TOWARDS A GLOBAL-SYSTEMS STEERING VISION THAT IS SIMPLE ENOUGH, BUT NOT TOO SIMPLE:- SYMVIABILITY

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ABSTRACT

The question addressed is:- How can we have pleasant long-term humane, human survival on Earth, given our very potent globally impacting technologies, huge populations and our terrible propensity for solidarity to propagate our own 'pure' quasi-tribal genetic and cultural identities through ruthlessly devastating competition with and suppression of, others' genes and cultures?

What has been tried and why it is not good enough: We have tried religious visions of peace, love (caritas) and even asceticism. These have indeed appealed to vast numbers of people, but have left them almost defenceless against those whose religious beliefs demand the conversion or extermination of unbelievers. We have also tried bread and circuses - economic growth with fair shares for all, but some humanimals are much more equal than others. The have-nots rebel (Thailand, Jamaica). Moreover large-scale economic growth without system-sciences based ecological wisdom quickly becomes ecocidal and eventually may be anthropocidal. Mankind's guiding visions have been workable for small populations with primitive technics, but they are proving to be much too simple to enable us to collaboratively steer the complex webs of coupled systems which constitute Life on Earth today. Recently, many people have pushed for notions of "sustainability" a rather ambiguous term, attractive to those with much to lose, but not so attractive to the have-nots of the World. What we propose: We propose an alternative, systems-sciences based vision that is simple enough to evoke World-wide acceptance and concertation of efforts by educated people, yet complex enough to ensure requisite variety of ventures, strategies, tactics and tools. The vision we call *SYMVIABILITY* is a vision of both ecological-cultural symbioses and intercultural symbioses World-wide, where each cultural actor appreciates the need to allow and support other cultural actors to live and flourish, providing that they control themselves to do likewise. It is important to eschew the use of "sustainability" which ambiguously allows people to believe that they can somehow manage to sustain whatever they feel identified with, (e.g. SUVs, imported foods and global air-travel etc.), provided that they make small sacrifices and others suffer large ones! . We propose this *SYMVIABILITY* as a transformative educative ultimate value vision based on methodological pragmatic philosophy and the systems sciences and implemented fairly through discursive legitimation forums representing all stakeholders – the whole to be carried out through global social networking and modelling and simulation games technology.

Keywords: sustainability, ecology, cultural-symbioses, symviability,

Towards a Global Systems Steering Vision

INTRODUCTION

Why this venture?

Why this venture? Because we all need better grounds for hope we need to: desire to go on desiring to go on surviving. And of course, we need to survive **today,** with wonder and delight and zest for life, despite everything! Antonio Gramsci advocated "Pessimism of the intellect combined with optimism of the will." From whence does such optimism of the will arise? - Usually from a guiding vision and committed well-organized collaborators. Movements succeed when they have a clear cosmic vision, good organization and get mass media publicity (Eyerman and Jamison, 1991). The movement needed now is a peaceful one toward Global fair-shares and conservation of resources for future generations. The purpose of this paper is to put forward an alternative proposal for a systems-sciences based guiding vision for our future. This should lead toward the collaboration of most existing global peace and ecology movements to act together for long-term viability of humane human life on Earth.

We would like to survive happily together for a very long time on this planet, but our attempts to technologically control each other in order to do so seem always to result in either superficially peaceful terrible inequality, or terrible war. Both of which outcomes have ironically increased our population exponentially, thus making eudemony that much harder to achieve. Now by continuing to follow this "single loop" control strategy, as our anxiety increases rich powerful minorities keep attempting to impose more deviation-limiting control technology to allay our anxieties and increase our security, this in turn increases resentment and belligerence. Security and Liberty, let alone Equality seem to be intrinsically incompatible given "human nature" (Berry, 1986), and our small ecologically unbalanced planet. Our biologically evolved–in human nature seems to include three related imperatives:- 1) to assiduously propagate our "selfish genes", 2) to propagate our aggressive competitive group dominance capability, 3) to propagate competitively our meaning-making cultural identities (comprised of: our tools and languages, religions, artforms, and our science and technologies). These have hitherto indeed successfully sustained both our ability to survive and our desire to survive, but now threaten us with prospects of mass misery.

