Mind Map of Global Civilizational Collapse

Why Nothing is Happening in Response to Global Challenges

Context?

Two-D projection: Exemplifying the nature of cognitive flatland
Three-D projection: Global configuration of incompatible uprightness
Three-D projection: Embodying disintegrative dynamics as fundamental to integrative design
Enabling comprehensible global configuration of concept maps
Global configuration of insights from "flat-pack" conventional system mapping
Conclusion
References

Produced on the occasion of the release of a map of a massive cosmic galactic collision 11 million light years from Earth -- and ungovernable massive uprisings in the Mediterranean region on Earth, endangering the European and global economies.

This is the latest image of the light elliptical galaxy Centaurus A. It is 11 million light years from Earth, and is visible to amateur astronomers. The unprecedented detail comes via the Wide Field Camera 3 of the Hubble Space Telescope -- combining images from multiple wavelengths (see enlargement; courtesy R. O'Connell of the University of Virginia and the WFC3 Scientific Oversight Committee, within the framework of NASA, ESA, and the Hubble Heritage -- STScI/AURA -- ESA/Hubble Collaboration). It was released on 16 June 2011. At the centre of the galaxy is a massive black hole -- weighing 55 million times that of the Earth's Sun. The ejected particles release intense bursts of radio waves and x-ray radiation. Centaurus A is going through a galaxy collision by devouring a spiral galaxy.

Curiously, whilst science can produce awe-inspiring images of conditions 11 million light years away, it seems to be totally incapable of applying resources such as to generate sophisticated images of the condition on Earth. There is no "Hubble Earth Telescope" -- with a "Wide Field Camera 3" -- capable of mapping the conditions undermining global governance capacity. Many satellites of course orbit the Earth, but they are only capable of focusing on tangibles -- such as the contents of the backyards of the homes of people -- not their degree of despair nor whether they rely on narcotic substances.

Science seemingly cannot detect and map intangible psychosocial factors which are inherent in the processes of global civilizational collapse. There is no single image to portray this collapse.

Two-D projection: Exemplifying the nature of cognitive flatland
This is a map of global civilizational collapse!
Indicative configuration of factors undermining fruitful action

The above image follows from previous experiments in offering a single image, notably as presented in:

- Recognizing the Psychosocial Boundaries of Remedial Action: constraints on ensuring a safe operating space for humanity (2009)

Missing from the image are dependency relationships between the points to show how one condition aggravates another. However inclusion of such relationships is a simple educational exercise in which many would be happy to indulge -- especially to reflect their biases. A more complex variant of this exercise resulted in the massive online databases of the Encyclopedia of World Problems and Human Potential (commentary). These take better account of the variety of perspectives but raise the question of how to cluster such a variety of contrary perspectives in a single map -- of which the above is but an indicative example (and necessarily provocative). Also missing from the above image is any attempt to cluster related points within it in order to offer further insight.

Some more complex possibilities have been explored with respect to that Encyclopedia initiative:

- Experimental SVG Representations of Entity Interrelationships (2007)
- Preliminary NetMap Studies of Databases on Questions, World Problems, Global Strategies, and Values (2006)
- Simulating a Global Brain using networks of international organizations, world problems, strategies, and values (2001)

Will the projected "Living Earth Simulator", of the FuturICT EU research initiative -- a 10 year 1 billion EUR program "to explore social life on earth and everything it relates to" -- offer more comprehensible maps of relevance to governance than those of the Limits to Growth project in 1972 (Social Supercomputing Is Now, Science News Online, 26 May 2010)? If not, will the simulation be able to show why not -- in the light of issues discussed separately (Considering All the Strategic Options: whilst ignoring alternatives and disclaiming cognitive protectionism? 2009)?

Will that simulation be able “explain” the depreciation of the relevance of that initiative to governance, as reviewed by Graham Turner (A Comparison of the Limits to Growth with Thirty Years of Reality, 2007)? Will it be able to take account of the sociopathological issues raised from a cybernetic perspective by Maurice Yolles, et al. (Toward a formal theory of socioculture: a yin-yang information-based theory of social change, Kybernetes, 2008)? What are the implications of despair for global governance (Implication of Personal Despair in Planetary Despair, 2010)?

