

## **"Networking and the Future of Democracy: Mastering the Future Before it Masters Us"**

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Since this is my last public lecture as a Shapiro Professor, I want to begin by thanking the university for giving me a home and an opportunity to build a new perspective. In particular, I'd like to thank the faculty – as represented by you, Dean Harding – for the welcome they have given me and for their openness of mind. To tell the truth, I feared when I came here that the faculty would soon conclude that I was a mile wide, but only an inch deep. Instead, I found that my new colleagues were genuinely interested in my ideas about subjects in which they are profound specialists.

I also want to make a brief mention of the Shapiro process, itself. I've been in some really impressive company. The list of my predecessors includes Abba Eban, who passed away just a few days ago; the eminent author and historian, Ronald Steel; the former Chairman of the Joint Chiefs of Staff, Admiral William Crowe; and the distinguished Senator from Tennessee, Jim Sasser, who also served as United States ambassador to China. My successor will be the former president of Costa Rica, Miguel Rodriguez, who is going to bring extraordinary depth and vitality to hemispheric studies here at the Elliott School during his tenure. And of course, there are Shapiro professors in other parts of the University, in addition to the Elliot School. So this is a program that has brought an unusual amount of richness to the life of the George Washington University, and it seems right that as I depart from the program, I should salute it and remind people of its value.

Now, I want to spend a little time explaining to you what was on my mind as I began my own work here, two years ago: how I came to the themes I intend to talk about tonight.

Late in the last administration, I -- and for my friends sitting here who have heard this account before, my apologies -- I began to feel that history was accelerating: that major events seemed to be approaching more rapidly, and that we were left with less and less time to understand their implications. One day, for example, I attended a cabinet-level meeting of the National Economic Council on the subject of genetically modified foodstuffs. Here was a subject previously to be found in the science pages, which had rapidly become a major international trade dispute, upon the outcome of which rode perhaps hundreds of billions of dollars ... and quite possibly the ability of the planet to sustain us. As for the present administration, in the time before there was a war on terror, you will remember that the president, newly in office, spent weeks closeted with advisers talking about stem cells.

It occurred to me that we needed to begin paying more attention to the longer-range future, in hopes of alerting ourselves earlier to possible major events, and giving

ourselves more lead-time to think through consequences and policies. Or to put it another way, I became convinced that we needed to at least try to take action sooner rather than later, in anticipation of some of these possibilities. I coined a term for that kind of approach, calling it Forward Engagement. To illustrate the range of issues that one might wish to engage at longer range, I pointed to subjects such as global pandemics, international terrorism, international proliferation of weapons of mass destruction, international syndicated crime, and so on. But even as I pointed towards such issues, it was clear to me that they were no longer pure examples of things yet to happen. Perhaps they had been when first detected a decade or more previously, but by the year 2000, they were already as much in-being as in-prospect. Therefore, I began to speculate whether there might be a next generation of similarly important issues, further out in the future, not yet well perceived, but of potentially major consequence, and moving towards us with increasing speed.

At the time, these speculations were against the background of an ongoing presidential campaign, and it was very much my intention to try to set up a long-range issues process as an innovation in the next White House. But things did not turn out that way. On the other hand, my work at GW has given me the opportunity to continue to think about how to meet the challenge of trying to make sensible policy decisions about the longer-term future. Basically, I took advantage of my opportunity to work with successive classes of graduate students to try out the concept in the form of a simulation. Each successive class has been presented with a letter from an imaginary President of the United States, mandating them to operate as a blue-ribbon commission. Each of these letters stipulated concerns the President had concerning possible long-term developments in four basic categories: science and technology, economics, security, and governance. Each letter also asked for advice about how to improve the ability of the Executive branch to think at longer range.

Finally, the output of each class was always made available to its successor as a preliminary input, in the hope of encouraging progressively more penetrating and creative analysis. This theory of operation turns out to have been correct, and as a result, there is a sense of cumulative progress from one semester's class to the next. So much so, in fact, that over time it seems as if the exploration of Forward Engagement is proceeding in discrete phases.