Of course, on our suddenly small-seeming planet, indefinite expansive propagation of cultural identities and indefinite expansion of population are both physically impossible. However, competitive annihilation is all too possible (Turchin, 2005). It seems that religious/ideological wars have been often been worse than economic wars. However, it is not just the religious and ideological true believers, but also the true believers in opportunistic corporate power-grabbing, and the ideologically leveraged crimepetitive tyrants (e.g. Stalin, Saddam Hussein, Duvalier, Ceausescu etc. (Chirot, 1996) who foment conflict, amass wealth and impose totalitarian oppression. Historically, unless or until, they developed an overarching religious or imperial policing authority most tribal societies were in states of intermittent perpetual warfare with each other. This never really threatened humankind with extinction however, because weapons were primitive and populations were geographically isolated to an appreciable degree. Some, less warlike, populations grew rapidly and slowly managed to destroy the natural resources of their environments through overgrazing and burning off of forests etc. In the twentieth century, the collapse of imperial powers has led to resurgence of tribal warfare

and also the ubiquitous availability of too potent weapons has made our survival much more precarious.

Today our main anthropocidal threats seem to come from our huge population and our too successful technological and commercial growth which is burning off non-renewable resources and contributing to devastating climate change. Our cancerous hyper-consumptive growth is of such over-coupled complexity that it suffers major cyclic instabilities which cause much misery.

Interestingly, there seem to be contagious, very widespread alternating public moods of optimism and pessimism which are evidenced by variations in certain stock-market indices (Casti, 2010). John Casti shows that in periods of optimism more liberty and global communication, collaboration and free-trade are encouraged; in times of fearful low mood protection and excessive regulation are imposed. Neither state is good for global fair-shares, nor for long-term humane human survival. Optimystical mood laissez-faire leads to wasteful consumption of non-renewable resources, high pollution and un-employment in good-wage 'developed' countries. Fearful mood protectionism and heavy regulation lead to economic stagnation and unemployment in low-wage 'developing' countries. Obviously, adequate cybersystemic stabilizing ecological global governance is still lacking and is required. Just as obviously, no World government is going to spring into existence right away to provide such smoothing out. A plausible alternative cosmological vision (Toulmin, 1990) which offers hope often has been and again can be, a major factor in elevating mood and thereby improving global collaboration for eudemonic survival.

What has been tried and why it has not been good enough

Globalised trade and imperial policing been tried and it has worked to a large extent - until recently. Commercial globalisation has created strong nourishing interdependencies, and has given two thirds of the World's population hitherto undreamt of affluence. The military dominance and negotiating power, first of Britain, then of the USA. and its allies, has suppressed international warfare, but has done so at the expense of endemic ethnic-religious and economically motivated ongoing civil disruptions and terrorist strife.

Historically, what has seemed to be our best solution at the Global economic level has been to develop science based technologies, including financial and commercial ones, which have increased our productivity and global distribution capabilities so that nearly everyone can have more. But not, more equality, and not more liberty; the rising tide of bread and circuses, toys, tranquilizer-drugs and diverting games, has worked for about one third of World population, but at the expense not only of making things worse for others elsewhere, but also for all of us everywhere with continually increasing destruction of our habitats by pollution and climate change. At the trans-national corporate higher management levels, persons have been, and are being promoted to positions beyond their competence, leading to the collapse of huge corporations (e.g. in the US and EU financial institutions circa 2006-2008). Corporate boards have tried to make promotions carefully by thoroughly investigating performance at lower corporate levels. This strategy has often failed partly because of the fallacious assumption that the knowledge and skills and values which effective and efficient middle managers have been using to deal with

moderately complex systems, equip them for steering the new vast complex emergent Global systems. Such CEO and CFO promotions theoretically based on merit actually take many persons far beyond their knowledge of emergent complex 'edge-of-chaos' cybernetic systems (Peter, 1986). When persons believe they are really entitled to great power they often behave corruptly "because they feel at some intuitive level that they are entitled to take what they want" (Lammers and Galinsky, 2010). At the interpersonal socio-technical and personal levels bad-habits, cognitive fixities and psychological addictions handicap millions of poorly integrated persons. Appropriate conventional educational and psychotherapeutic services do some good, but are slow and expensive and unavailable in the quantities and places where they are required - or are flatly rejected by ideological 'true-believers'. In summary there is clearly a lack of complex systems science understanding and frequently also weak ethical and moral commitment among those who fight their way to the top of large organizations.