Three-D projection: Global configuration of incompatible uprightness

The above challenges can be usefully configured in three dimensions. This has the potential advantage of suggesting how some of them may be effectively "invisible" from the perspective of those associated with, or recognizing, others positioned elsewhere around the surface. Such a configuration is curiously appropriate to the principled "uprightness" with which individual challenges may be associated -- by the constituencies which "uphold" their inherent value.

The polyhedron used is the icosidodecahedron which has 30 vertices. The challenges above were each associated with a vertex. The images below result from various standard geometrical manipulations of that form -- designed to trigger imaginative reframing of the relationship between the challenges. Many other such manipulations are possible to highlight other relationships.

The images are each screen shots of what can be viewed (and enlarged) much more clearly in rotation -- using a standard software package: Stella. This is developed by Robert Webb (Stella: Polyhedron Navigator). It is with this application that the images were generated and by which they were modified interactively. The clarity of the text, corresponding to the challenges presented above on the two-dimensional map, is however secondary to the projections by which they might be configured.

The approach has been extensively discussed separately:

- Polyhedral Pattern Language: Software facilitation of emergence, representation and transformation of psycho-social
These raise the question as to whether any "mind map" of psychosocial factors is based on a fruitful "projection", as understood in geographical mapping -- given that "projection", as understood in a psychological sense, is a defence mechanism whereby those unacceptable or unwanted thoughts or emotions (typically denied) are then ascribed to the outside world, usually to other people. Related issues were explored in an earlier approach to such mapping (The Territory Conceived as the Map: in search of radical design innovations in the representation of human activities and their relationships, 1979).
Three-D projection: Embodying disintegrative dynamics as fundamental to integrative design

Considerable thought has been given to the relevance of specific polyhedra to relationship issues. From the perspective of management cybernetics, Stafford Beer has made extensive use of the icosahedron as a means of configuring divergent perspectives (Beyond Dispute: the invention of team syntegrity, 1994). Unfortunately the use of his insights has been restricted under intellectual copyright relating to "syntegrity" and their development has been highly constrained.

Especially significant however is the continuing development of Beer's underlying systems concepts from a cybernetic perspective -- of which syntegrity is but a particular application. These developments are associated with the Viable Systems Model, namely a system organized in such a way as to meet the demands of surviving in a changing environment. A prime requirement for such adaptability being the recursive links within the system. This has been developed by Maurice Yolles, in particular for human agency, through an approach called Knowledge Cybernetics (Organisations as Complex Systems: an introduction to knowledge cybernetics, 2006). This provides one of the few approaches that can enable a detailed geometric explanation of complex modes of being.

R. Buckminster Fuller gave considerable attention to the cuboctahedron ("vector equilibrium") and its capacity for structural transformation (Synergetics: explorations in the geometry of thinking, 1975; Synergetics 2: further explorations in the geometry of thinking, 1979). The transformative role of the vector equilibrium -- showing how it can be contracted from the cuboctahedron, through the icosahedron to an octahedron and down to a triangle -- is discussed separately (Vector Equilibrium and its Transformation Pathways, 1980). Fuller notably used this in the Dymaxion map -- a projection of a map of the Earth onto the surface of a cuboctahedron, which can be unfolded and flattened to two dimensions. However, possibly because its use is restricted by patent, it does not seem to have been applied to mapping concepts, as might be assumed to be a concern of Fuller's "geometry of thinking".

Henry Evering, founder of The Eidetic Academy and publisher of the Eidetic Reference Book, used polyhedra as a means of enabling "whole organization synergy". Also of particular relevance are the insights into threefold learning cycles of Arthur Young (The Geometry of Meaning, 1984).
Separately an argument has also been made for combining such insights, notably in response to the kinds of representational challenge highlighted above (Geometry of Thinking for Sustainable Global Governance, 2009). This is also consistent with the quest by Christopher Alexander for a geometrical approach to harmony (Harmony-Seeking Computations: a science of non-classical dynamics based on the progressive evolution of the larger whole, International Journal for Unconventional Computing (IJUC), 2009), as separately discussed (Harmony-Comprehension and Wholeness-Engendering: eliciting psychosocial transformational principles from design, 2010).

