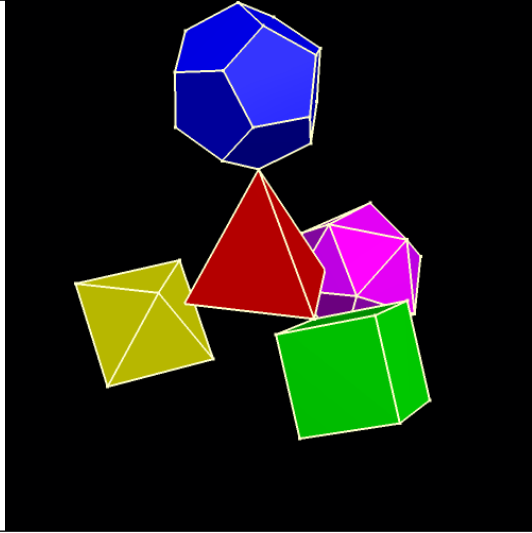
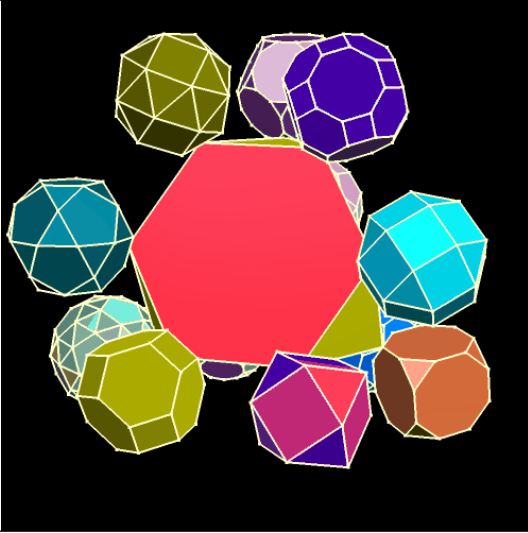
**Dynamic juxtaposition of tori:** The argument may be taken further by interrelating the separate cycles above, each contained there within a separate torus. In the animation below (far left), the 5-fold cycle is positioned within a smaller torus above a larger torus holding the 13-fold pattern -- viewed in cross-section showing the different polyhedral forms emerging periodically. Some provisional degree of complementarity between the dynamics of the Platonic and Archimedean variants derives from a table by Keith Critchlow (*Order in Space*, 1969).

The juxtaposition of the tori frames a 3D heart pattern variously evident in the two central animations, as discussed separately (*Cognitive heart dynamics framed by two tori in 3D*). The animation on the far right presents the two tori in an interlocking dynamic, also discussed separately (*Comprehension of Requisite Variety for Sustainable Psychosocial Dynamics: transforming a matrix classification onto intertwined tori*, 2006).

Animations indicative of possibilities of packing global complexity comprehensibly			
Superposition of 2 tori with circulating polyhedra (outlining a 3D heart pattern)	Possible complex dynamics between superpositioned tori	Possible multi-level "stacking" of counter-rotating tori (multiple 3D heart patterns)	Alternative interlocking dynamics of two tori

			
<p>Combination of separate animations above (viewed in cross-section)</p>	<p>Adaptation, with permission, of animation by <a href="#">Wolfgang Daeumler</a> (<i>Horn Torus</i>)</p>	<p>Adaptation of <a href="#">X3D</a> and <a href="#">VRML</a> models (kindly prepared by Sergey Bederov of Cortona3D)</p>	<p><a href="#">X3D</a> and <a href="#">VRML</a> models (kindly developed by Sergey Bederov of Cortona3D).</p>

As indicated below, further possibilities of this nature are considered separately (*Psychosocial Implication in Polyhedral Animations in 3D: patterns of change suggested by nesting, packing, and transforming symmetrical polyhedra*, 2015; *Memetic Analogue to the 20 Amino Acids as vital to Psychosocial Life?* 2015).

<b>Configuration in three dimensions of Platonic and Archimedean polyhedra</b> (indicative animations)	
4 Platonic polyhedra configured around tetrahedron	12 Archimedean polyhedra configured around truncated tetrahedron
	
<p>Animations prepared using <a href="#">Stella Polyhedron Navigator</a></p>	

**Periodic emergence versus Periodic emergency:** Understood otherwise, in dynamic terms, the animations above suggestive ways of thinking about **contrasting shapes and modes of organization emerging periodically** from a more fundamental pattern. The "new shape" is then to be found in the periodic pattern rather than in any particular shape emerging for a period over time. Such potential emergence recalls the argument for a potential configuration (*Wanted: New Types of Social Entity: the role of the "potential association"*, 1971).