'Sustainability' just will suffice, neither as a universally inspiring guiding vision, nor as practise. It is apparent that many, if not most, current conceptualisations of sustainability are backward looking in that they focus on as complete preservation as possible of what the rich have enjoyed for quite some time. It is easy to enlist public support for sustaining whatever advantages, activities, places and objects, that wealthy westerners enjoy, whether they really offer prospects for long term viability of humankind or not. Unfortunately many 'solutions' to the sustainability problems which concern the wealthy create severe sustainability problems for the poor. For example, encouraging Mexican farmers to grow and sell their corn for making bio-ethanol to fuel American cars, a practice which has raised the price of corn above what many indigent Mexicans can pay to eat their staple food. 'Sustainability' is backward looking and neither physically nor socio-politically possible on the Global scale.

WHAT WE PROPOSE INSTEAD; AN ALTERNATIVE GUIDING VISION 'SYMVIABILITY'

Definition

It is fairly easy to create superficially attractive utopian visions, and even easier to demolish them. Usually they are seriously lacking in Requisite Variety (diversity) and are excessively concerned with un-democratically imposing supposedly universal virtuous uniformities of behaviour. Here is our attempt to do better by promoting an ideal vision of possibly great potential universal appeal. "Symviability" is defined most simply as ecolo-co-cultural symbiosis – as a long term commitment to living together considerately with each other and all the rest of Earth-Life. More precisely it is to be:- commitment to symbioses between all major human cultures and the biological flora and fauna of Earth AND a long term commitment to symbioses among all of the major human cultures (linguigions, national ideologies etc.). The main thing that this implies, is that wherever there is an appreciable power or intelligence differential between living/identity systems *the stronger shall wisely modify itself to attenuate its reproductive activity somewhat so as to maintain viability of the weaker (-*at the very least, to prevent extinctions). Clearly, trans-national third party educative interventions will continue to be required to influence

powerful political actor-systems to modify any unbounded crimepetitive reproductive imperatives that they may tend to exhibit.

The necessary Cybernetic (steering) System Sciences aspects of Symviability

Essentials for successful symbiosis

There are three essential requirements for symbiosis: Each partner system's outputs must offer the other system something that it really needs to survive. Each partner's outputs must not poison the other. The coupling must occur at those emergent cybersystemic levels of functioning which are most essential at the time and in the context, to support both the desire and the ability of each self-producing system to go on living and maintaining the partnership. The objective systemic requirements for viability of any autopoietic system are:- requisite standardized interface couplings and requisite available energy, fulfilment of the cybernetic laws of requisite variety and requisite heterarchy and adaptation to the 'edge of chaos' conditions which limit the steerability of any complex coupled system.

Human systems

If we conceive of civilized human-being as an historically evolved message being carried and propagated by humanimals and machines, then our central concern has to be the signal to noise ratio of the ongoing message of human being. One of the most important developments in cybernetic science is Ashby's "Law of requisite Variety" which can be derived from Claude Shannon's tenth theorem concerning the maintenance of adequate signal to noise ratio, or from game theory concerning what is needed to draw or win a game. Ashby's law states that for control (in the engineering, not the psycho-social sense) the controllers must have at their disposal a greater, or equal, resource of appropriate types of 'control variety' – control diversity, than the variety of disturbances which are to be encountered. [CV>DV]. Ross Ashby when queried agreed with Gary Boyd (1969) that this indeed provides a good argument for liberty in any society which wants to survive indefinitely. Only liberty can enable the populace to generate enough of a variety of solutions to counteract all the myriad challenges to survival which come up over time. Liberty requires not just enough trust and freedom from censorship to entertain with one another any possible strategies which can be imagined, but also the availability of enough quiet leisure time to do so. So clearly now, s*ymviability* requires requisite variety and therefore requires appreciable personal and organizational liberty to generate such variety conserving variety.

