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Congress and the Climate Crisis: A Case for Forward Engagement

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America's lasting contribution to the world is not just the idea of popular democracy, but the ongoing demonstration that it works: that free citizens have not only the inherent right to govern themselves, but the capacity to do so. These claims have been tested in every period of our national existence. Today, they are challenged by an accelerating rate of profound social dislocation, wherein powerful domestic and global forces continuously and vigorously interact. Climate change is one of the most potent of these forces: already viewed by some as the central crisis of our era. In times of crisis, there is a strong temptation to be dismissive of the role of the Congress, and for power to shift decisively towards the Executive Branch. It is true that only the President can provide vision and coordination for national policy: but only the Congress can provide the imprimatur of the public's will, and only the Congress can – in the public's name – force presidents to remember that even in crisis, we remain a republic and they do not become sovereigns.

This paper examines the problems that Congress will have in legislating for global warming. It will argue that these problems are best understood as a subset of an array of complex, emergent issues, which singly and collectively are challenging the adaptive powers of representative democracy. It will also argue that the best response to complexity is to reorganize governance as a networked system. Finally, it will argue that Congress – rather than the Executive Branch – has the most important role in bringing about the necessary adaptations. In short, this paper will argue that we must find a way to match the capacity of democratic governance to the demands of extreme complexity. I call this approach to governance Forward Engagement. It is the basis of my teaching at the George Washington University, and it is also the substance of a project which I am directing thanks to financial support from the Rockefeller Brothers Fund, and the George Washington University.

The Legislating for the Future Project is an initiative of New York University's John Brademas Center for the Study of Congress and the Organizational Performance Initiative, and is co-sponsored by the Brookings Institution and the RAND Corporation. The project will examine the capacity of Congress to address long-term problems facing the nation, probe the public's attitudes towards Congress' ability to make long-term decisions for the 21st Century, and analyze specific long-term policy issues. The Legislating for the Future Project will convene experts for discussions of specific long-term issues, such as global warming, and seek to generate strategies to make Congress more flexible and adaptive to future problems. The Advisory Committee for the project is headed by Former Representative Lee H. Hamilton. The project is funded by the John Brademas Center for the Study of Congress, the Smith Richardson Foundation and the Carnegie Corporation. For more information, please visit: www.nyu.edu/wagner/performance and www.nyu.edu/brademas.

Complexity and Organization

There is a relationship between how information is organized, and how it can be acted upon. Often, that relationship is long-standing and accepted as the natural order of things. It is necessary, however, to consciously analyze the structure of a problem in relation to the structure of the systems to be applied to deal with it. We are clearly in a period when a re-examination is needed. Our legacy systems of governance continue to reflect information about a world that has passed, and are not well suited to respond to the worlds that are coming.

During the Cold War, the government of the United States faced problems which were essentially hierarchical in structure. At the apex of this structure was the US-Soviet conflict, and to a considerable extent, all the rest was treated as subordinate or derivative. This hierarchy was reflected in, and reinforced by, the structure of our systems for planning and executing policy.

In the 21st century, we face an emergent new class of problems that are not hierarchical, but rather conform in their structure and dynamics to systems described by complexity theory. Issues that are complex have certain hallmarks: they represent the effects of a system in motion, wherein all parts influence and are influenced by all other parts, more or less concurrently, and permanently. Responses to such problems require an understanding of their dynamics, including an awareness that actions addressed to any part of the system will generate consequences throughout the whole. This new class of problems tends to be fast moving and unstable, in the sense that trends and events interact spontaneously, with the result that surprise can outpace societal response. In complex systems, inputs and outputs are not only unpredictable but on occasion, highly non-linear: that is, seemingly small events can lead to massively consequential results. Such systems do not tend towards stability, and in fact harbor the possibility of collapse. There are no permanent solutions for problems arising out of complexity: instead, problems mutate and require permanent management.

These qualities present a severe challenge to our formal systems and to our traditions of democratic governance. We artificially distinguish between domestic and international policy, although there is no way to understand either in isolation. We tend to discount the future in favor of immediate concerns, ignoring the ramifications of our short-term decisions for our longer-term interests. Despite our awareness of the need for integration, the formation and execution of policy are distributed among poorly articulated bureaucracies. These tendencies within the Executive Branch are reinforced by the Congress, which has no institutional mechanism of is own for long-range, comprehensive analysis (the Congressional Research Service does not serve this purpose); and which designs legislation in ways that reinforce the very barriers among Executive Branch agencies that it so often investigates and deplores. Both the Executive Branch and the Congress habitually tout policies in the guise of perfect solutions for temporary problems: rather than as inherently temporary responses to permanently mutating problems.