Let me give you a very brief overview.

Students looking at science and technology were struck by the revolutionary potential of such developments as nano-technology, genetic engineering, and highly advanced computing – particularly the notion “quantum” computing. In these things, they saw an accelerating mastery over nature beyond all our experience and probably beyond our ability to anticipate. In many ways magnificent, but in many ways, fearful.

In economics, students have of course been looking at the longer-term possibilities that globalization might bring: either in the case of its failure, in the face of mounting fear and political opposition, or in the case of a success all too perfect – leading to a world ruled

by the invisible hand of vast corporate networks, effectively answering to no government and to no electorate. Students were also concerned about surprise in the financial system, noting that there are forces at work there that are huge, volatile, and under little real control.

As for security, students have naturally been concerned about so-called asymmetric threats, by which our massive advantages in military power could be neutralized. After September 11th, they could hardly do otherwise. But, in addition to that, they have also focused on the longer-range transformation of American military force, and in particular, on the concept of “net-centric” warfare: a concept brilliantly developed by Admiral Arthur Cebrowski (Ret). Net-centric warfare explores the impact of highly advanced information technology on the management of combat operations.

In the area of governance, students have been particularly interested in the implications of certain major demographic trends. They came across an excellent CIA unclassified study called: “Long-term Global Demographic Trends: Reshaping the Geopolitical Landscape,” and another called “ The United States in the Third-World Century: How Much Will Demographics Stress Geopolitics?” These and other studies point towards developments that may take fifteen years to mature, but which require policy decision and action in the present. Students have also been examining the possibility that over time, the United States will be forced to cede more and more of its autonomy to multilateral institutions, in a trade-off between our ability to make our own way under the Constitution, and the need for more stability/security in the world at large. As a subset of the stability/security issue, students have been particularly concerned about long-term erosion of American liberties in exchange for safety. They have been especially concerned about the interaction of advanced information technology and concepts of privacy that under gird our sense of what liberty is all about.

All of these trends were visible in the students’ work by the end of the first semester (Spring 2001). Similar themes, with some significant variations, were to appear in the work of subsequent classes. But in the second semester (Fall 2001), students became aware of something else that they considered to be cross-cutting among the categories: the concept of the modern networked organization and its impact on the rate of change and on the structure of organizations. It’s an extremely important subject.

My students came across the subject of networking in a book, *Networks and Netwars*, written by RAND Corporation analysts John Arquilla and David Ronfeldt. *Networks and Netwars* is a comparative analysis of the implications of networking for such diverse kinds of activity as civil society, corporate structure, international crime, and international terrorism. The idea is that a modern network, that capitalizes on the characteristics of computer-based communications, leads to radical changes in the way people organize to get things done. In general, hierarchical structures give way to those that are flat and highly adaptable to changing requirements. Al Qaeda is such a network. And a primary characteristic of networks vs. traditional government is that the network outruns bureaucracy, every time.

My students realized that networks were having a profound impact on every aspect of human activity, and that they are in part responsible for the acceleration of events that is one of the premises of the course. They also realized that the government of the United States is much less networked than it ought to be, if it hopes to be able to deal with changes of the magnitude and speed we are experiencing. This insight was based on experiences my students were having in their day-jobs in state and federal government, on the Hill, and in many parts of the Executive branch. They feel very strongly from what they are observing at first hand, that government should deeply apply networking principles if it wishes to remain able to serve the people effectively.

And so, the students came to their first conceptual breakthrough, in the form of a suggestion for creating an entity in the Executive branch which would simultaneously respond to the “president’s” call for an innovation relating to Forward Engagement, and to the felt need for a pilot project in applied networking. They proposed to establish an entity, which would be called the Office of Technological and Strategic Assessment (OTSA). Most of us probably remember that there was once an Office of Technological Assessment (OTA), which served the Congress. OTA was run by a bi-partisan board of members of Congress, and would respond to requirements for advanced analysis that would come from that board. OTA’s relatively small core staff would quickly bring in a specially designed crew of experts to move these studies along. The product was well respected for detail and for creativity.