There is a curious relation to be explored between an "emergency" and the process of emergent response, most notably through "emergency plans" elaborated in terms of "emergency preparedness" in an effort to anticipate surprises calling for **emergency management**. **In a period of unrelenting crises**, the argument here effectively focuses on the capacity to respond to the challenges of governance through emergent reordering of structures and communication channels -- readily enabled (in principle) by information systems.

Rather than the focus on spasmodically ordering a **state of emergency**, the focus is then on the cyclic pattern within which order emerges as appropriate. The question is the number and variety of the plans considered appropriate to an emergency, and the conditions under which they are variously activated and deactivated. Of particular interest in a period of continuing crisis is the duration of any state of emergency, as well as the number and variety of such states that have been declared.

The current situation is further complicated by recognition of a degree of "threat level" requiring a "readiness condition" which may endure for some time -- if not permanently. For example, five graduated levels of readiness (or states of alert) are specified for the U.S. military within the **DEFCON system**: from 5 (least severe) to 1 (most severe). Similar systems exist in other countries. Curiously their determination is primarily influence by the immediacy of the threat rather than any catastrophic eventuality in the longer term. In this sense the eventual disaster of climate change or resource exhaustion are treated as comparable to detection of an asteroid calculated to strike the planet decades in the future. These do not register as "threats" calling for emergency response.

**Morphogenesis:** The toroidal animation of forms presented above is consistent with the depiction (below left) of the distinction of only four phases of emergency management. This can be usefully contrasted with familiar understanding of the life cycle of a "butterfly" and

its implications for the complex subtlety of psychosocial **morphogenesis** (*Enabling morphogenesis and transformation through catastrophic questioning*, 2013; René Thom, *Structural Stability and Morphogenesis*, 1972).

Contrasting understandings of "emergency" and "emergent"	
Cycle of phases in emergency management	What is the "shape" of a "butterfly"?
Reproduced from <i>Wikipedia</i>	Cyclic combination of images above

Given increasing recognition of the insights from **biomimetics**, what might be learned from a butterfly about the governance of morphogenesis?

Could this be fruitfully informed by reflection on the famous Chinese tale of the **butterfly dream of Chuang Tzu** -- wondering if he was a man who dreamed of being a butterfly or a butterfly dreaming of being a man? Many dramas highlighting the theme of transformation have been written about the tale (Kuang-Ming Wu, *The Butterfly as Companion: meditations on the first three chapters of the Chuang Tzu*, SUNY, 1990).

With respect to governance of morphogenesis, an appropriate contrast can be made with respect to many transformations in geometry (as an "explicate order") -- possibly to be recognized as "tinkering" -- and the dynamic of underlying **holomovement** characteristic of an "implicate order", as articulated by **David Bohm** (*Wholeness and the Implicate Order*, 1980; *Explicate and implicate order*). As noted in the former (p. 202):

In the interests of clarity, we shall therefore reserve the word *transformation* to describe a simple geometric change within a given explicate order. What happens in the broader context of implicate order we shall then call a *metamorphosis*. This word indicates that the change is much more radical than the change of position or orientation of a rigid body, and that it is in certain ways more like the changes from caterpillar to butterfly (in which everything alters in a thorough going manner while some subtle and highly implicit features remain invariant).

**Nesting alternative shapes approximating to "global"**: Rather than understanding alternative shapes to be cycling "through" a torus, or configured "around" a "seminal" or "foundational" shape (as above), they can be understood as nested in relation to one another -- as with the potential forms of a "butterfly" in process of **metamorphosis**. As an animation in virtual reality, that on the left (below) offers a suggestive "pumping" dynamic, usefully compared with the original inspiration of Johannes Kepler on the right. The latter is perhaps to be more fruitfully understood as a "global" understanding of the solar system..

