The Big Three:
Our Greatest Security Risks and How to Address Them

by

Richard Danzig

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NATIONAL DEFENSE UNIVERSITY PRESS
WASHINGTON, D.C.
1999

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Completed under a grant from the
Center for International Political Economy to the
Maxwell School of Citizenship and Public Affairs
at Syracuse University

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First printing, June 1999

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Acknowledgments

I began thinking and writing about many of the ideas in this essay while serving as the Under Secretary of the Navy between 1993 and 1997. After resigning from that position I had the benefit of developing my thinking as a Traveling Fellow of the Center for International Political Economy (CIPE) and as an Adjunct Professor at the Maxwell School of Citizenship and Public Affairs. For a year, this gave me a valuable opportunity to compare notes on other topics, as well as those discussed here, with leaders and analysts concerned with national security in other countries. As this essay was completed, I returned to the Department of the Navy as its Secretary in November 1998.

While looking forward to discussing these ideas with my colleagues in the Pentagon and hopefully reducing the risks described in these pages, I should emphasize that the statements made here are personal, not official. They should not be taken as U.S. Government policy.

Because my thinking on these ideas has evolved over a number of years and benefitted from many discussions, it is impossible to identify all those who made contributions. I would be remiss, however, if I didn't note the special contributions of my former assistants, Ms. Pamela Berkowsky, Captain Kevin Cosgriff, USN, Captain Trell Parker, USN, Colonel Bob Lee, and Colonel Jay Paxton. I have for them the greatest gratitude and affection. I would like especially to note my particular indebtedness to a dinner meeting focused on this topic organized by Colonel Russ Appleton, USMC, and to the 1995 Naval War College Current Strategy Forum, which provided me, as its keynote address speaker, the opportunity to address some of these issues. Elsewhere in the Department of Defense, Andy Marshall, Hans Binnendijk, and Naval Reserve Commander Neil

Golightly were especially kind and helpful in their contributions to this effort.

I learned a lot from the opportunities that CIPE and the Maxwell School gave me. For that, as well as the chance to bring this project to fruition, I am grateful to these two institutions, and particularly to General Mike Carns, USAF (Ret.), CIPE President, and Sean O'Keefe, Bantle Professor of Business and Government Policy and Director of National Security Studies at the Maxwell School.

To Joan Scrivener, my secretary in the Pentagon and privately employed part-time secretary while I was traveling, I offer special thanks for her inexhaustible patience, skill, and care.

The Big Three: Our Greatest Security Risks and How to Address Them

Prologue:
Thinking About the Future

The American national security establishment confronts many immediate problems: "Rogue states" attempt to bully their neighbors and attack U.S. interests; a war with Iraq has been followed by years of confrontation over sanctions and inspection; and a half-century after a major war in Korea, America still faces a constant and unpredictable threat on that peninsula. In addition, state-sponsored and independent terrorist groups explode bombs at American embassies, on U.S. bases, and in American airplanes. Nuclear, chemical and biological weapons are proliferating. Ethnic and national groups lock in conflict so extensive and bitter that even when U.S. interests are not directly at stake, as in Bosnia or Rwanda, there are imperatives for intervention. The challenges at the end of the 20th century are immensely demanding.

But beyond the present lie other, probably even more important, longer term issues. Commendably, U.S. policy makers have tried to attend to the long term. After the breakup of the Soviet Union in 1991, for example, the Department of Defense (DOD) emphasized the importance of "preventive defense." The Pentagon's 1997 *Quadrennial Defense Review* identified a need to "shape" the environment as well as to respond to crises. American policy has sought to be farsighted, to identify issues before they reach the point of crisis. There is widespread

agreement that America should worry about and invest in the future at least as much as in immediate needs.