A possible approach, using the above challenges, is to associate them -- as divisive operators -- with the edges of the polyhedral framework (rather than with the vertices as was done in the images above). This is potentially significant since it is the divisiveness of these operators which "opposes" or "counteracts" any tendency to greater coherence. Thus, as with any architectural construction, their tendency to ensure "apartness" (in two-dimensions) can be used as a design feature to configure a more coherently integrative structure of higher dimensionality (in three-dimensions in this case). The possibility of employing omnipresent divisiveness as a structural element, rather than depending on achieving elusive consensus, has been tentatively explored elsewhere (Sustaining the Coherence of Dialogue through Apartness Patterns of systematic configuration of entities through hypertext, 1997; Social organization determined by incommunicability of insights, 1995).

Using the same Stella software package as for the images above, the "challenges" were simply mapped onto the edges of an icosahedron as shown below. As before the software was used to show various geometric manipulations (and augmentations) of the original icosahedron to elicit imaginative response to a more coherent approach to governance in the light of the set of challenges. Again, these images are simple screen shots of three-dimensional structures which can be variously rotated and from which video versions can be easily produced. The software notably enables "four-dimensional" variants, as in the last two images below.

The question raised by the enhanced versions of such structures is whether they are indicative of templates for higher orders of cognitive structure capable of integrating the global governance challenges more coherently. Especially relevant, potentially, is the interactive and dynamic function (necessarily absent from simple screen shots). In that sense such software is an extremely valuable learning tool.

Enabling comprehensible global configuration of concept maps

Representation of mind maps is typically easier to achieve in two dimensions. Whether on paper or on screen, this is the manner in which comprehension is most readily facilitated. Reproduction of images via printers or copying machines imposes this mode. The two-dimensional mind map above is therefore a better vehicle for communication, whatever its inadequacies. The question is whether the integrative understanding required to respond to the challenges of a collapsing global civilization is appropriately represented in this way --
hence the argument for the subsequent images above, best understood by their rotation. This awkwardness offers a useful metaphor for communication difficulties at this time -- neatly highlighted from a cognitive perspective by the arguments of mathematician Ron Atkin (*Multidimensional Man; can man live in 3-dimensional space?,* 1981) as summarized separately (*Social organization determined by incommunicability of insights*, 1995).

The above-mentioned work of Buckminster Fuller on the Dymaxion map suggests a valuable way of bridging from two dimension to three by "unfolding" and "refolding" the three dimensional structure as indicated in the following images

- **Icosahedron unfolded -- with lines representing the specific "Disintegrative Dynamics" of the original mind map**

- **Two successive stages in folding the above map**

- **Completion of folding of the map into global icosahedral form**

The process highlights the question as to whether the "distintegrative dynamics" of the original map can be meaningfully and fruitfully "triangulated" to enable their global configuration -- corresponding to the globality of the challenges of governance to which a response is required (*Triangulation of Incommensurable Concepts for Global Configuration*, 2011). Through the process of "syntegration" (now subject to copyright restrictions), Stafford Beer (1994) addressed this issue through the dynamics of problem "jostling" -- whereby a group of people would effectively juggle the articulation of their concerns as an emergent organization (J. Truss, et al. *The Coherent Architecture of Team Syntegrity: from small to mega forms*). In practice the process of syntegration converges more readily on "syntegrity" to the extent that the range of issues is narrower -- less incommensurable or challenging -- and when those participating in the process exclude those associated with more controversial dynamics. More challenging versions are required.

Prior to "syntegration", such triangulation was explored on the occasion of the *Earth Summit* in Rio de Janeiro in 1992 (*Configuring Globally and Contending Locally: shaping the global network of local bargains by decoding and mapping Earth Summit inter-sectoral issues*, 1992). This included *Representation of Issue Arenas on Icosidodecahedral Net* and *Spherical Representation of Icosidodecahedral Net of Strategies*. Following the Rio+10 event, a two-part Rio+20 event is to be held in 2012 (*United Nations Conference on Sustainable Development; Stakeholder Forum for a Sustainable Future*).
Global configuration of insights from "flat-pack" conventional system mapping

There is widespread exploration of various forms of graphical representation of networks -- whether of people, groups, topics or other entities. Topic mapping refers to the graph structure that goes beyond concept maps (nodes with labeled arcs for relations). Topic maps make the labeled arcs into topics. Everything is then understood to be a topic -- an object that stands as a container for representations (key/value pairs). Topic modeling is then a type of statistical model for discovering the abstract "topics" that occur in a collection of documents. Latent Dirichlet allocation (LDA) is currently one of the most common, with various extensions.