Global Warming

Global warming has all the earmarks of a complex phenomenon, capable of severely challenging our existing approaches to governance.

■ The difference between near and long term has collapsed. Even if major environmental consequences are relatively far off, we are going to be making irrevocable choices about them in the near term. Response to the challenge of global warming cannot be spread out across the next century, but rather must be set in place in the next decade, in order to have any chance to meaningfully alter the slope of the curves one sees in the Intergovernmental Panel on Climate Change (IPCC) report. We are already in the midst of choosing among alternative futures. The onset of these choices is rapid, and the consequences are likely to be irrevocable. Duration is permanent.

■ The distinction between domestic and international policy has collapsed. Unlike any other challenge the United States has faced, this is one where "we have met the enemy and it is us." Our society and its lifestyle are by far the largest contributors to the environmental crisis ahead. We may point out that we have growing rivals in China and India, but the way out of this problem will be led by the United States, or it will not be found. Our leadership, however, cannot be hortatory: it must be by example. The stewardship of the environment becomes a task as fundamental as provision for the physical defense of the United States. The scale is and cannot be merely national. It is global.

■ The problem has no final solution: A common error in thinking about global warming or climate change is that it will be possible to deal with this problem on a one-time basis: that adjustments, however painful, can be made and thereafter, the problem will recede. It cannot be that simple. Advocates of action to mitigate climate change are really saying something that has quite different implications. They are saying that since we have the power to permanently interfere with natural cycles, we are permanently in charge of modulating them. This may seem preposterous, but we are already engaging similar issues involving ultra-long range management of the consequences of our technologies. Disposal of nuclear waste, for example, requires containment and safety measures that are commensurate with the half-lives of radioactive materials: often on the order of scores of thousands of years.

■ The problem is non-linear. There is little room for doubt that global warming is occurring and that human activity is the prime cause. What remains in doubt is the rate at which this change is occurring, and its maximum extent – taking into account the downstream effects of palliative actions, including their rate of onset and magnitude. Within the range of possibilities is the risk of abrupt, extreme shifts in climate with profoundly disruptive consequences for civilization. Based on this uncertainty, there is now some debate that pits those who advocate immediate action to mitigate the problem by addressing its root cause, against those who advocate immediate action to adapt to what is already irrevocably on its way.

Congress and Global Warming

Climate change will test the adaptive capacity of democratic governance, in the face of challenges that will be unprecedented in form, scope and duration. Members of Congress will have to deal with issues that profoundly shape the economic interests of their constituents, in ways that are irreconcilably cross-cutting. Many of these issues will address the problems of adaptation to the consequence of climate change: damages to property and livelihoods owing to storms of increasing intensity and frequency; relocation of critical infrastructure; underwriting major engineering projects for the protection of urban areas and other regions that are too important to lose, but too costly to move; and dealing with major shifts of population and production (agricultural, mainly) owing to changes of climate.

Other sets of issues will have to do with longer range mitigation: investing in breakthrough technologies such as carbon sequestration, a switchover to hydrogen as a prime fuel source, developing regulations to create market conditions that advance the absorption of these technologies; and managing the economic and social costs of transition. Congress will experience strong political riptides as the politics of oil, of gas, of corn-based ethanol, of nuclear power, of solar power, of locally networked wind-power, of domestic vs. foreign offsets, and of conservation and mandatory standards all swirl about. At stake will be the futures of whole regions and the fates of both established and new industries.

Every dimension of climate change will have consequences that are expressed in the Federal Budget. The issue of "who will pay," may be particularly severe because it will be inter-generational. Costs for Social Security, Medicaid and Medicare are already projected to rise so steeply as to generate unsustainable levels of debt over the next twenty years, raising very serious considerations about the fiscal stability of the United States. . Costs for dealing with climate change should be thought of as a wild-card in what seems destined to be nearly chaotic situation. Funding the transitions that are needed to come fully to grips with climate change will mean imposing sacrifices on both the older and younger generations, and on all other priorities of government.