Unfortunately, powerful factors militate against such efforts. As is often noted, in Washington (or any capital) the urgent preempts the important. A policy equivalent of Gresham's economic law could be stated: political and psychological factors (including the flow of the adrenaline) cause the crisis of the day to absorb the energy of the day. Little is left to plan for tomorrow, less for next month, almost nothing for next year. Only a dribble of attention is devoted to a decade as yet unborn. As in most things, we rush to cure while underinvesting in prevention. Self-interest regrettably reinforces this inclination. Today's crises shape the reputations of today's decisionmakers. By contrast, the energy and skill with which the next decade's problems are anticipated will be evaluated a decade from now, diluted by hundreds of other inputs.

To these universal tendencies may be added a problem of this particular era. We are not accustomed to thinking about a world in which tomorrow's challenges may be very different from today's. Over the last half century, American policy makers have had little occasion to exercise the skills or discipline required to transcend the urgent in favor of the longer term. During World War II we faced an immediate, fundamental threat. Then, for more than four decades after that war, America's most pressing task and its most important longer term security problem were the same: to combat communism as incarnated in the Soviet State and its allies. There was little need to think very differently about the long term as compared with the present. Moreover, our predecessors built an intellectual framework for the Cold War that was comprehensive, consistent, and, in its central tenets, correct.

Now, when a new framework is required, we have lost the knack of how to build it.

Furthermore, it is perilous to advance premises about the long term. The number of variables is too large, global change too rapid and diverse, our imaginations too limited, to project with confidence. Who among us could have foreseen the world of 1938 in 1908? The world of 1968 in 1938? 1998 in 1968? As a cautionary recent example, read the book on Japan by the brilliant Herman Kahn, published in 1971. Kahn was characteristically perceptive about much that was to come, but he ventured that if Japan did not surpass the United States in gross domestic product (GDP) by the year 2000 he would "be surprised."[1] Or consider the conference of 35 of the best of our Russian experts, assembled by the estimable Center for Strategic and International Studies in 1983. The rapporteur summarized, "All of us agree that there is no likelihood whatsoever that the Soviet Union will become a political democracy or that it will collapse in the foreseeable future."[2] Our headlights illuminate only a short stretch of the road before us; we cannot see the many curves that lie ahead.

Even if we saw the future, it would be a considerable challenge to react to it appropriately. In security matters, diagnosis and prescription are not very closely aligned arts. However uncommon it is to discover a reflective analyst and a

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[1]Herman Kahn, *The Emerging Japanese Superstate* (Bloomington: Indiana University Press, 1983), 94,130.

[2]Robert F. Byrnes, ed., *After Brezhnev: Sources of Soviet Conduct in the 1980s* (Englewood Cliffs, NJ: Prentice-Hall, 1970), xvi-xvii. I am indebted to Hugh Ragsdale, *The Russian Tragedy: The Burden of History* (Armonk, NY: M. E. Sharpe, 1996), 251, for calling attention to this passage.

skilled policy practitioner, the combination in one person is so scarce that when it arises, as for example in a Dean Acheson or a Henry Kissinger, we celebrate it (and live off it) for a long time. Yet the payoff, and the only meaningful reward, from a perception of the future is to translate it into action in the present.

It was said of Bronson Alcott, 19th century poet and philosopher (and the father of Louisa May Alcott), that he "soared into the infinite and fathomed the unfathomable, but never paid cash." Policy makers can't get away with that. After "fathoming the unfathomable" of the future, they must "pay cash" by converting their insight into policies and budgets of present value. Put another way, it is necessary for them to be fluently bilingual: they must translate the present into the future and then interpret the future prospect back into present actions. Either of these tasks is immensely difficult; together, they are daunting.

Finally, there is a paradox. To the extent we foresee the future and effectively address it, then the future will not develop as we anticipated it. This is especially so because national security is a competitive business. When we respond to risks, those who would oppose us adapt to counter our responses. It is not sufficient to be farsighted; we must also constantly reassess. It is not possible to be enduringly correct.

