

**National Security and Economic Prosperity:**  
**Can the U.S. Have Both, in an Increasingly Interconnected World?**

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**I'm sure I don't have to convince any of you that this is a period of great change -- in every area: technologically (in Biotech, Cybertech, Nanotech); in geopolitics (from competitive regional couplings (in Europe and Asia) to failing states with nuclear weapons); in widespread "globalization" (of industry, finance, and technology); in security (from the relative stability of the Cold War, to the full spectrum of potential concerns; from pirates and narco criminals, through terrorism, insurgencies, and regional conflicts, to future peer competitors and nuclear deterrence) -- I could go on and on with this list of world-wide changes -- but the critical point is that the overwhelming share of U.S. government policies and, particularly, practices**

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are structured to resist these realities; rather than taking full advantage of them -- as numerous recent studies (including a number by the National Academies) have pointed out -- thus adversely affecting both the nation's future economic prosperity and its future security.

President Obama ran, and was elected, on a platform of change; but now comes the challenge of overcoming the expected resistance -- which will come from the Congress (who many refer to as a "leading, trailing indicator"); from the Unions (believing they are "protecting American jobs" by resisting change); from many of the military leaders (who fear losing our historic position of "technological superiority" -- even though we are no longer ahead in many technology areas); and from many in the general public (who simply object to change -- since they were doing well under the old system).

Over twenty years ago, Paul Kennedy (the Yale historian) published "The Rise and Fall of Great Powers" in which he highlighted the historic fact that states need wealth to attain military power, and need military power to acquire and protect wealth; and that these must be kept in balance; or excessive expenditures on military power will lead to a weakening of national power. Needless-to-say, today we are facing a combined financial crisis, on

both fronts -- a global economic meltdown (against which we are spending trillions of "stimulant" dollars) and Defense expenditures for two wars, plus a wide spectrum of other security concerns -- against which we are now spending over \$750 billion annually (including "supplementals") on U.S. National Security (including Homeland Security, Intelligence, nuclear weapons, etc.). In addition to the large debt build-up caused by these expenditures, the nation (except for those here tonight) has an aging population, with the attendant run-away costs of Medicare and Social Security.

Clearly, the nation is facing an "affordability crisis" -- and the two immediate effects are likely to be cutbacks in both the DoD budget (under the theory that with "improved management" we can maintain our security posture with fewer dollars); and in Research investments (under the argument that we must satisfy "immediate needs" first).

Rather than simple budget reductions in these two areas, I believe it is time for some fundamental changes -- particularly with regard to gaining the benefits of the impact of "globalization" on these two areas.

First, with regard to National Security, we need to shift to a "holistic" perspective -- involving an integration of both "hard" and "soft" power -- and

combining multiagency and multinational efforts. Future security concerns (terrorism, drugs, insurgents, regional conflicts, biological and nuclear arms controls, etc.) can not be solved by a single nation; they are going to require multinational approaches; and the solution will be heavily geopolitical, not just military (so the State Department will be a major player – as has begun to be recognized by the designation of a State Department official as a Deputy Commander of both U.S. Southern Command and U.S. Africa Command).

Since there is no conceivable future military operation in which we will not be in a coalition, it means we must not only plan and train together, but we must also share technology. (We must never again be in the position we were in during Kosovo, where Dutch and U.S. planes were flying next to each other, but could not talk in a secure mode -- it made our pilots vulnerable). This, of course, means changes in U.S. export controls.

But, since there are many areas in which the U.S. is no longer ahead in technology, it also means changes in import restrictions (from our historically-based “Buy American” rules). Today, there is not a single U.S. weapon system that doesn’t have foreign parts in it (because they are better -- not because they are cheaper); and many new military systems are fully utilizing foreign designs (for example: the Army’s new mine-resistant, ambush-protected

(MRAP) vehicles (the armored replacements for the HMMWVs) have a V-shaped hull design from South Africa, armor from Israel, robust axles from Europe, and electronics from Asia). But, when the Air Force chose a European-designed tanker aircraft, the Congress was up in arms (even though it was going to be built in Alabama!). In fact, in 2004, the House of Representatives passed a law stating that “every part of every weapon system must be built in America, on U.S. machine tools.” Fortunately, it did not pass the Senate. If it had, it would have lowered the performance of every U.S. weapon system, and raised its costs (surely not steps in the direction of enhanced U.S. security!).

