

21 National Security and Science and Technology

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The great security challenge facing this country today is combating terrorism. To safeguard our national security we must continue to implement a firm strategy to diminish the capabilities of Al Qaeda and wipe out terrorists of global reach. We must also reaffirm our commitment to science and technology in this country, and understand its vital importance to our national security as we continue with our war on terrorism.

The War on Terrorism

The big question at this time is what we should focus on beyond Afghanistan in the war on terrorism. Should we go after Saddam Hussein in Iraq, who seeks weapons of mass destruction? Should we focus on countries that have a substantial Al Qaeda presence? Should we do both?

The Central Intelligence Agency (CIA) says that Al Qaeda is still the greatest present danger to America and should remain our primary target. I agree with that assessment. We should crush the forces that are directly responsible for the attacks of September 11. That means we go where the terrorist trail leads, whether it is to the remaining hideouts in Afghanistan, the Islamic schools in Pakistan, the remote islands of Indonesia, the mountains of Georgia, the charitable institutions of Saudi Arabia, the slums of Somalia, or the neighborhoods of New York, Chicago, Paris, and Rome.

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We are going to need help as we go after Al Qaeda and its associates around the world. If a government is unable or unwilling to act, then we have to be prepared to take military action ourselves. The great military challenge will be sequencing the targets and maintaining political momentum. It will not be easy. So far, President George W. Bush has done a commendable job keeping the American people focused on the target of the war on terrorism.

It becomes more difficult as we move into phase two. The challenge here is to take the political, economic, and humanitarian actions necessary to maintain the broad coalition to bring stability to Afghanistan. The war on terrorism cannot be just a military operation. We must also address the hardships and oppression that often fuel support for terrorism around the world.

At the beginning of the war on terrorism President Bush made a statement that I have not seen repeated: Military operations are not the primary piece of our campaign against terrorism. I would like him to repeat this statement because I think it is important. It is not easy to remember because we get so fascinated with fighting wars. We love to watch airplanes taking off carrier decks and precision bombs hitting their targets. But we must keep in mind that terrorists cannot be destroyed by bombs and guns. Indeed, fanaticism may only be fueled by bombs and guns. We have no doubt that the United States will win the military confrontations in the war on terrorism. The more difficult part of the war will be to prevent terrorism by changing the political, economic, social, and cultural conditions that provide an environment that allows extremists to flourish. The biggest challenge is to make peace.

So we have to fight terrorism with the tools of peace as well as the tools of war. Our broader campaign must include cooperative police investigations, like those that have taken place to root out Al Qaeda in Pakistan. Our broader campaign must also include tighter border controls, monitoring of immigration and financial transactions, economic sanctions and aid, humanitarian assistance, peacekeeping, and encouraging new talks to settle the intractable political disputes that lead to terror. Every one of these tasks is very difficult to achieve. For example, we have had trouble gaining even European cooperation in blocking terrorists' financial assets. This demonstrates how hard the task will be.

I do not think we fully appreciate the limits of military power. While the government is vastly increasing the amount it spends on the armed forces, intelligence, and homeland security, we are not providing sufficient funds for peacekeeping and creating greater political and economic opportunities among nations.

To win the war on terrorism, the United States must exert global leadership to transform societies. We should start in Afghanistan. I am worried that Americans are ready to abandon Afghanistan. Conditions are deteriorating very quickly, warlords are gaining more and more power, and instability and ethnic rivalry are spreading throughout the country. With the exception of Kabul, the cities are not safe. Afghanistan is headed for prolonged chaos and poverty unless we act now to strengthen its security and boost its economic development.

Establishing security throughout Afghanistan is essential to getting anything else done. The international peacekeeping force now patrols only the streets of Kabul; it needs to be expanded dramatically and it must have rules of engagement that are more robust. Otherwise Afghanistan will not have the stability necessary for growth. For example, a farmer will not plant his seeds unless he can cultivate his crop. To do that he needs to know he and his crop will be secure.

President Bush is right to advocate a new national Afghan army, but that is going to take time. Afghanistan needs security now, and the rest of the world will be watching to see how we handle the situation. Afghanistan could be a test case for the United States' resolve to follow-up its military campaigns with an equally strong commitment to peace and stability.

Intelligence

Another challenge in the war on terrorism is to upgrade our intelligence capabilities. CIA director George Tenet testified in front of a Senate committee that we did not have a failure of intelligence in the days leading up to September 11. That is the kind of doublespeak that the American people do not like. Of course we had a failure of intelligence—an absolute failure. I do not blame George Tenet. I do not blame any one person in particular. But to deny that there was a failure is to shut oneself off from reality.

