Societal Tsunamis Working Groups: Issue Sets 2007

The Purpose of the April 2007 series was to follow up April 2006 tsunamis meeting, by exploring the *issues* that three major strategic surprises pose for governance. The "Societal Tsunamis" include: "Environmental Dislocation" (climate change), "Evolutionary Secession" (converging technologies), and "Geopolitical Inversion" (Politico-economic power shift to Asia). The 2007 series also began to explore the potential of networked governance as a response to these challenges. It also examined whether complexity adds value to characterization of the challenges. Near-verbatim minutes have been circulated already. The purpose of this note is to isolate fundamentals.

Session 1

Environmental Dislocation

We agree that climate change represents inherently strong non-linear systems. These are not only qualitatively different from linear systems, but demand new departures in the behavior of government/governance if we are to deal successfully with them. "Success" is implicitly defined to mean that the magnitude of the challenge is recognized and acted upon in time to avoid: (1) catastrophic levels of climate change, if that is still within our power to do; and (2) to adjust well enough to the level of climate change that we experience, so as to maintain the coherence of our institutions, and the continuity of our hopes for progress as a species. This involves awareness of the possibility not only of physical "tipping points," but of psycho-political "tipping points." The latter, I define as abrupt, unpredictable shifts in collective behavior that might either energize our responses to climate change at one margin, or disorganize them at the other margin.

Government/governance must already contend with issues relating to the management of many environmental systems, but these are mainly dealt with as separable systems. Climate change on the other hand impacts all environmental systems, and confronts civilization with the problem of dealing with a "system of systems" whose interactions will be increasingly agitated by climate change. The problem becomes management in the presence of complexity.

One of the most fundamental issues for government/governance will be the ongoing relationship between the world of policy and the world of science. We agree that if responses are delayed in the hope that science will give us definitive guidance, then human responses will inevitably lag behind need. We will not achieve a scale and rate of implementation that matches the rate of environmental deterioration, if we insist on first seeing the latter before we act to modify it. This means that human actions designed to temper climate change will interact with it in ways that cannot be predicted at the time decisions are taken. Because non-linear systems cannot be modeled, neither can the interaction between such systems and policies aiming to control them. On the other hand, how far in advance of scientific opinion should pro-active action be taken?

How will crucial decisions be made? What will be the impact of climate change on governmental and societal structures? What will be the relationship between government and popular will as these decisions are made? What will be the intramural relationship between governments? How will very large material and moral tradeoffs be considered and decided?

Summary: global climate change will have to be dealt with by systems of governance largely as they are, since we cannot wait for new, more comprehensive and more powerful systems to come into existence first. Policy and science must now switch positions, with policy proceeding in the absence of absolute scientific clarity. In any event, to the extent that policy involves putting into action measures that act powerfully on drivers of global climate change, human behavior will continue to over-ride any underlying natural cycles: science will be able to model consequences, but can only measure them after the fact. The task involves increasingly complicated measures to regulate – rather than to restore – the environment on a global scale. There will be no natural equilibrium point, but rather there will be targets designated by governance systems. The normal operation of the environment has already ceased to exist by virtue of the impact of human activities. Humans must substitute their own definition of normal fluctuation and adjustment. There is no existing bureaucratic system that can directly administer such an approach, and it may actually be theoretically impossible to design one. .The scope of regulatory intrusion on human choice could be great enough to challenge the ability of democratic governance to cope.

Impact of climate on government and societal structures
Regulatory concept rather than final solution
What interests are served by focusing attention on global warming
If we are engaged in proactive decision making we need a vey well designed feedbacak loop.

WG 1/ Environmental Dislocation - Issues for Governance

1. Tragedy of the commons situation has emerged: is it worthwhile for the US to suffer the losses of reduced consumption if China (and eventually India) will exceed our greenhouse emissions (growing 8-10% annually/ heavily reliant on coal and petroleum)?
    a. Is there any way to dissuade China from emitting, given that rapid economic growth is their government's principal tool for ensuring domestic stability?
2. Two Billion people who do not use large-scale energy today are now embarking on their own era of high consumption. Is our planetary carrying capacity adequate to meet this challenge? If not, what are our options for dealing with this near-inevitability?
3. What scale transformation do we need to be thinking of to avert serious risk? 50% reduction from business as usual levels (Jhirad)?
4. How do we monitor fundamental discontinuities like accelerated methane release (from permafrost or oceans)? Since models, by definition, cannot handle nonlinear change, must a cautious government anticipate the worst?
    a. Does advanced computing hold potential for "modeling" such discontinuities (thus reducing the burden on government to plan for all contingencies)?
5. As the issue of peak oil reveals, it is extremely difficult to reach consensus as to where we stand when on a scale of severity. Is a more authoritative body than the IPCC necessary? Jaques Chirac has proposed a World Environment Organization to serve as forum for debate and organ for implementation.
6. If climate change affects poor countries first and most severely, what are the responsibilities of wealthy governments?
    a. Can we ascertain who did what to the global environment over time and the degree to which modern disasters are attributable to those impacts as opposed to random chance? What are the socio-political, even psychological, implications of "irrevocable" change to climate, point of no return?
7. Is there such a thing as "irrevocable change" or do we assume technology can reduce the damage? If so, at what cost?
8. Can we reasonably consider unprecedented undertakings like geoengineering (carbon 'sinks' or dumping sulfate into the upper atmosphere) without exhausting the options already at hand (widespread nuclear power)?

