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Planetary Security and Anticipatory Governance
Climate Change and Other Apex Challenges

The central question of planetary security is this: will the Earth continue as a habitat suitable for the indefinite existence of a flourishing, advanced technological civilization, without which the physical survival of the human species is in doubt? This paper takes the position that governance will be a critical factor in determining the answer to that question. It focuses on practical ways by which governance can be upgraded so as to provide more comprehensive and effective responses to complex issues. It asserts, however, that governance as it is universally practiced today is not up to this task; that it needs to be upgraded at every level up to – and especially – the global; that the technical means for accomplishing this exist; but that the political will do so is problematic; that this impulse may finally be engendered by a new class of meta-challenges – with climate change as primus inter pares – but that the later we begin, the higher the costs and the greater the risk that events will overtake us.

Governance and complexity

Governance as we know it is a legacy system, reflecting political thought and industrial experience carried over from the 19th and 20th centuries. These experiences are based on the assumption that issues can be broken into sub-units which can be resolved in isolation, and then combined in a serial process resembling an assembly line. In the "real" world, however, major issues are not merely complicated but **complex**: parts of systems within which all elements are mutually interactive, such that a change at any one point generates effects that are expressed simultaneously across the system as a whole, often resulting in discontinuities up to and including catastrophic failure.

The prevailing view in government is that the existing approach reflects inherent limits to what we can know about the future, and, therefore to what we can do – as a practical matter – to manage uncertainty and risk. Unfortunately, the pace of societal change, which is a function of the hyperbolic rate of technological innovation, is accelerating beyond the adaptive capacity of governance as currently practiced. There is an urgent need to step up our game.

Anticipatory governance

Dealing with complex societal issues requires a form of anticipatory governance, which, I believe, requires three interlocking systems, each with its specialized output, as follows:
– more intimate linkage between foresight and policy;
– lateral networking as the basis for executing policy for complex issues; and
– "feedback" for gauging and responding to the effectiveness of policies once they have been put into action.

The foresight/policy system would promote awareness of long range trends and possible events, as matters deserving attention even in the immediate present. It would counter-balance pressures to think and act only in the relatively short-term, often making problems worse for those who will be affected by them in the longer term. To a considerable extent, this is a "cultural problem." There are experts in government who speculate about longer range challenges, and there are experts who deal with action in the present. These communities do not communicate well with each other, and the purpose of a foresight/policy system would be to cultivate constant interaction.

A networked management system would promote the integration of the resources of all relevant parts of government into composite plans of action addressing specified objectives, including their budgetary requirements. The term of art for this is "whole of governance," and its goal is to bring about "management to mission" as opposed to "management to mandate". It offers a way to overcome the traditionally vertical organization of agencies of government, without requiring their deconstruction – which would be impractical. At the Federal level of government in the United States, the basis for this can be found in the existing inter-agency arrangement. This system, however, remains a work in progress, often producing nothing more than coarse aggregate of bureaucratic interests rather than a true alloy.

Feedback is a concept familiar to engineers, as a way to limit error in mechanical or electronic systems by providing the means

for their continuous adjustment. As applied to governance, feedback would provide the means to adjust policies and programs in time to correct for ongoing error, and/or to exploit emerging opportunities. The objective would be to prevent the "zombification" of policies that remain in effect too long, without benefit of ongoing review and adjustment.

So-called "case-studies" can provide perspective at the level of history and its lessons – but not the kind of information needed for real-time action. What is needed, however, is a feedback process that continuously monitors the effects of policies in comparison to their promised results, producing information that would reach policy makers in time for adjustment, taking into account realities such as the inertia and momentum.

In the United States' government, the sub-systems needed for anticipatory governance are in existence. These are very powerful analytic tools for generating alternative projections about the future; proficient organizational techniques based on networking; and procedures for using data as a method to objectively test the efficacy of policies that are in force.