Yet when all this is assimilated, and the immensity of the challenges and the probability of failures are acknowledged, our visions of the future provide the most important guide to action in the present. At a minimum, we place present decisions in perspective—we evaluate their importance and correctness – by intuitively assuming what the future will be like. This essay tries to improve that process by making possible futures the center of

discussion and by asking what is likely to be undervalued in our preparations for these futures.

The following question may deepen understanding. Imagine that we policymakers are sitting around a table, gazing into a crystal ball. Suppose we saw in this crystal ball ourselves sitting at this same table 30 years from now saying that things had gone badly for America; those responsible for this country's international relations at the end of the 20th century had not done well, had failed to take appropriate actions. Then the crystal ball clouds over and we are left to guess what it was said—what had gone wrong for America from a national security standpoint, between 1999 and 2029? What would it be? Something unforeseen?

From discussions and reflection in response to this question, I have distilled three risks that warrant better articulation, more attention, and a better targeted, richer investment of our time, energy, and treasure.

Given the opening observation that we cannot predict the future, why is this a valuable discussion? A handful of independent answers, any of them valid, would justify the exercise. If several are persuasive, the effort is that much more warranted. First, whether the views here are persuasive or misguided, they will serve a good purpose if they trigger a broader debate about what others see in the crystal ball. Even if the resulting discussion tells us nothing about the world of 2028, it can tell us a great deal about 1998. The greatly respected investor, Warren Buffet, is credited with having disparagingly commented that predictions about the stock market say less about the stock market than they do about the psychology of those doing the predicting. For Buffet, this implied that people's

forecasts were not worth much attention. But I should like to follow Buffet's trail in the opposite direction: to use the predictions as a source of insight about the psychologies.

From this angle, the future is a Rorschach test that can reveal fundamental present concerns. The focus in this respect is not so much on what might be in the crystal ball but on what the observers *think* they see. This is therefore a work about present fears and insecurities, and how they might apply to the future.

Though longer term concerns rarely are discussed in the way they are presented here, they underlie our day-to-day national security decisions and investments as the unconscious underlies the conscious. Raising these matters to the surface and making articulate what is usually inchoate can improve the policy debate about the present. Discussions about the superstructure of decisions are sounder if the foundations of longer term perspectives are better understood.

Second, even though some fundamental differences in perspective will persist after discussion, the discussion will sensitize policy makers to indicators that may later change their views. For all their uncertainty, predictions have an attractive aspect—they are ultimately verifiable hypotheses; "time will tell." But time speaks initially in whispers, amplifying its teachings as the years pass. Discussing our expectations teaches us to be better listeners. When we are sensitized to what we and others anticipate, we may, more quickly than an unprepared listener, pick up clues that a scenario is unfolding or that a trend is occurring.

Third, this approach offers us an opportunity to correct for underinvestment. These pages offer no pretension to comprehensiveness; this not an essay about everything important

to a sound national security policy. The question posed does not address opportunities or good things that may happen in the future, nor does it focus on issues, even very important issues, that already receive their due in present discussion. This question elicits people's anxieties, not their aspirations. Even if predictive, it would only predict "the dark side." If the observations in these pages are well taken, they need to be integrated with ongoing efforts in other respects to elaborate a complete national strategy for America in the first decades of the new century.

What these pages can do is focus our attention on ill-mapped problems that loom above the flatland of national security risks, encouraging us to look up, to focus beyond the day-to-day events that fill our calendars and our minds. If successful, it will induce debate about the contours of our long-term risks and about plans to minimize these risks. That debate can produce robust and worthwhile decisions without being able to see the future. We don't have to predict an airplane crash, much less identify its site, to think it is worth mapping the mountains. It is precisely because we cannot be confidently predictive that we are well advised to hedge—to try to understand where we might go wrong and to mitigate those contingencies.