Statistical text analysis techniques such as Latent Semantic Analysis (LSA), Hyperspace Analogue to Language (HAL), and Latent Dirichlet Allocation (LDA) have demonstrated that highly useful and reliable information can be extracted from word co-occurrence information in text. One application, Leximancer extends and reworks this approach with two stages of non-linear machine learning to provide a statistical means of extracting clear semantic patterns from text (Leximancer White Paper, 2010).

The sophistication of such analyses suggests the possibility of adapting the approach to look at forms of "co-occurrence" which signify problematic dynamics and incommensurability, rather than a degree of commonality, compatibility and mutuality as is conventionally the preoccupation. Understood in binary terms -- as the oppositional "us and them" of psychosocial relations between A and B -- the question is whether these techniques then enable the detection of a third position (C) with which both A and B have distinct oppositional relations. Such analysis would constitute a form of "triangulation". The pattern could then be extended to detect D, with which A and C might both have distinct oppositional relations or incompatibility. In this way triangulated networks of "distintegrative dynamics", as depicted above, could be detected.

Understood as a "flat" representation, the question then becomes whether the triangulation is of a kind that enables (or necessitates) "folding", as depicted above, to configure structures of higher order and coherence (Spherical Configuration of Categories -- to reflect systemic patterns of environmental checks and balances, 1994). Given the relevance of such techniques to hypermedia and web-enabled discourse, of particular interest is whether such an approach can go beyond facilitating the emergence of mutual interest groups which tend to exemplify (even "incestuously") a shared comfort zone and container for "groupthink" (Spherical Configuration of Interlocking Roundtables: Internet enhancement of global self-organization through patterns of dialogue, 1998; Dynamically Gated Conceptual Communities: emergent patterns of isolation within knowledge society, 2004).

Could such folding of "flat-pack" conventional thinking render explicit forms of higher and more integrative order, exemplifying the divisive challenges of current psychosocial dynamics -- with which a degree of cognitive engagement is required (Polyhedral Empowerment of Networks through Symmetry: psycho-social implications for organization and global governance, 2008)?

Conclusion

Any assumption that the folding/unfolding process described is obscure, and beyond normal competence, needs to be corrected in the light of the widespread construction of many kinds of container from various kinds of "flat-pack". Especially significant is the construction of cups and other vessels, as with the Orkaso Fold Flat Tableware for outdoor activities -- and their "reflattening" for subsequent travel. It is all the more significant in the light of the extensive arguments regarding the "container metaphor" (George Lakoff and Mark Johnson, Metaphors We Live By, 2003; Earl Woodruff, Manifold Relational Understanding: moving beyond the mind-as-container metaphor in educational technology, 2005). How is global civilization to be understood as a "container"?

The curious tendency to think of global civilization as "flat" is evident in the award of the first Financial Times and Goldman Sachs Business Book of the Year Award to a much-celebrated book of Thomas L. Friedman (The World Is Flat, 2005). The award recognizes the business book that provides "the most compelling and enjoyable insight into modern business issues, including management, finance and economics." Does this imply some form of "delivery" of a "flat pack" civilization, as separately questioned (Irresponsible Dependence on a Flat Earth Mentality -- in response to global governance challenges, 2008)? Or, given the challenge of a collapsing global civilization, is Friedman ironically a herald of its collapse into a "flattened" form -- as a consequence of a growth paradigm, incapable of functioning sustainably as a viable container (cf. Bob Lloyd, The Growth Delusion, Sustainability, 2009)?