The other most important cybersystemic insights have to do with how positive (deviation-amplifying) feedback loop processes promote both systemic emergence (e.g. capital re-investment) and system collapse (e.g. population overshoot -> starvation). Therefore s*ymviability* implies the use of many heterarchical negative (balancing) feedback controls to attenuate pathological growth and collapse processes.

Heterarchy

For symviability, cybersystemic modelling and co-control of the most important emergent levels of the underlying generative processes which give rise to humanly constructed and experienced reality, must be heterarchical in order to take allow complex

system explanation and prediction taking into account the multiple probabilistic alternative mechanisms which already exist. Heterarchy is a name for a hydra-headed state of affairs, where there is redundancy of potential control. The conceptualisation of an appropriate functional heterarchy usually requires ambivalent thought.-.a willingness to ambulate freely between diverse perspectives. At times we need to increase our uncertainty in order to generate valuable new options (Boyd and Zeman, 1995]. Heterarchical structure is important for achieving robustness and evolvability in a wide variety of types of biological systems including human motivational systems. Normally "heterarchy" is a state wherein any pair of items is likely to be related in two or more differing ways. Whereas, hierarchies sort groups into progressively smaller categories and subcategories, heterarchies divide and unite groups variously, according to multiple concerns that emerge or recede from view according to current perspectives. Crucially, no one way of dividing an heterarchical system can validly ever be a totalizing or all-encompassing view of the system (Wikipedia, 2010). The highest emergent level involves at least two leading systems. Lower emergent levels involve multiple active systems. This complexity leads us, as perceivers, to a feeling of contradiction that invites new ways of envisioning and redeveloping the processes (Dockens, 2010). But, of course the next set of views is also just partial and temporary. There is only a provisional working model, which if informed by a guiding vision can be good enough for running simulations of options for action and managing current affairs, But of course, nothing can ever yield one single final true objective (etic) macro system model let alone, one acceptable to all people's (emic) self-understandings.

Higher-Order Emergent Cybersystems to be oriented towards Symviability

We use Boyd's (2000) theory of the evolutionarily emergent levels of the cybersystems, which constitute human becoming, is a refinement of Kenneth Boulding's systems levels scheme and a development guided by Mario Bunge's theoretical definition of emergent levels schemes. More precisely Boyd's model of emergent cybersystem levels is derived from considerations of distinct levels of operationally measurable kinds of uncertainty-reduction such as Shannon-receiver-uncertainty-reduction objective information, Klaus Weltner's subjective-information, and various kinds of higher-level wisdom needed for survival (Klir & Weierman, 1999).

The evolution of our cybersystemic levels can be portrayed in a `Just-so Story': Obviously, the most elementary living systems to survive were formed in ways, which reduced the likelihood of extinction in their environments. Primitive animals evolved nervous systems, which reflected their environmental niches in ways, which allowed them to deal with uncertain choices of what not to eat and of fight vs. flight. In a sense, their nervous systems modeled their worlds. Those were "Subsistantial cybersystems". Instinctual systems were selectively formed into emulative learning systems with trial-&-error-correction learning, approaches good enough for a lot of animal species' survival.

Our Human nervous systems and communicative interaction capabilities have evolved to do much better, and moreover to do it collaboratively in groups. The range and scope of uncertainties' which we have evolved and constructed ways of learning to deal with, has continually increased stepwise, adding at least four new levels to the basic ones developed in earlier animals. We added Negotiative (bargaining for resources), and

"Conjugo-propagative" (bargaining with, and for, soul-mates) cybersystems many millennia ago. In addition, more recently on top there have emerged the two levels of systems:- the "Liberative" (replacing inadequate learning habits, limiting beliefs and neurotic coping mechanisms), and the "Scientosophic" (co-constructing a coherent well validated model of the all aspects of the universe..