We have to pay more attention to terrorist threats, not just threats from other nations. Terrorist groups like Al Qaeda present the most immediate threat to our security. But we have seen too much emphasis on the mere collection of information in our intelligence community; we need more analysis. With current technology, collection is the easy part of intelligence. The real challenge is in analysis and dissemination. If you do not get the right information to the right person at the right time then the information you collect is useless.

We have to make a new commitment to put more people on the ground, not merely fancy devices that pick up information. We must have people who can alert us to potential terrorist plots, and to do this we have to ease some of the restrictions on hiring “unsavory” people as agents.

We also have to invest more in foreign language training. Recently, the United States wanted to make a statement on the Arab satellite television station *Al-Jazeera*, but could not find an available speaker in the government who was fluent in Arabic. Instead, we had to bring in a retired officer to make the statement. This is unacceptable. The United States cannot combat threats from across the globe if it cannot read the messages.

Homeland Security

We have a great challenge to dramatically strengthen our homeland defense. The three elements of effective homeland security are prevention, protection, and response. Prevention is everybody’s favorite option, and to prevent terrorist attacks you need good intelligence.

We also need to improve our protection substantially. We need to invest more resources into securing our crucial infrastructure. This means improving security in and around our financial systems, computer systems, water supply, electrical power grids, borders, transportation hubs, and major cities. We need to think about these elements of our infrastructure as targets, and establish enhanced security that will both deter terrorists from striking and repel a potential attack.

The third element of homeland security defense is response. Do you know if your local hospital or law enforcement can adequately respond to a conventional terrorist attack? What about a biological or chemical attack? We need to ensure our ability to respond promptly and effectively to these potentially devastating methods of terrorism. The best defense against a chemical or biological attack is good surveillance and the deployment of a rapid-response team. But we need incredible organization and coordination for these teams to be effective.

The Administration's decision to create a cabinet-level Department of Homeland Security was correct. The government must keep the American people informed of the steps being taken to ensure the defense of the homeland. The Administration should take every opportunity to put Homeland Security director Tom Ridge in front of the American people. He is an able man and capable of explaining to the American people what the government is doing to secure the safety of their communities.

Another challenge that we face is the impact of the war on terrorism on the role of government. One of the striking developments to follow September 11 is that government is back in style. We are seeing an unprecedented transformation of government activity, including a dramatic increase in the size and role of government in this country. The government is intervening in business decisions, it is propping up and bailing out industries, it is expanding the mandates of government agencies, and it is, of course, spending billions of dollars on defense, intelligence, and homeland security. The budget rules that had been established were thrown out the window, along with our concerns about deficits.

We all recognize that a strong and active federal government is necessary to win the war on terrorism, but we have not yet seen the war's long-term impact on the role of government in this country. Almost certainly the size and role of government will grow. But we also need to look at the challenge of upholding our constitutional rights and values. All of us should be deeply conflicted about the balance between security and civil liberties in the post-September 11 America.

We must keep in the back of our minds that we are fighting for freedom. The protection and promotion of freedom is America's animating vision in the world. Providing for that vision and our core democratic values is absolutely essential to winning the war on terrorism. Right now, detainees are being held for weeks and weeks in this country without any due process of law or publicity. Is this really necessary? At the very least, we need more discussion and debate as to whether this is how we really want to fight a war to protect our freedom.

Supreme Court Chief Justice William Rehnquist recently spoke at the Woodrow Wilson Center. He gave a marvelous account of how Presidents Abraham Lincoln, Woodrow Wilson, and Franklin Roosevelt handled the question of civil liberties during three American wars. He pointed out that every war brought an erosion of civil liberties, and that after every war things returned to normal. I hope that this is the case in the war on terrorism, but often things do not swing back all the way to where you came from. This may be particularly true in a war such as the one we face today because it has no definitive end point.

Support for Science and Technology

Another challenge for our country is improving the dialogue and coordination between our scientists and policymakers. This is not an easy task, but it is more relevant than ever before.

One of the striking developments in recent decades is the growing prevalence of science and technology in public policy issues. Indeed, there is scarcely a public policy issue that does not to some extent turn on scientific and technical knowledge. For example, the congressional agenda includes issues involving energy, the environment, health care, cloning, anthrax, airport security, and missile defense. Science and technological expertise is badly needed on these issues. But keeping up with scientific and technological developments is difficult for Congress. Most Members do not have a technical background and most of them are nearly scientifically illiterate. Indeed, very few science Ph.D.s have been Members of Congress in recent years.

Astonishingly, Congress diminished its capacity in science and technology in 1995, when it abolished the Office of Technology Assessment, which was something of a model for parliaments around the world. Congress also used to have a Caucus on the Future to alert Congress to scientific development, but that was eliminated in 1994. The executive branch is better at this, but not by much. I used to joke with former Secretary of Defense William Perry that he was the only Cabinet officer in my memory who had a Ph.D. in math.