    a. Affecting 'tastes' is another option: reduced global consumption of meat would mean greater sustainability, but electoral pressures create disincentive to encourage lifestyle change.
9. To ensure effectiveness of multilateral action, is it necessary for the US to show good faith in all related negotiations such as Law of the Sea? Climate change is closely related to problems such as mercury, over-fishing, and ocean mining,
10. Because small perturbations can affect massive change (non-linearity), is a new kind of regulatory regime necessary? Can even the most comprehensive response deal with all variables in the problem?
    a. Public-private partnerships? Markets create few incentives for business to make sacrifice. Thus, change must be incentivized by foresighted government.
        i. Large costs for government and few chances to claim victory: Failure means horrendous news; success means no news.
        ii. Could smart regulation drive companies to address climate crisis for reasons of competitiveness rather than altruism?
11. Climate change epitomizes the pervasive problem: can we act decisively without certainty? What degree of certainty is the threshold for decisive action? While there is extremely strong evidence that CO2 rise *causes* temperature rise, science shows correlation *not* causality (Hume).

Session II

Evolutionary Secession

We are asserting control over everything in the biosphere, including ourselves. Human self-modification is underway as multiple technological pathways are explored. Pharmacological; genetic; man-machine interface at every level from individual to societal. In almost every instance, advances are characterized as beneficial: additions to human capacity; responses to human deficiencies, including inherited defects, disease and trauma.

However, there are important boundaries that are being effaced in the process. When do these processes become a search for power on the part of specific groups, as opposed to contributions to the welfare of society? Where does medicine for recovery and survival give way to medicine for enhancement and dominance? What is human authenticity? New legal frontiers as we produce

artificial intelligence that begins to mirror human intelligence; or as we acquire more subtle appreciation for of animal intelligence?

Are there limits to what we should attempt? Are such limits enforceable? What would the downside of enforcement be? For example, to what extent should government be responsible for defining and enforcing a standard of fairness, with respect to access to new forms of enhancement. Is this an issue that relates in some vital way to the basic premises of political democracy? Assuming that the answer is affirmative, by what political process can the public be brought into the process of making choices?

WG 2/ Evolutionary Secession - Issues for Governance

1. Is the extension of life *ad infinitum* in the national interest of the United States?
    a. Is it appropriate for Congress to legislate an answer to such a question?
    b. Is it incumbent upon government to answer such foundational questions before deciding on how to regulate relevant areas of innovation (e.g. genomic medicine, artificial intelligence, nanotechnology, cryonics, and mind uploading technologies?)
2. In the past, areas of innovation with massive societal consequences have been dominated—or at least regulated—by government (e.g. Manhattan Project). Development of "converging technologies" will likely be directed by private, profit-seeking firms.
    a. What are the implications of this for inequality? Will a "genomic divide" massively more consequential than the current "digital divide" emerge along geographic, class, and/or racial fault lines?
    b. At what point is innovation an unacceptable threat to social mobility?
3. What are the economic implications of having 200 year old citizens?

Session III

Geopolitical Inversion

In economic matters, the primacy of the state has been under challenge for decades. However, the process is accelerated by: globalization; by the growth of supra-national corporations, which is integral to globalization; and by the shift of economic power to China and to corporations in China. The latter is a new twist, insofar as China's corporations are far more beholden to the political power of the Chinese states than are western counterparts. As one participant said, " The corporations are major political players in democracies; in China they are supplicants." The fundamental economic strategies of western economies are different than those of the Asian economies.We cannot adopt the Chinese model, nor can they adopt ours. There has been an assumption that economic "convergence" would bring about political convergence. That is not necessarily true for China. Russia, too, is emerging as an energy super-power operating under strong state influence. Climate change will be a major wild card. It may establish that globalization is unsustainable. But there is no alternative growth model to globalization as we know it..

The financial system presents a major dilemma. Its growth is essential as the source of all other economic growth. But the system is based on invented sources of wealth to such an extent that there may be no way to stop an unraveling should one begin. Central banks are of influence, but not really in control of this process. Efforts by national authorities to regulate tend to drive corporations away towards less regulated environments.