The problem is that these systems do not come together in any single area of governance. Rather, they exist in scattered locations and are not part of the locus of policy-making at the national level. This shortcoming impairs the ability of the United States to deal with policy issues that are complex, especially with an emergent new class of challenges that have the potential to disrupt social, economic and political structures. These issues are not only present in the United States, but are in fact global, where legacy approaches to governance are too slow and fragmented.

Anticipatory governance as an adaptation to climate change

Climate change is an apex example of a complex societal issue with severe implications for national well-being and

international security. The requirements for managing climate change include: (1) slowing the rate of onset of climate change to allow time for an effective response; (2) holding environmental and societal damage to levels from which it is possible to recover; (3) managing emergency responses that are properly scaled to anticipatable, near-term impacts of climate change; (4) establishing a long-term equilibrium between human needs, and the requirements of a stabilized climate system; and (5) sustaining this equilibrium by means that are compatible with prospects for continued societal advancement at the national and global levels.

Attaining these goals will require unprecedented levels of collaboration. For example, there will need to be global agreement on: (1) the underlying or base-line rate of warming, which will have to be re-assessed periodically; (2) measures to constrain emissions of green-house gases; (3) the effects of such constraints; (4) the implications of new technologies on mitigation and adaptation to climate change; (5) the early identification of impending crisis-level issues relating to climate change; and (6) advance funding at regional, national and global levels.

These (and other) requirements clearly exceed the capabilities of even the most powerful states. There is already an agenda of climate-driven changes that are insoluble at any level of effort that does not include a form of anticipatory governance at the global level, for example: the intensifying destructiveness of tropical storms and monsoons; the increasing intensity and destructiveness of forest fires; the collapse of coral reefs on a world-wide basis; accelerating desertification; and increasing urban temperatures that are pressing the upper limits of survivability. Moreover, these represent the primary onset, rather than the ultimate cresting, of threats generated by climate change. They are already crises in the "Now", but they point towards much worse levels of disruption later, arriving at such speed as to require action to address not only the immediate effects of climate change, but – at the same time – its fundamental causes. To achieve this,

there would have to be a transition towards governance in which states would – under the pressure of threats to survival – respond to internationally binding agreements, in exchange for more rapid progress towards re-stabilization of climate in balance with human economic and social aspirations.

The Paris Agreement has provisions for periodic reviews which may become venues out of which will emerge ideas for an integrated system of anticipatory governance, to manage a global response to climate change. Such a progression may seem improbable, but this process has already been occurring in other domains such as conflict avoidance and conflict termination, by means of UN Security Council resolutions that are mandatory under Chapter VII of the Charter.

Potential impact of a changed political environment

The Paris process faces a dual challenge: to keep the international community pointed towards compliance; and to create the basis for a follow-up agreement (or series of agreements), involving much deeper and faster reductions in emissions of carbon dioxide and other green-house gases. It will, moreover, have to accomplish this in the absence of positive support from countries who have supported the agreement but who have since changed from leaders to laggards, notably The United States.

The present US Administration's opening moves regarding climate change have been hostile. Along with this, its general approaches to the conduct of foreign policy are shifting away from broader international engagement, which, in turn subtracts from the ability of governments and international systems to focus as tightly on climate change as might otherwise have been the case. Moreover, the US Administration's determination to put sovereign interests ahead of collective security, provides a doctrinal basis not only for a sea-change in US behaviour within the international system, but for other nations to follow suit. Nevertheless, there is reason for hope

that technological, economic, and political momentum behind measures to combat climate change are such that despite political changes domestically, the goals that were set under different political circumstances can still be met – in the US as well as in other countries.

It would be wise, however, for international planning to be based on scenarios involving delayed, less effective and more expensive responses to climate change as the result of this changed political environment.