Economists often still view environmental costs as "externalities," but that is a limitation that distorts the emerging reality. The Stern Review on the Economics of Climate Change, a study undertaken on behalf of the UK government, makes it clear that even at lower levels of impact, global climate change will entail costs that make it a part of the core of any worthwhile economic model. Moreover, if these costs are ignored, we are warned they will escalate rapidly due to the non-linear character of global climate change, until they overwhelm economic and political systems. A new, major budgetary imperative is coming into existence.

It is also possible that responding to global climate change will open the way to entirely new and vastly profitable avenues of development for the economy of the United States. Aside from returns on investment in new technologies that are specifically aimed at climate change, there could be great benefit in renovating components of the national infrastructure that urgently need attention. "Intelligent" highways that modulate traffic through

continuous interaction with “smart” cars, could substantially improve fuel efficiency by reducing delays and idle time. The ramshackle national power grid is another example. Greater reliability and higher efficiency could be combined in the development of a truly modern system. We are falling dangerously behind other countries in extending broadband service to all parts of the nation. In countries where broadband is well advanced, there are major savings from reduced transactional costs as the people move more and more of their activities on line.

Possibilities such as these can only be realized, if government creates conditions that encourage them. In that process, the Congress would be indispensable. Dealing with the domestic consequence of climate change will be a massive undertaking, economically and socially. A visionary administration might be able to propose plans on this scale, only to have them picked apart by a Congress unable to internalize the same vision, or to deal with it as a synergistic unit. On the other hand, Congress – not the Executive Branch – is where the politics of national consensus must take form and be sustained.

The costs and perhaps the benefits of engaging global climate change will inevitably benefit some and disadvantage others. It is inevitable that Congress will be engaged in an unending struggle over how these effects are distributed. These struggles will sort themselves out along familiar ideological lines and become an integrated part of the legislative agenda. .

Congress will also have to face issues and costs arising from the global nature of climate change. There will be new military missions arising from stresses induced by climate change. These may include internal dislocations leading to state-collapse, or regional disputes leading to international conflict. There will also be difficult problems owing to what might be termed “environmental refugees.” Congress will have to be involved in the inevitable downside to many climate related initiatives. Only so much corn can be converted into ethanol before the price of foodstuffs is affected, and that in turn will be felt by the less well off in the United States, and even more so by the poor, globally .

It will be Congress’ responsibility to develop a unified framework for domestic regulation and compliance with international agreements regarding climate change. Regarding domestic regulation, Congress will have to deal with states that begin to pursue their own environmental agendas, either individually or regionally, at expense to Federal authority. We can expect issues to arise when international standards conflict with not only federal but state laws in the US.

There will be pressures to establish new international bodies to deal with the environment, some with decision making powers. Trade agreements may include provisions relating to the environment, with penalties for non-compliance. Large political/economic blocks like the European Union (EU) will attempt to exert direct pressure on the US to force compliance with EU environmental standards. The UN Security Council may become a factor in environmental disputes, as might the International Court of Justice. The Congress will often be bitterly divided between those who are ready to back new international systems or to

expand the authority of old ones, at the expense of American autonomy, and others who will see the same process as the end of democratic governance. A new element here will be contradictory pressures from business, some of which crave the certainty of clear federal standards, while others seek unlimited ability to operate without federal intervention.

Global warming cannot be dealt with successfully on the basis of unilateral action by any single government. If that is true regarding initiatives taken by the executive leadership of a government, it is true of legislative initiative as well. The Congress can work with the President to create a national approach to global warming that fits within the framework of a global approach. But Congress cannot legislate for the globe. The Congress' reflexive instinct to draft laws that are intended to operate extraterritorially is based on a power relationship between the United States and the rest of the world which is a thing of the past. Closer and more creative inter-parliamentary ties are going to be important for maintaining the relevance of representative government in all democratic countries, as every one of them struggles to come to terms with global climate change.

Presidents will be under pressure to negotiate international agreements bearing on climate change, and are likely to ask Congress to create authorities similar to those which exist for the negotiation of trade agreements, whereby the Congress relinquishes its authority to amend, in favor of a straight up or down vote. Congress may, in the end, find itself unequal to the task of making all these tradeoffs – and will be held responsible by the public for delaying vital responses to climate change. In response to this, the Congress may find it acceptable to offload some of its responsibilities to an autonomous agency dedicated to global environmental management, much as it did in the last century by assigning major authorities for international trade negotiations to independent agencies, such as the US Trade Representative.