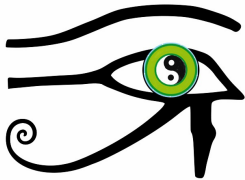

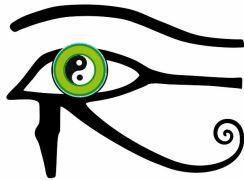
Nesting 5 Platonic polyhedra octahedron, icosahedron, dodecahedron, tetrahedron, cube (Version as <a href="#">video animation</a> of "pumping" action (.mov); access to <a href="#">X3D variant</a> )	
<b>Rhombic Triacontahedron (green) as a nesting framework</b> (virtual reality variants <i>static</i> : <a href="#">vrml</a> or <a href="#">x3d</a> ; <i>mutual rotation</i> : <a href="#">vrml</a> or <a href="#">x3d</a> ; "pumping": <a href="#">vrml</a> or <a href="#">x3d</a> ; videos: "pumping" <a href="#">mp4</a> ; "rotation" <a href="#">mp4</a> )	Polyhedral model of solar system of Johannes Kepler in <i>Mysterium Cosmographicum</i> (1596)

The animation on the left is discussed separately in more detail ([Nesting polyhedra to enable comparison of patterns of discourse](#), 2015; [Relative movement of nested Platonic polyhedra: pumping and rotation](#), 2015). The latter introduces more **complex animations** of significance to global comprehension ([Rotation and pumping of nested Chinese "puzzle balls" as symbolizing "worlds-within-worlds"](#), 2015)

**Cognitive embodiment of globality?** The "pumping" dynamic in the nesting animation on the left (above) suggests an understanding of the emergence of different patterns of order -- their "explication" or unfolding -- from an inner implicate order. This process can be related to understandings of the embodiment of mind, as articulated by George Lakoff and Mark Johnson (*Philosophy In The Flesh: the embodied mind and its challenge to Western thought*, 1999), and other authors, as discussed separately ([Embodiment of Change: Comprehension, Traction and Impact?](#) 2011; [Inplation: multiversal embodiment through the Ouroboros](#), 2012; [Embodying topological succinctness beyond questions](#), 2014; [¿ Embodying a Way Round Pointlessness ?](#) 2012).

As with the insights into transformation derived from the butterfly dream of Chuang Tzu, both the nesting and the pumping dynamic are indicative of understandings of globality as both "outside" (namely explicate) and "inside" (namely implicate) -- a paradox fundamental to its comprehension ([World Introversion through Paracycling: global potential for living sustainably "outside-inside"](#), 2013). As a 4-dimensional process (at least), the 3D depictions in terms of a torus, and the nested variant, are better recognized as cognitively conflated.

The challenge of comprehension can be explored in relation to the "doughnut" of Oxfam ([Exploring the Hidden Mysteries of Oxfam's Doughnut: recognizing the systemic negligence of an Earth Summit](#), 2012). The following animation of Hathor in the Egyptian then offers a provocative representation of the requisite cognitive dynamic. This suggests a strategic "third eye" of sustainability through a mythological complement to the [Eye of Horus](#) in that tradition, especially in the light of its symbolic importance in that era ([Recognition of the Oxfam doughnut as a strategic "eye" for the "vision" of governance](#), 2012). The Oxfam doughnut has been incorporated there into a cycle, previously presented and discussed in simpler form ([Embodiment of Identity in Conscious Creativity: challenge of encompassing "con"](#), 2011). The subtitle of that document emphasizes the necessary cognitive vigilance to transcend the confidence games so typical of conventional approaches to strategic governance.

In quest of mnemonic catalysts using animations		
Eye of Horus as suggestive of left-wing strategic oversight?	Hathor as suggestive of transcendent insight?	Eye of Horus as suggestive of right-wing strategic oversight?
		

**Antifragility and Resilience?** It is of course the case that there is a basic strategic preference for a particular shape as framework for regular (habitual) processes. It is this preference that is being called into question by the current period and its "surprises", as noted above in the description by Nassim Nicholas Taleb (*The Black Swan: the impact of the highly improbable*, 2007).

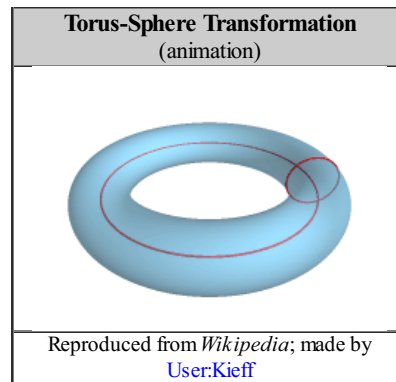
Of further relevance however is the sense in which a cycle of phase transitions may be understood as a shift from one mode of order to another -- and as such may be understood as "disorderly", or dependent on a disorderly transition. It is in this sense that "antifragility" of any particular shape is relevant, as recognized in the subsequent argument of Nassim Nicholas Taleb (*Antifragile: Things That Gain from Disorder*, 2012).

As suggested by the animations above, order is to be found at a higher level -- through the cycle framed by the implied torus -- rather than with respect to the requisite instability of the order of any particular phase. The principle of cybernetics relating to requisite variety of particular forms could merit generalization to include recognition of their requisite instability in dynamic systems terms.