Arguably the first of these two higher level knowledge building systems to emerge (at least in ancient Greece) were the "Liberative" discourse socio-cybersystems which enabled us to free ourselves from limiting habits of thought, and to begin to free ourselves from indoctrination and mythological-ideological domination.

Liberative level cybersystems are typically educational sub-systems led by teachers who teach in the course of whatever subjects they teach – how to deal with fallacious arguments and handicapping self-reinforcing habits of thought (cognitive fixities), or they are quite another class of liberative socio-cybersystems - group psychotherapy systems led by psychologists who deal with various neurotic coping habits,(e.g. Phobias, cult-indoctrinations and other pathological identity-addictions). Other liberative socio-cybersystems include live-theatre and multiplayer virtual reality dramas and games. They can be deeply "Educational" in the broadest sense.

Scientosophic Level Systems - emerged when we had to some extent mastered the critical emancipative collaboration skills of the Liberative level. Historically, some of us (e.g. Aristotle in Plato's Academy) were freed enough to be able to form collaborations to produce better and better theoretical and artefactual models of our universe. They evolved "Scientosophic" socio-cybersystems. Scientosophic level systems are philosophically infused social systems where people collaborate to do science - to create and validate more reliable explanatory and probabilistically predictive models of the underlying (causal) processes, which generate all that we can observe, do, or experience.
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Why, for educational design purposes should we aim to support global symviability capability in terms of modelling how people can learn to participate in the two top-level socio-cybersystems? Because, these levels are more scientifically and pedagogically defined so we can clearly show what kinds of uncertainty reduction capabilities people are acquiring through them. These human cybersystems have historically evolved, to try to control their and our survival and eudemony, and because we can pretty clearly determine as we go along, what it takes for them to be reasonably successful they are a good basis for our educational designing. But, can educational systems for symviability through enculturing people to become productive members of these two higher-order systems actually be `designed' and implemented by co-opting the rapidly growing and complexifying global communication media? Perhaps yes given the encouraging progress being made with various forms of e-Learning, educative on-line games and intelligent tutoring systems (Floden and McKevitt, 2002).

IMPLEMENTATION

It is never too early to consider educating one-another toward greater viability (Roth, 2003. Boyd, 2006). We need to encourage reframing and constructively criticising whatever we are doing from this new symviability perspective. Constructive criticism implemented through Web forums, particularly ones where Habermas' type discursive legitimation representing all stakeholders can be carried out fairly, are something for us

start building now (see: www.symviability.org/weblog). Global social networking and modelling, simulation (Boyd and Jaworski, 2008) and role-play games (De la Cerda, 2010), can provide widely accessible education opportunities. Much opens up for us to do together.

CONCLUSION

The notion of 'sustainability' assumes some ideal balance which we obviously cannot know. Symviability however, not only changes the focus directly to interrelationships, but acknowledges the complex dynamic situation of our life on Earth without making a-priori claims as to what specifically that might be – it is open-ended; more in agreement with methodological pragmatism – arguably the best philosophy for our times.

The systems scientist John Casti (2010) argues from a century of historical financial data that far from events driving public attitudes the converse is true. Attitudes are altered by social networks sharing visions of fear or hope. Contrary to Marx the cultural 'superstructure' of shared visions actually does steer the behaviour of the economic 'base'. SO, CLEARLY, WHAT WE ALL NEED IS A WIDELY ACCEPTABLE BETTER ALTERNATIVE GUIDING VISION – ONE WHICH IS FULLY COMPATABLE WITH OUR BEST SYSTEMS SCIENCES UNDERSTANDINGS OF THE REAL UNDERLYING GENERATIVE PROCESSSES THAT GIVE RISE TO THE CONSTRAINTS WE MUST ACCEPT AND THE OPPORTUNITIES WE CAN USE.

We have argued here that by pragmatically evolving cybernetic conceptualizations of *symviability* we can together as systems scientists create just such a truly forward-looking alternative guiding vision for humane human viability. Symbolic language is the first step toward salvation. We cannot fight for what we cannot vividly describe. More than ever before, we need new conceptual levers that realistically promote humane human survival - let us try to develop *symviability*.

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