The Congress' ability to deal with global climate change would appear to be even more limited than that of the Executive Branch. Congress has become so weakened by extreme partisanship as to make it an unlikely place for shared, durable long-range vision, and for patient development of policies that might be pursued tenaciously over time, rather than set up and ripped down in rhythm with our electoral cycle. But failure in the face of a major crisis such as global climate change is not an option when success is actually possible. There are multiple ways to refurbish and update the Congress that are compatible with its responsibilities as defined by the Constitution and its operations as shaped by the force of custom. And there is always room for optimism about a body that has managed to preserve itself as the voice of the people for two centuries. However, actions we take (or do not take) over the next decade will have a very strong and most likely irrevocable impact on how profound global climate change turns out to be. It needs to be understood that this is a test of democratic governance as severe as any ever faced by the Congress.

As a Research Professor at the George Washington University, I have been struck by the disproportionately little amount of attention that the Congress receives, at the theoretical level, as compared to the Executive Branch. It is an imbalance that reflects the distorting effect that the Cold War had on the relationship between the branches of government. The

new class of long-range, complex problems that is approaching actually suggests the need to redress that imbalance. I work with graduate students and advanced undergraduates, almost all of whom are preparing themselves for careers in government. My students have been developing increasingly sophisticated ways to analyze complex interactions among trends and events. They have also developed proposals for increasing the capacity of governance to deal with complexity

Despite differences of emphasis and design, certain commonalities emerge:

The students recommend that Congress establish by law an entity that would serve the institution as a whole by performing long-range assessments, designed to spot complex issues as early as possible. They believe that this process should be carried out by non-partisan staff, selected for expertise.

Students do not believe that the Congressional Research Staff is appropriate for this purpose, and while they think that Congress' action to defund the Office of Technology Assessment (OTA) was a mistake, neither do they think that a restored OTA would serve the purpose they have in mind.

Evaluations by the proposed new entity should be on a continuing basis, but with an annually benchmark where conclusions would be placed before members to help inspire longer range considerations of policy. There has been some debate over whether each body of the Congress should set up an independent system or create a collective resource.

Students believe that a special committee ought to be established within the Congress to serve as link-point between the Congress and the work of the analytic staff. Some have argued that the committee should have substantial power, including the ability to initiate legislation. Most students, however, have felt that links between the findings of the analytic staff and the Congress should be respectful of existing committee authorities and jurisdictional patterns.

Students recommend that there be some form of liaison function with the Executive Branch, but they are concerned that this relationship not enable the White House to distort findings. They believe in any event that the Executive Branch should establish its own version of a long-range analytic group, operating from the White House under presidential authority. All student recommendations include the idea that analytic staff must consult broadly with outside specialists and interests groups, and that attention should be paid to the establishment of a public dialog.

For good reason, students have wondered how to encourage the Congress–an institution notorious for its short span of attention – to sustain policies that address complex issues over long periods of time. One very interesting proposal devised by the students is called Component Level Implementation Process (CLIP). I include a description of CLIP as written by the class that suggested it. It is worth noting that the first student application of CLIP was

to demonstrate how it would be employed to guide the establishment of a US economy based on hydrogen as a primary fuel stock.

> CLIP breaks complex problems into manageable pieces, turns those pieces into policy recommendations, and then translates the recommendations into legislative language and timelines. CLIP's success depends on describing a desired long-term end state and developing a series of short-term steps to achieve it. It is important that each component be valuable in its own right and can stand on its own so that benefits are achieved regardless of whether or not the final goal is achieved. CLIP mitigates the political risk inherent in introducing legislation when the final results may not be seen for decades. To illustrate the merits of this approach we use a case study — Kick-Starting the Transition to a Hydrogen Economy....Congress has been reluctant to pass measures that address such a long-term objective.... CLIP ... aims to counteract this tendency by breaking down the long-term goal of kick-starting the transition to a hydrogen economy into progressive short-term legislative steps which offer substantial stand-alone benefits.[1]

There will always be tension between the need of the Congress to deliberate, and the nation's need for government to deal expeditiously with problems arising from climate change. The scale and rate of onset of these problems will be a basic factor in determining Congress' chance to meet these challenges successfully. The more extreme the environmental scenario, the greater the chance of failure. We need the apparent messiness of representative government as a way to sort out and correct error, and as a means to block the tendency of presidents to develop autocratic habits. When civil governance fails to deal with crisis, there are default options that might otherwise seem unthinkable. Climate change will produce a succession of concurrent crises. The aftermath of hurricane Katrina, which saw a public clamor for military intervention to replace a disorganized and inept civilian presence, is a cautionary tale. Legitimacy is based, in the end, on performance.