This understanding is consistent with arguments for [resilience](#) and the [adaptive cycle](#) (Thomas Homer-Dixon, *The Upside of Down: catastrophe, creativity, and the renewal of civilization*, 2006; Judith Rodin, *The Resilience Dividend: managing disruption, avoiding disaster, and growing stronger in an unpredictable world*, 2015).

**Designing "on the fly":** A further consideration lies in recognition that in time of crisis a singular shape cannot be fruitfully designed in abstraction. In a sense it is partly engendered by the dynamics of the crisis and the responses to it. Mixing metaphors, the challenge is to enable the new by designing "on the fly". A remarkable example of this is provided by the science fiction account of engendering a space-time ship whose stability required that it be piloted during the process, with the aid of advanced game-playing techniques (M. A. Foster, *The Gameplayers of Zan*, 1977).

**Global challenge of dynamics toroidally framed:** The interaction between global and toroidal forms is remarkably illustrated by the following animation. An innovative response to the "global" challenge can then be seen as severely inhibited by preoccupation with a particular spherical phase in that cycle -- typically understood in static terms.



## Engaging with any Global Challenge

A major difficulty for the selection process is that everyone who has thought about the matter has insights on how to "fix the world". All claim that they are not appropriately heard and that their proposals are blocked in a variety of ways -- a systemic condition worth studying in its own right. More provocative is the paradoxical sense in which all problems would supposedly be resolved if everyone were to accept the value of everyone else's proposal. Really?

As implied by the above-mentioned reluctance to assess the many efforts to articulate and respond to global challenges, this factor merits being borne in mind with respect to the Global Challenges Prize in quest of "A New Shape". But who would bother to do so, and why? For many the focus could simply be on producing a credible response for those selecting the prize winner.

Focus was given to the climate change issue through the documentary film by Al Gore titled *An Inconvenient Truth* (2006). The more fundamental question with respect to the global challenge (of the global challenge) is whether there are other inconvenient truths to which collective groupthink avoids according attention, as argued separately (*An Inconvenient Truth -- about any inconvenient truth*, 2008; *Possibility of other shocking challenges to groupthink?* 2016).

Cynicism aside, there are additional learnings from the manner in which winners of any "design" competition are selected, as illustrated by the dynamics associated with:

- Nobel Prize Awards, and especially the controversy associated with the Nobel Peace Prize process
- the many international architectural design competitions (see *Wikipedia List of architectural design competitions*) -- especially in the light of the undeclared agendas and constraints of the organizers
- the many landscape design competitions (see *Wikipedia Landscape architecture design competitions*)
- the many literary awards (see *Wikipedia: List of literary awards*; *List of poetry awards* and data base on *Book Prizes and Literary Awards*)
- the many music, song and film awards
- the responses to the many "calls for proposals" from international institutions, most notably the European Commission (*Calls for Proposals and Tenders*)

Some of these could be understood as a quest for a "new shape" -- understood as a new look, a new sound, or a new trend, replacing those of the past perceived as "outmoded". Entrants are encouraged to focus on: **designing a decision-making structure or framework that could galvanize effective international action to tackle these risks.** The proposed model may encompass an entirely new global framework or a proposed reform for existing systems

With respect to the Global Challenges Prize 2017, such considerations give focus to questions such as:

- the manner in which submissions will be assessed by the Board and by a panel -- especially in the light of the composition of either or both as gatekeepers of creativity and innovation. In other contexts such concerns focus on issues of representativity by expertise, culture, ethnicity, gender, age, and the like. Given the composition of the Board, a particular concern would be the question of gender, as separately argued (*Women and the Underside of Meetings: symptoms of denial in considering strategic options*, 2009).
- resolution of disagreement amongst assessors, notably as it constitutes a metaphor of the appreciation subsequently accorded to the selected "New Shape"
- why the assembled expertise represented by the assessors has as yet been unable to engender a decision-making framework without the recourse to outsiders (as implied by the Prize process). Is this suggestive of a form of tokenism, the preferred framework having been decided in advance by the selection of assessors?
- whether those assembled would be able to recognize viable proposals of sufficient promise given their collective biases, inhibitions and ideological disagreements? Will what passes such gatekeepers be distinguished by what is described mathematically as **lowest common denominator** or **greatest common divisor** -- and how is whatever is rejected to be contained (*Reintegration of a Remaindered World: cognitive recycling of objects of systemic neglect*, 2012)?

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