Does Friedman's questionable argument help to reinforce the case for finding ways to "fold up" the implicit "flat pack" mind map of the world -- an as-yet-to-be-discovered cognitive analogue to the admirable animation of the folding of the Dymaxion map of global geography? Can relevant human "distintegrative" tendencies be "triangulated" and represented spherically, as previously suggested (Spherical Configuration of Categories -- to reflect systemic patterns of environmental checks and balances, 1994)? Is "playfullness" vital to the integrative creativity called for in this process (Engaging with Globality through Playful Re-categorizing, 2009; Enacting Transformative Integral Thinking through Playful Elegance: a symposium at the end of the universe? 2010). This tends to be confirmed by the continuing appreciation of the many videos and toys of the "jitterbug" originally used by Buckminster Fuller to illustrate the folding/unfolding of the cuboctahedron.

One of the distintegrative dynamics contributing to the collapse of global civilization is that significant insights are variously made subject to constraining intellectual copyright -- as with those of Stafford Beer and Buckminster Fuller (Future Coping Strategies: beyond the constraints of proprietary metaphors, 1992). Fortunately there are many polyhedra variously suitable for such mapping, although the unfortunate possibility of "polyhedral squatting" exists -- by analogy to cybersquatting. To what extent is survival of global civilization jeopardized by self-interested parties holding it to ransom through intellectual copyright?

The supermassive black hole, associated with the image of Centaurus A (reproduced above), drives powerful jets of particles to a speed close to that of light, releasing intense bursts of radio waves and x-ray radiation [more]. Ironically the visibility to humanity of a distant collision on a galactic scale highlights the contrasting invisibility of the collision with reality on the planetary scale of Earth -- in our own backyard. Hopefully the capacity to comprehend what is happening 11 million light years away will inform insight into global civilization
collapse. Are there fruitful parallels or metaphors worthy of consideration (Towards an Astrophysics of the Knowledge Universe? from astromantics to noonautics, 2006)?

Is the "black hole" of our global civilization to be understood like the proverbial "elephant in the living room", or that in the traditional tale of the seven blind men and the elephant (Climate Change and the Elephant in the Living Room, 2008)? What is required to recognize its effect on global governance (Strategic Challenge of Polysensorial Knowledge: bringing the "elephant" into "focus", 2008)? Like a massive black hole, does it distort the way strategic information is "bent" around it (Liposproblems -- Developing a Strategy Omitting a Key Problem: the systemic challenge of climate change and resource issues, 2009)? Certainly a matter of great gravity!

Coincidentally with publication of the image of Centaurus A, an issue of the New Scientist journal (18 June 2011) reports on the capacity, using a radio telescope under construction in Chile (the Atacama Large Millimeter Array), to detect objects from the cosmic "dark ages" of the universe 13 billion years ago. The previous issue reports on the current construction of such a telescope in China -- capable of resolving objects 7 billion light years from Earth (Anil Ananthaswamy, China starts building world's biggest radio telescope, 13 June 2011). That same issue carries an interview with Stephen Law, author of Believing Bullshit: how not to get sucked into an intellectual black hole (2011).

It is appropriate to reinforce the point made above, that the thinking and resources behind the new radio telescopes are in no way comparable to those applied to exploring the intellectual "black hole" which would seem to characterize the inability of science to respond to the challenges of global governance at this time. Science would seem to have an ostrich-like preference for distant matters of no immediately apparent relevance. Is the real world -- as faced by governance and real people -- too complex for science? As with the religious worldview, has science sunk into a pattern of cultivating ever higher dimensionality -- ever more elusive to most -- in order to avoid confronting issues resulting from simplistic reliance on its methodology? Are both to be considered as exemplifying "transmundane" detachment, irrespective of the mundane consequences of the irresponsibility they engender? Might it even be said that -- as worldviews -- science and religion are in some kind of "morphic resonance", perhaps together with "democracy", now that it is effectively defined as an unquestionable "political religion"?

Arguably science has already been sucked deep into such a black hole, if only as indicated by its inability to deal "scientifically" with the psychosocial dynamics indicated by the map above. The most striking example is its complicity in the support of certain metrics whose flaws are only now being disastrously demonstrated (Uncritical Strategic Dependence on Little-known Metrics: the Gaussian Copula, the Kaya Identity, and what else? 2009). Also striking is the unquestioned capacity to focus on "explanations" of conditions -- as with the current report on the rapidly degrading conditions of the oceans -- but without the slightest interest in addressing remedial capacity (Remedial Capacity Indicators Versus Performance Indicators, 1981).