Equipping Democracy for Complexity: Forward Engagement

> U.S. governance is systemically myopic: it focuses on what is immediately before us, and defers action on what is coming next, regardless of how big or how fast those oncoming developments may be. The tempo of major events is accelerating, while lags of perception and response have diminished the capacity of government to react. Forward Engagement is a method for addressing this deficiency. It aims to identify major potential developments originating further in the future than we normally think about, and to assess policy responses early on in the belief that it would be more effective to engage the future sooner rather than later.[2]

Global climate change is not the only societal challenge ahead of us. Last April, the Forward Engagement project organized a conference to examine massive, complex issues for

[1] Fall Report on Forward Engagement. The George Washington University. 2006. 45.
[2] Fuerth, Leon. Forward Engagement: a New Wrinkle, in Time? The George Washington University. 2004.

governance under the title of "Societal Tsunamis." Three examples were presented by experts:

- Geopolitical Inversion: Geo-economic power shifts massively and permanently to Asia, breaking the link between liberal democracy and economic primacy. Presented by Mr. Clyde Prestowitz, founder of the Economic Strategy Institute.

- Environmental Dislocation: Rapid climate change breaks fundamental links between industrial civilization and nature. Presented by Dr. David Jhirad, Vice President for Science and Research at the World Resources Institute.

- Evolutionary Secession: Science and technology give us control over our own evolutionary future through manipulation of genetics and by way of symbiosis with machine intelligence. Presented by Dr. William Bainbridge of the National Science Foundation.

These trends are individually worth close attention. However, there is an additional element: the cumulative challenge to democratic governance that is represented by changes of such magnitude and speed. Our system of governance was designed to be slow, in order to permit time for reflection, and to protect the opportunity for real debate. But that very quality of deliberativeness puts democratic governance at risk in the face of unprecedented forms of complex change.

The most effective response to increasing complexity in the problems facing governance may be to develop a networked, light-weight (small, flexible), task-oriented, managerial supra-structure designed to be "retro-fitted" to the existing system. This supra-structure should be created to supplement rather than displace existing methods. It should be allowed to "grow" not only as a management system, but as a culture. Its value-added would be to compensate for the innate tendency of all bureaucratic organizations to subdivide issues rather than to integrate them. Where the bureaucracy creates and defends "stove-pipes" along jurisdictional lines and along substantive boundaries, the new system must synthesize: it must also abolish two of the most important barriers to policy-making for complexity: the barrier between what is domestic and what is foreign; and the boundary between what is imminent and what is long-range. The objective for governance as a whole should be to use systems-theory and systems-support technology, to create "positional awareness" in the formation of policy and in its execution.

Changes in the processes of the executive branch need reciprocal changes in the processes of the Congress, in order for these two branches to have a more coherent dialog about national responses to complex issues. My students have produced a number of quite different ideas for accomplishing this, but there is a common denominator: the establishment of autonomous systems in both branches that are mandated to think long-range and cross-category, and that have the means to communicate not only with the President, and/or the Congressional membership, but also with the public.

The key to reforming processes in both the Executive and Legislative Branches is to organize according to mission rather than according to jurisdiction. Organizing according to mission means that ad hoc arrangements become the norm: that such arrangements become the preferred, rather than the default organizational response to complexity. We require systems of organization for government as a whole that promote: earlier detection and response to both opportunity and error; alertness to interactions across substantive boundaries; and in particular, the ability to organize and apply long-range foresight (defined as a systematic effort to understand consequences) as a new and crucial dimension of governance.

To accomplish this kind of governance will require not only new systems, but a new type of bureaucracy. For almost thirty years—since the Goldwater-Nichols Act—the uniformed military has been working to train an officer corps capable of leading "seamless" operations across all the environments in which combat takes place. Until recently, no such effort has been expended on civilian governance, even in fields closely related to defense against physical attack or natural disaster. The absence of a culture of joint-ness was one of the main causes for the failure of the US intelligence community's failure to respond to warnings of what became September 11th.