How can a national government, even that of the United States, deal with forces that are of such magnitude? What is the economic future of the United States if present trends continue? How shall those trends be modified so as to be more the advantage of the United States? In this situation, how is "good" to be understood: for citizens at different income levels? For corporations? For government? How to absorb environmental costs into the working core of economic theory and practice (as opposed to dealing with them as "externalities." How to introduce evolutionary changes without triggering unexpectedly momentous consequences?

WG 3/ Geopolitical Inversion - Issues for Governance

1. China and India are likely to become the first competitors on our scale of physical and human resources perhaps since the Civil War era. Within 30 years they will be full-fledged peers if not greater economic powers:
    a. Given their cost parameters, we would have to make extremely large adjustments/ sacrifices to keep our position

        i. Are we as a society prepared to give up this position? What are the *global governance* consequences of doing so? Will this choice be a deliberate one made through democratic channels or dictated by business? Is relative decline inevitable?
        ii. How should acknowledgement of our diminished relative economic power *in the future* alter our political and economic policies *today*?
    b. What are the political implications of China's economic growth *within China?* United States of China? Looser confederation? Can the state survive without a well-defined power center?
    c. Two approaches to globalization: (1) US-UK (Short term consumer welfare, consumption is the objective, markets are ends in themselves, competition is key) and (2) Asian (surpluses, large dollar reserves, fast drive for technology, huge personal savings rates).
        i. Are these mere policy choices or deep differences which stem from current socio-political organization?
2. Part of the success of the free market approach has been attributable to the perception that we operate in an open, nearly infinite system—what barriers exist can be pushed ever-further by innovation. We are now patently coming close to the planet's carry capacity in areas such as atmospheric CO2 concentration:
    a. This should change prevailing view of externalities: they are more like centralities as they directly affect our existence. How can government promote this view? Does this reality demand the end of the era of deregulation? Is the deeper cause of this a prevailing ethos of "looking out for number one?"
3. Fiscal challenges range from baby boomer retirement to health/ entitlement cost inflation to trade imbalances.
    a. Debt growing at $1.3bn per day since September 2006—well over $8tn. This will be exacerbated by baby boomer retirements.
        i. Countless attempts to reverse such trends have failed: will it take an '87-style market crash to spur action? Do less painful warning bells exist?
    b. Would a fundamental re-adjustment of US economic management-style be possible without destroying the system?
        i. Would it be productive to retaliate against countries (e.g. China) for undervaluing currencies to the detriment of US producers?
        ii. How could we create incentives for US firms to invest in the US? Changes to US corporate tax structure?

4. Ethics—Business Schools once taught "to earn profit in a decent way." This concept has declined in influence
    a. Just as ownership of capital has been means toward profits, ownership over policy decision-making is increasingly prime target for profit-seekers. What are the implications for US democracy?
    b. Democracy and capitalism have a complex relationship: While the free market's push toward rising incomes and networked/ distributed decision-making are an excellent fit with democratic governance, the inequalities of power and wealth consistently associated with unregulated markets can be destructive of democracy
        i. How can a democratic state continue to reap the rewards while limiting market encroachment on popular sovereignty?

Session IV

Networked Governance

Networked organizations represent a particular kind of protocol governing the flow of information and authority among the agents of a system. They are made possible by modern information technology which has destroyed factors of time, geography, size of memory and speed of access to, etc., which previously constrained the design of such systems. Information technology is a derivative of computational power, which permits information to be shaped into iconic forms that carry meaning far more rapidly than the text in print.

These capabilities have made it possible for economic power to operate around the world in qualitatively new ways: the instantaneous flow of money generated by credit instruments is the most important manifestation of this shift. It sustains and accelerates the various other economic processes that we bundle together under the term "globalization." Political organizations struggle to keep up with the pace of change, and it is not at all certain that they will be able to in any constructive way.

Networked government – and more broadly, networked governance – offers the possibility of much faster processing speed within the system. Increased processing speed translates into faster resolution of information into patterns, and therefore, into higher sensitivity of government to information, and into faster and more well-designed responses. One question is whether it is possible to realize these gains in ways that make government/governance better able to

deal with the needs of nations, and of citizens, facing complex forms of change. A second question is whether such changes are able to enhance democratic governance by speeding its behavior to the point where popular (representative) institutions can still meaningfully shape circumstances.

Questions are presented for operations within the executive branch. Even more significant questions exist for the Congress: specifically, whether it can continue to give the electorate a way to self-govern in the face of complex events. It follows that there are issues as to the relationship between the Congress and the executive branch: in particular, whether it is possible for them to collaborate in dealing with complex issues.

Longer range issues can be viewed as a subset of complex issues. The longer the time-line, the better chance there may be for intelligent shaping action. On the other hand, the longer range can be permanently shaped by series of short-term measures, and some would say that since the longer term future is not predictable, all we have to go by are short-term choices, whose consequences are only dimly visible at the time of action.