Unfortunately, Congress de-funded OTA about fifteen years ago, and there has been no successor. My students, however, felt that their brainchild – OTSA – would bring something important back to government. It would provide an institutional system designed to look ahead continuously at longer-range than is the norm, to continuously refine and modify assessments over time, and similarly, to think ahead about policy responses that might be effective in modifying the way in which the future unfolds.

Students in the third semester (Spring 2002) continued to rework and refine conclusions handed on by their predecessors. But they also made innovations of their own. First, they became aware of a concept we are calling “differential timing.” The idea is that there are classes of events that develop in quite different ways: an idea we owe to David Rejeski of the Woodrow Wilson Center. His work shows how some events notionally develop in a manner that could be graphically suggested by a straight line with a constant slope. Other events can move in step-like fashion, or along curves that are practically logarithmic, and some events might represent a discontinuity in human experience, so that they would have to be represented by a broken curve, since there is no previous model to show what is going on. The idea of a discontinuity in human experience suggests itself very strongly when one looks at the kinds of things that tend to originate from science and technology.

The third semester’s other breakthrough occurred literally in its last hour of operation, as the students presented their findings in a power point briefing for a friend I persuaded to come in and impersonate the President: in this case, former national security adviser, Sandy Berger. Sandy, after hearing about OTSA, asked the students: “ Why, in the 21st century would you propose a new brick-and-mortar kind of institution? Shouldn’t it be

highly networked, itself – a virtual institution?” That recommendation was very important in the work of the fourth semester (Fall 2002), which is nearing completion. I’ll return to it.

The current semester has been rich in new ideas.

On the substantive side, the students have added neuropharmacology to their list of big-ticket changes in the human condition. We owe that to Dr. Francis Fukuyama at SAIS, and his recent book, *Our Posthuman Future*. Fukuyama is talking about our already considerable – and rapidly diversifying capacity to modify human behavior through drugs. Never mind waiting until we can pick and choose the genetic composition of our offspring. We can already modify what our children are like, or what we are like – for that matter - by taking the right substances.

Fukuyama, of course, is famous for an essay he wrote back when the Soviet Union collapsed, when he declared the end of history, or at least the end of the history of political evolution. Now he says there is a need to re-examine his central premise. So long as it can be postulated that there is some core, universal model of human nature, then it is possible to reason about human political behavior. But if human beings acquire the ability to modify their own nature, then any analysis about politics has to be reconsidered. There are some who believe that genetics will place it in our power to alter human nature itself, and Fukuyama doesn’t challenge that. He merely points out that we are already able to change human psychology in profound ways through pharmacology, and that this requires us to take a big step back and start debating whether we are changing the very nature of what it is to be human. Because if we are, then the foundations of all political analysis are undermined. History may not have ended, after all.

The students have also begun to wrestle with the subject of complexity. They began to see that single-strand issues interacted with other issues, and at the point where these things interact - let’s say demographics and the environment as a simple example - you get a kind of node which may be packed with more meaningful potential for change than either of the original forces, in isolation. It’s not enough just to know about changes in the environment. It’s not enough just to know about demographic trends. It’s not enough just to know just about economics and so on. Somehow, you have to be able to think about all these things interacting with each other. For this purpose, my students felt that the original four-part framework I gave them was too confining. If you analyze complexity by breaking it down into constituent parts, then you miss the interaction among the parts, and the interaction is where the richest meaning is to be found. And one of the things that is happening is that we are improving our capacity to understand these interactions. It’s tough work, but my students have begun to grapple with it.