To make networked governance possible it will be essential to redefine civilian career patterns to require exposure to joint planning and joint execution of policy. It will also require a refocusing of training at the academic level, which in its present form, propagates a segmented approach to the understanding of events which contributes to very costly errors in governance. Specialized scholarship and expertise are essential, but there is also the need to work harder to break down rather than to reinforce the walls that separate one field from another.

The capacity to form adaptive plans makes it possible to survive inevitable encounters with the unexpected. It follows that we need a training system capable of allowing policy makers to experience and test themselves against complex circumstances. Such systems exist for combat training of commanders. They need to exist for civilian government. One important place to begin would be the US Civil Service, which in its quiet way is actually one of the great successes of American governance. The ranks of the Civil Service are going to thin substantially as employees who were recruited en bloc, retire en bloc. Because of this we have a great opportunity (also a necessity) to think through how to recruit, train and develop a Civil Service equipped for complexity in the 21st century.[3]

The Executive Branch is already trying to shift towards the ideal of a more integrated approach to policy formation, with initiatives such as Project Horizon.[4] What will also be required is a changed approach to the execution of policy. The US military is deeply committed to this kind of change, as the core of what is known as "net-centric warfare." This term is meant to capture the idea of a flattened form of organizational network,

[3] Fuerth, Leon. "Strategic Myopia: the Case for Forward Engagement." The National Interest (2006).
[4] Kaplan, Sid. "Project Horizon - a New Approach to Interagency Planning." Federal Times 13 Feb. 2006.

conducting very complex operations, where coherence occurs because of the presence of: (1)a strategic concept, clearly articulated by senior leadership and understood at all levels ; (2) information flows that support initiative at lower levels; (3) feedback at every level to allow continuing interaction and situational awareness within the group; (4) something very like complex adaptive behavior towards realization of the goal (mission); and (5) a culture within the organization such that its members are able to self-organize, rather than await instruction from above.

As applied to the civilian component of government, this new approach might be called Parametric Management. Parametric Management would be organized around defined measures of progress towards goals related to statements of policy. It would rely on information about consequences (negative feed-back loops) to suggest the need for modifications of execution, if not changes of underlying policy. It would require management systems organized to make sure that such information is fused rather than compartmentalized. It would continuously search for major unintended consequences of policy, preferably by the use of foresight techniques, rather than by leaning the hard way from events after the fact.

Parametric Management would require changes in the way Congress goes about its tasks. Legislation would take into account of potential alternative consequences, and provided for latitude to react to them. Oversight procedures would evolve accordingly. Strong efforts would be made to encourage the Executive Branch and the Congress to express intent using the same language, as opposed to the current arrangement, whereby coherent initiatives from the Executive Branch that speak to purpose must be deconstructed into Congressional language that speaks to budget numbers. Congressional leaders in both houses would use existing authorities to separate complex legislation into smaller packets for processing through the committee and subcommittee system, later to be reassembled into comprehensive final bills.

Congress is of central importance to any process of adaptation. There is, however, a strong tendency in the Congress to impose outmoded rather than new forms. The typical Congressional response to complex issues is to push for greater, rather than less centralization. In the 90s, there were frequent calls for the establishment of “tsars” to deal with issues such as non-proliferation, and drugs. In this decade, the same kind of thinking was applied again in the case of homeland security, and the restructuring of the intelligence community. Tsars respond to a Congressional imperative to be able to pinpoint responsibility for the management of an important public interest. However, “Tsars” by their nature run hierarchies and hierarchies develop into new layers of bureaucracy that compound many of the organizational problems they were thought to remedy. The Congress’ model for good organization appears to be the top-down model of management that was typical for US industry during most of the last century. Ironically, this is the model that the private sector has abandoned, in favor of networked corporate management.

Networking is society’s best organizational response to complexity. Networking is fortunately, also a form of social action that is profoundly well suited for democratic

governance. Networking depends upon the existence of intelligence and initiative distributed throughout the system. It also depends upon the existence of a collaborative ethos, whereby an instinct for team-work operates as an offset to the natural search for individual advantage. Democracy has always required faith that these qualities would serve social as well as individual needs. And it has also always required far-sighted investment in the education of individuals for their rolls as citizens. The challenges of complexity now require that we systematically adapt our systems of self-governance in order to preserve them. The sooner Congress moves in this direction, the better.