Similar “protectionist” thinking, practices, and legislation (especially since 9/11/01) exist to hamper U.S. future leadership in innovative research -- and, therefore, in economic prosperity, (as well as natural security). For example, historically, the U.S. has greatly benefited from the large number of foreign scholars and students who come here. As I’m sure you know, 1/3 of our Nobel prize winners were not born here; nor were most of the Silicon Valley entrepreneurs; and even Enrico Fermi was not a U.S. citizen when working here on nuclear weapons. But today, our visa restrictions, and our “security” classification restrictions (including such recent barriers as “deemed export control,” and the new security category, “sensitive but

**unclassified") as well as other “undesirable clauses” in government research contracts (restricting publications and prohibiting the use of non-U.S. citizens) are not only excluding greater than 50% of our graduate-school engineers and scientists, and a significant share of the faculty in U.S. universities (i.e., all non-U.S. citizens) from working on U.S. government-sponsored research; but it is discouraging foreign students and scholars from even coming here; and encouraging U.S. Universities to set up foreign campuses offshore.**

**Importantly, these restrictive research practices, of government agencies, are actually contrary to stated U.S. Executive Branch policy. Specifically, National Security Decision Directive-189; which was signed by Ronald Regan, reconfirmed under George W. Bush (by Condoleezza Rice) and, most recently, when we pointed out to Secretary Gates that the NSDD-189 policy requirement (namely: that all government fundamental research be open to all participants, and freely published) was not being followed in practice (and that “national security” was being used as the rationale), he had his Undersecretary for Acquisition, Technology and Logistics, issue a reconfirming Directive, with the hope that the agencies would follow his lead (which the AAU is now tracking to see if it is being implemented).**

Given the “economic crisis” the U.S. is now in, and yet with the need to have a strong economy (based on innovation leadership from both industry and government-funded research), and the simultaneous need for a broad-based, but affordable, national security posture, I believe the required actions are clear. As was stated in a National Academies study that Alice Gast and I co-chaired on “Science and Security in the Post 9/11 World,” the “U.S. leadership in science and technology -- leadership gained in significant part through interchange of ideas within the international community (both here and abroad) -- is central to achieving national security, in the economic and defense context of the 21st Century.” And, as the recent Academies’ study, co-chaired by John Hennessy and Brent Scowcroft, on ‘Beyond ‘Fortress America’: National Security Controls on Science and Technology in a Globalized World,’ also concluded: “The national security controls [e.g. export controls, visa regulations, “Buy American” restrictions, etc.] that regulate access to and export of science and technology are broken. As currently structured, many of these controls undermine our national and homeland security, and stifle American engagement in the global economy and in science and technology. These unintended consequences arise from policies that were crafted for an earlier era [over five decades ago]. In the

**name of maintaining [U.S.] superiority; [however] the U.S. now runs the risk of becoming less secure, less competitive, and less prosperous.”**

**These two studies, along with many others over the past 10 years (including a number by the Defense Science Board) have concluded that the entire system of export controls needs to be restructured, and the visa controls on credentialed foreign scientists and engineers should be streamlined in order to serve the nation’s economic and security challenges. In essence, the “barriers” must be removed, and replaced with positive incentives (including research funding) if the U.S. is to maintain its leadership position in the economic and security areas.**

**Importantly, the needed changes (to ITAR, to visa restrictions, etc.) have been well defined (over the past few years) in the various Academies’ and Defense Science Board’s studies, as well as in numerous industry studies. And, in 2000, there even was a significant White House initiative, loosening export controls (which was led by DoD and supported by State); but it was reversed after 9/11. Now is the time for leadership to accept the challenge -- and to overcome the expected resistance. Our future national security and economic prosperity require it.**

**Overall, America's Legislative and Executive Branch leaders must recognize the changed nature of the world, in the 21st Century -- specifically, that “globalization” is real, and that with the world-wide spread of technology, industry, and, particularly, finance, there is a need to not assume that future global economic and military powers (such as China, Russia, India, Brazil, etc.) will become our adversaries; but, rather, to work at making them “partners” in achieving world-wide peace and economic prosperity. For example, instead of (as Sec. Rumsfeld did) publishing an annual report on Chinese military growth (and clearly making them into a likely future enemy), we should recognize that they have a terrorist threat (in their Northwest); they have huge environmental and energy problems; they have water problems; etc. and work with them (as well as with our traditional allies) at mutually solving our common problems -- while also working together on such security issues as controlling nuclear proliferation from North Korea and Iran; as well as addressing the global economic meltdown (which the new Director of National Intelligence, Dennis Blair, has stated is our #1 National Security concern -- due to the instabilities it will cause in many areas of the world).**

**Obviously, it can be expected that the cultural changes required (and these are timely “cultural changes”) will receive severe resistance. Yet, all of**

the literature on “change” notes that, for successful change (of the sort required), two things are necessary:

**First: widespread recognition of the need for change. (And I believe the economic conditions are making this clear.) and**

**Second: leadership with a vision, a strategy, and a set of actions to bring it about. (In this case, it will take political courage, with strong and sustained leadership, by both the Executive and Legislative Branches -- working together.)**

**I admit to being an optimist. (In the 6th grade, in grammar school, I was noted the biggest optimist in the class.) And I firmly believe that these needed changes can be achieved. What’s more, the American public, and, particularly, our fighting men and women, deserve it -- and the nation’s future security and economic prosperity depends upon it. With your help, we can make it happen.**

**Thank you.**