Finally, our predictive capability, though perpetually imperfect, can be improved through group discussion. Some people will be more insightful than others. If discussions about the future are like most others, an exchange of views will deepen understanding. As a recent mantra from the computer industry puts it, "No one is smarter than everyone." If a great many of us discuss what is really important over the longer term, we are likely to determine more correctly what matters. If we rely instead

on only our own rudimentary, closeted views, we are more likely to err. We will never be terrific. Like Herman Kahn and the experts on the Soviet Union we will make mistakes, but a small improvement in our foresight could be worth a lot.

This essay will not foretell the future. To the extent it is successful, however, it should help us to understand and sharpen national security priorities and policies in the present.

1. The Big Three

Thirty years from now, if our successors were to deem our stewardship of American national security at the end of the 20th century as poor, why would that be so? Suppose through a time warp our computers receive the first paragraph of a review written in 2029, then imagine that preview were critical of our national security policies and investments at the end of the 20th century. Perhaps it said we had failed to focus adequately on what proved to be our most important national security problems. What would the missing text most likely report as our failures?

There are many candidates for answers to this question; all should be subject to debate. This essay outlines the answers by describing three risks that should be of greater concern to us over the next decades:

- Renewed competition with a major military adversary
- Traumatic attacks, particularly from nonexplosive warfare (NEW) weapons
- Erosion of support.

Let's review each of these risks and the immediate actions that hold promise of reducing our vulnerability.

Renewed Major Military Competition

Even before considering its strategic nuclear arsenal, the United States is a military superpower because it has the ability to project power anywhere in the world. At the close of the 20th century no other nation rivals that ability. A few nations can project significant military force within their immediate neighborhoods and may, accordingly, be called regional powers. Remarkably, however, in the last decade of the 20th Century, even the ability of such powers to sustain a nearby military occupation usually can be countered by the United States if, with its allies or by itself, it has the will to do so, as exemplified *by Desert Storm*.

Paradoxically, this American ability to project military power to any region gives us a responsibility that keeps us from being completely at peace, as we have seen in recent years. The costs and frustrations of our efforts to quiet regional turbulence and the very substantial accompanying anguish should not, however, obscure the extraordinary circumstance in which we find ourselves. We have a double privilege: we enjoy security in its most fundamental sense, because there is no country that credibly threatens to dominate this nation by military force, and we can extend this security to almost any nation we choose to protect. In short, we have no major military competitor capable of achieving a military victory, so long as we possess the will to oppose it.

This is a gift from those who preceded us in managing U.S. national security. There are differences of opinion about which of our predecessors and which of their strategies had the largest roles in putting us in this privileged position, and there are intense and appropriate debates about where and when we should spend our patrimony (Kuwait, Bosnia, Rwanda, and

Somalia are recent cases in point). But about the rarity, the immensity, and the reality of the gift, there can be no debate.

Moreover, there would be a high degree of unanimity that this gift was bestowed upon us because our predecessors combined military, economic, and diplomatic initiatives to shape the environment. We are without a major competitor because our military strength defeated our opponents in World War II and deterred them throughout the Cold War. At the same time, our economic power enabled us not only to outspend the Soviet Union in arms but also to discredit its Marxist logic. When generously shared, it brought potential and former competitors, such as Germany, Italy, and Japan, into a community that shares values and has a large stake in the present international order. Our economic and political ideologies and culture have an appeal and evident success that helped to persuade Russia (and Germany, Italy, and Japan before) to adopt a new course.

These observations suggest a first conclusion about our risks. The gift of advantage we have been given will not necessarily or easily endure; maintaining that advantage requires sustained commitment, well-conceived strategies, costly investments and luck, all to an extent we now only imperfectly understand. It is our most important challenge. Just as we judge our predecessors predominantly by the gift they have given us, our successors will judge us by how well we sustained it. If, in 2029, no major enemy threatens the existence of the United States, no opponent matches our military strength, and no regional enemy can project and sustain military force in the face of our determined opposition, then we will have succeeded. On the other hand, if we do not sustain this gift, history will judge us negatively.