Beyond climate change: escaping the fate of Prometheus

Climate change belongs to a new class of highly disruptive trends, emerging out of the technological brilliance of our civilization, including consequences such as: the creation of whole classes of pathogens that are resistant to antibiotics; the chaotic modification of the existing stock of living things through totally unregulated, opportunistic applications of genetic engineering; the wholesale liquidation of many forms of human employment, as the result of robotic substitutes for low-skill labour in the absence of workable plans for a societal transition; simultaneously accompanied by the depreciation of higher levels of human creativity as a by-product of the introduction of radically advanced forms of machine intelligence.

Legacy systems of government do not at present have the "bandwidth" to sustain the kind of policy-making required to deal with the complex challenges that will be the hallmark of this century. We must change these systems in order to be able to create and manage the new policies that will be needed. But even if every individual government were to be well positioned, there is no *collective* capacity in existence able to handle policy for the emergent, massive, complex, global issues that are coming towards us. The elements of such a capacity include systems to provide policy makers with continuous use of foresight methods to scan trends and possible events, especially those likely to have the strongest long-term

impact, and the use of feedback systems to examine whether policies in force are producing results in line with expectations at the time of their adoption.

We will also have to deal not only with shortcomings in the design of systems of governance, but with problems arising from human nature, for example:
– A strong tendency to focus on short-term problems, and to disregard long term consequences – often justified on grounds that the latter are unknowable, although the true reason may be that it is politically inconvenient to deal with them.
– A policy-making "culture" comprised of activists who build their reputations by propounding unitary visions of the future, versus a foresight "culture" comprised of scholars who aim to explore multiple futures, each with approximately the same level of plausibility. And,
– The tendency of substantive experts and policy elites to short-change democratic processes, thereby leaving the people out of discussions that profoundly influence their futures, which has the effect of starving these policies of legitimacy and staying power.

Role of the policy-makers

We often conflate the roles of the many in government who work as professionals in formulating and implementing policies, with separate roles of the few who actually decide among these choices, in the knowledge that they bear personal political responsibility for the consequences. The latter actually make policy, and if they lack vision, courage and tenacity, then all the expertise of those who support them will count for little. Those American leaders who have presided over periodic major reforms of *systems* of governance in the United States, have not done so out of a fascination with process. Rather, they understood that the times demanded new kinds of solutions to unprecedented problems, and that these solutions could neither be devised, nor implemented without upgrading legacy systems of governance. Today's emergent meta-issues require that policy-makers must now think in similar terms about the reform

of global systems of governance. They must, in other words, take on the responsibility for taking the systems and processes of governance to the level needed in order to meet the requirements of planetary security in the twenty first century.

Establishing anticipatory governance at the planetary level: practical steps

Anticipatory governance is a scalable process, meaning that it can be designed and operated at every level from municipal to global. At every level, however, there is a common requirement for political leadership, without which nothing will be accomplished no matter how much time and effort might be expended by experts. Political leaders must not only commission experts to do their work, but must also involve themselves in the process as true

participants, bringing genuine questions to the table rather than pre-conceived ideas. One way to start this process would be to introduce the question of governance for the management of meta-issues, as agenda items at international fora that already exist to deal with complex meta issues. In other words, governance methods for meta-issues would become a topic for consideration at the highest levels, in addition to the normal agenda comprised of specific policy issues. I would suggest that this process could be triggered by the UN Secretary General, although it should definitely not be allowed to become part of the United Nation's normal bureaucratic process. Rather, the Secretary General should recruit participants at the political level, to be facilitated by a sherpa-like process. The primary objective of this process would be to work on measures to combine systematic foresight for longer range issues, with ongoing policy work dealing with near term demands for applied governance.

About the author

Leon Fuerth served for eight years as Vice President Gore's national security adviser, in the course of which he regularly participated in discussions at the national level dealing with security, economic and technological issues. Before that, he held senior policy-related positions as a Foreign Service Officer in the Department of State; then as a senior member of staff for committees in both the House and Senate; following which he taught courses on the role of foresight in governance as a professor at the graduate level in the Elliott School of International Affairs at the George Washington University, and at the National Defense University.

For more of Leon Fuerth's work on Anticipatory Governance please visit www.forwardengagement.org.