Scientists tend to get pushed into small pockets in the federal government. The director of the White House Office Science and Technology Policy is a good illustration. It is an important role and has been held by very capable people. But they tend to get caught up in the near-term, the day-to-day political activities, and they do not have time to look at the big picture of what the government as a whole is doing to meet our long-term science and technology needs. The result of the government's scientific deficiencies is a serious gap between the scientific and policymaking communities.

Scientists often find it difficult to communicate effectively with politicians, and politicians often find it difficult to understand science. We need more people in politics who understand science, and we need a better dialogue between scientists and policymakers. This will be hard to achieve since politicians and scientists come from different perspectives and academic cultures, but this dialogue is essential to the nation's well-being.

A good model may be economics. Economics is a highly technical field, but one with many practitioners who have now mastered the art of communicating with politicians. Economics can be a model for scientists and policymakers to adopt as they pursue more effective dialogue.

We must also boost federal support for science and technology research and development (R&D). Government, for all of its deficiencies, is a major supporter of science and technology R&D. But I am concerned that the government has become too focused on support for biomedical research at the expense of the physical sciences, including physics, math, information science, and engineering. The government does not sufficiently understand that scientific progress is made when we harness and support all the scientific disciplines, not just biology and medicine.

The science and technology R&D budgets for the National Science Foundation, the Department of Energy, the National Aeronautics and Space Administration, and the Department of Defense have remained stagnant or have declined. This underfunding of the physical sciences could eventually undermine America's technological, economic, and military leadership in the world. It has been estimated that half of the U.S. economic growth over the past 50 years can be attributed to science and technology investments. This growth must be maintained.

Science and Technology and National Security

We also need strong science and technology for the protection of national security. The Department of Defense science and technology R&D spending declined by roughly one-third between 1987 and 2002. We see similar trends in the FY 2003 budget. In the military and in intelligence we must be on the cutting edge of science and technology. When you see precision bombings in Afghanistan and the remarkable developments in the intelligence field, you understand how important it is to have scientists and engineers who are thinking 10, 20, or 30 years ahead to what the battlefield requirements might be.

What our scientists do at the national laboratories is integral to keeping this country strong and free. Senator Howard Baker (R-TN) and I recently explored the complex balance between science and security at the national laboratories. We found that tightened security measures at the labs and opposition to those measures by scientists there had created a profound mistrust between the security and scientific communities, and had negatively affected the productivity of our labs.

We concluded that our government would be making a grave mistake if it tightened security measures so much that our nation's best scientists were discouraged from working at the labs. Good science and good security are both needed at the national laboratories, but they are not mutually exclusive. The challenge is to have excellence in both without neglecting either one.

Of course, our international prestige in science and technology is critical. This is called “soft power” in American foreign policy. It is the capacity to get others to do what we want without coercing them because they admire our achievements and want to emulate us. The science and technology industries possess that power as no other profession does in this country. When asked what they admire most about the United States, people in other countries, whether in the Middle East or Asia or South America, say U.S. scientific and technological expertise.

Our national security requires talented biologists, physicists, and computer specialists just as much as soldiers and politicians. America’s strength has always been tied to its innovation and entrepreneurial spirit. But a number of Silicon Valley executives recently told me that they could not run their businesses without Indian mathematicians, engineers, and physicists. This lack of homegrown expertise is troubling.

I served on a United States Commission on National Security that covered the entire political spectrum from liberal to conservative. One of our principal conclusions was that our nation must focus more attention and resources on human and educational requirements for national security. It is a matter of the highest importance that we develop highly skilled people. To do this we must reverse the negative trends of the teacher shortage and the decline in science and math education in this country. Otherwise, we will be unable to maintain our position of leadership in the world.

Conclusion

We should keep in mind that the vision, creativity, innovation, and entrepreneurial spirit of the science and technology community represent the very best of this great country. We remember Henry Ford’s 1907 goal of democratizing the automobile. We remember Jonas Salk saying: “We don’t need a better iron lung in this country; we need to prevent and eradicate polio.” We remember President John F. Kennedy saying in 1961, “... this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth.” We remember

James Watson announcing in 1987 the goal of sequencing the human genome. And we remember Steve Jobs' goal of creating a supercomputer that every child can use.

We also remember the opposite. We remember a Western Union internal memo saying in 1876: "The telephone has too many shortcomings to be seriously considered as a means of communication." And we remember IBM chairman Thomas Watson saying in 1943: "I think there is a world market for maybe five large computers."

We now face the challenge of combating terrorism and safeguarding our national security. Strengthening the dialogue between policymakers and scientists and boosting federal support for science and technology is crucial to our national security and the future of our economy.

We know a new world is coming. The scientific and technological communities of this country will play a big role in building that world, a world of greater peace, prosperity, security, and freedom.