As a major first step, the students have arrived at the conclusion that all issues looked at by earlier classes can be bundled essentially into two groups whose elements are highly interactive. One group essentially deals with changes that are ongoing in the biosphere because of human actions. For example, these are the changes that are induced by

accelerating advances in genetics. The other group consists of changes that are occurring in human organization – of any kind – from terror to governance. A further insight is the idea that networking is a central driver operating in both of these bundles of issues. It's fairly easy to see how this might be so in terms of human organization, because of the more obvious links between advances in information technology and changes in social structures. The role of networking as a factor in scientific advance is less obvious, but real. Science is moving ahead so rapidly, not just because computers give individual laboratories and individual scientists the means to model and crunch numbers with greater and greater power, but because research communities are networked on a global basis. Knowledge is being created at greater and greater speed because it is being exchanged at greater and greater speed.

The students have also become actively concerned about one dimension of governance – the issue of openness in our society versus security. They see these two things as being in tension with each other. And of course here we begin to approach the subject of mastering the future before it masters us, and what is the meaning of the network for the future of democracy. It means that if the network, for example, in the case of economics, diminishes the role of democratic governance, then there's a problem, and a threat for democracy. It means that if networking, in the case of international crime, creates forms of criminal organization that elude government, then networking in that instances is producing a threat to democracy. It means that if terrorism operates by networking to organize and to deliver blows against our society, then that too has become a threat against democracy.

To quote from the draft of this semester's student paper. "Four principle themes emerged as we explored future trends. First, the forces that shape the world are growing in complexity and challenge the way in which government must view the world. In addition, the expansion of networks is causing change to happen faster, effectively reducing the reaction time available for governments. And as a third trend, power is simultaneously being passed down to individuals and concentrated at the supranational level." Finally, the draft report says, "Technological developments promise to challenge basic assumptions about life, death and security." And indeed they do.

We have perhaps two basic models to think about for the future. One of them is that we disorient ourselves; that the future essentially takes control over us and pushes us where it wishes, against our wishes. The other is that we somehow control the future and make it our servant, even if it means substantial modifications in how we think about ourselves and how we proceed. One of the key questions, to return to the theme of this speech, is whether a democratic system can accomplish these things.

Democratic systems require time for deliberation. They do not do well if they are forced to make instantaneous adaptations. Debate is the essence of democracy. But time to reflect and time in which to react are becoming the shortest commodities because of the acceleration of events that we have been discussing.

It is conceivable that we could enter a period when events that are very big and very destabilizing simply come too fast – before we've had time to recognize that they are coming, and certainly before we've had time for an adequate debate about them. That is why we need to develop a forward-scanning approach that considers what might be happening - which is comfortable with this kind of analysis and which also considers what we ought to try to do about it.

And so, I come to my last two points. First, I believe that government needs to be adjusted so that it routinely thinks about the longer term, and examines the implications in terms of changes that might be made in current policy. No one can predict the future, but that does not mean we should not be contemplating it and examining its possibilities. I also believe strongly that young people interested in careers in government should be exposed to systematic thinking concerning the intersection between future contingencies and policy making. It is a subject waiting to be organized: a discipline waiting to be taught.

Finally, in any serious discussion about the ability of democracy to master radical change, one must talk about the Congress, not just the Executive branch. But that clearly raises the question of how to assure the vitality of the Congress. Those of you who have been reading the political press know that if you are a member of Congress, you are likely to be reelected for as long as you care to be. This is not a way to assure vitality in the Congress. It is probably the reason why fewer and fewer people are voting, and why fewer and fewer young people in particular are voting. We have got to re-interest the public in the political process. We have got to improve the teaching of democracy and civics at every level. And we've got to break the crust off the Congress of the United States: because in a democracy, clumsy as it may be, it's not the Executive branch that is the great balance wheel, it is the Congress.

The Congress in the end represents the often conflicted, but in the end, right general views of the people. That's our system, that's what we put our trust in, and we're losing that. That should be our central battle if we want to master the future.

Thank-you.