With the failure of unmapped climate change negotiations (significantly due to factors in the map above) and the impact of the recent nuclear disaster at Fukushima, science is now being asked to re-examine geo-engineering options (John Vidal, IPCC asks scientists to assess geo-engineering climate solutions, The Guardian, 15 June 2011). How is the enthusiastic complicity of science in such "easy" technical challenges to be compared to Law's "bullshit" -- given the demonstrably problematic track record of initiatives based on "proven" science (nuclear technology, introduction of species, groundnut scheme, large dams, deep-sea oil drilling, etc)? Is the attribution of "bullshit" to non-scientific perspectives a reflection of a massive "black hole" at the very core of the scientific approach -- a form of deep bullshit commensurate with that in governance (Viable Global Governance through Bullfighting: challenge of transcendence, 2009)?

The black hole metaphor is potentially comforting, however, in that it suggests that the psychosocial energies associated with civilizational collapse may well be driving insight close to the "speed of light" -- with "x-rays" now offering the capacity to see what has hitherto been invisible (Hyperaction through Hypercomprehension and Hyperdrive, 2006). Is this collective "enlightenment" the "upside" foreseen by Thomas Homer-Dixon (The Upside of Down: catastrophe, creativity, and the renewal of civilization, 2006)?

*Image of the Puyehue-Cordón Caulle volcanic eruption in Chile on 4 June 2011*  
Within days the ash cloud reached cities all around the Southern hemisphere, forcing airlines to cancel hundreds of international and domestic flights and causing travel chaos.

The image of a modern natural disaster is curiously reminiscent of that currently offered by science (at the top of this page) of the condition of Centaurus A 11 million years ago -- at what is effectively the Tortonian (late Miocene) stage in the geologic timescale of Earth. Modern mammal and bird families first became recognizable in that period, long before the emergence of humans -- for whom the insights of science into the governance of psychosocial systems in the present are now desperately needed.
References

Christopher Alexander:


Barbara Ehrenreich:
- Bright-sided: how the relentless promotion of positive thinking has undermined America. Metropolitan Books, 2009

Thomas L. Friedman:
- The World Is Flat; the globalized world in the twenty-first century. Penguin, 2006
- Hot, Flat, and Crowded: why we need a green revolution. Farrar, Straus and Giroux, 2008

R. Buckminster Fuller with E. J. Applewhite:
- Synergetics: explorations in the geometry of thinking. Macmillan, 1975 [text]
- Synergetics 2: further explorations in the geometry of thinking, Macmillan, 1979 [text]

Dan Gardner. Future Babble: why expert predictions are next to worthless, and you can do better. Dutton Adult, 2011

Charles Handy:


Klaus Krippendorff . Major Metaphors of Communication and some Constructivist Reflections on their Use. Cybernetics and Human Knowing, 2,1: 3-25, 1993 [text]

George Lakoff and Mark Johnson:
- Philosophy In The Flesh: the embodied mind and its challenge to Western thought. Basic Books, 1999


Naomi Oreskes and Erik M. Conway. Merchants of Doubt: how a handful of scientists obscured the truth on issues from tobacco smoke to global warming. Bloomsbury Press, 2010 [summary]


Joshua Cooper Ramo. The Age of the Unthinkable: Why the New World Disorder Constantly Surprises Us And What We Can Do About It. Little, Brown and Company, 2009

David J. Rothkopf. Superclass: the global power elite and the world they are making. Farrar, Straus and Giroux, 2008 [summary]


J. Truss, C. Cullen and A. Leonard. The Coherent Architecture of Team Syntegrity: from small to mega forms [summary]

Graham Turner. A Comparison of the Limits to Growth with Thirty Years of Reality. CSIRO 2007 [text]

Earl Woodruff. Manifold Relational Understanding: moving beyond the mind-as-container metaphor in educational technology. 2005 [text]

Maurice I. Yolles:


This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

For further updates on this site, subscribe here