The Risk of Traumatic Attacks

Only if military technology and doctrine were stagnant could the challenges of the past adequately predict the challenges of the future. Because ours is a period of immense technological and doctrinal innovation, we need to ask what may distinguish the national security environments we will confront from those that confronted our predecessors. For some future risks, the strengths we displayed in the Cold War and *Desert Storm* may be no more relevant than the Maginot Line.

An adversary could try to exceed us in traditional power projection, to dominate territory by the use of troops and explosive weaponry, but it need not seek to overpower us on our own terms. Rather, it could seek to disable us from projecting power by undermining our will or ability to deploy our assets. Attempts to do this, attempts predominantly aimed at sowing anxiety, despair, disruption and confusion, can be called "traumatic attacks."

To the extent that our power inhibits traditional military competition, we increase the likelihood of resort to other methods—asymmetric warfare. In warfare and criminal conduct, as in physics, every action produces an opposing reaction: every strength invites exploration of a different arena that may reveal a weakness. If we are perceived as unbeatable on the conventional battlefield, our opponents will try to beat us unconventionally and in other settings.

Having learned the lesson of *Desert Storm*, smaller competitors are especially likely to be drawn to asymmetric methods and strategies. In warfare, as in business, there is a tendency for a dominant power to overinvest in forestalling mirror-image competitors. Smaller actors exploiting new

technologies are more difficult to anticipate than traditional opponents are. In the 1970s, IBM focused on its mainframe competitors; CBS on NBC; General Motors on Ford. But it was software and personal computer manufacturers, cable channels, and producers of small cars, respectively, who most threatened these once dominant actors.

It is precisely such smaller competitors (Korea, Vietnam, Iraq, and innumerable guerrillas, militias and terrorists) that America most often fought and suffered from in the last half of the 20th century. Diminishing the risk of a major military adversary may properly be our most important concern, but in the 21st century, as in the past, our most prevalent problems are likely to be opponents who are not major industrial states and cannot be expected to fight as such.

Technologies of destruction have developed and proliferated so as to give groups, third-tier and second-tier states, as well as major competitors the power to destroy or disrupt targets beyond the battlefield. Our global effort to control nuclear weapons and missiles continues to be worthwhile, but it is imperfect and losing ground. Worse still, we are witnessing the proliferation of inexpensive, accessible, and invisible technologies—"poor-man's weapons"—that do not require missiles for delivery. These technologies, including biological, chemical, and "information warfare" weapons, increase the capabilities of smaller states, terrorist groups, and individuals.

Since the Chinese invention of gunpowder 650 years ago, warfare has focused on effecting or preventing explosive impacts. To date, terrorists challenging a country's security almost always have used explosive weapons. Our attention has been captured by the domestic bombings in Oklahoma and the World Trade

Center in New York and overseas terrorist acts on Khobar Towers in Saudi Arabia and the U.S. embassies in Africa. Bus bombs in Israel, package bombs in Ireland and Great Britain, the destruction wrought over decades by the Unabomber—all are examples of traumatic violence wielded by groups or individuals in regrettably familiar ways.

The 1995 Sarin attack on the Tokyo subway system, however, was more ominous, because it suggests the potential for other kinds of weapons as instruments of terror—chemical, biological, and radioactive materials can be used either alone or in conjunction with explosives. Add to this arsenal "information warfare," which can be waged by computer to degrade or erase data and software and, in consequence, the systems they control. An airplane can be destroyed not only by a bomb, but also and no less effectively by misguiding its computer and communications systems. These NEW weapons and related forms of attack can be applied simultaneously to thousands of systems. Regardless of whether NEW weapons assume a larger role against soldiers in the century to come, they are evidently well suited to attacking civilian populations and infrastructure. Their traumatic effects can be expected to be amplified by their unfamiliarity and invisibility.

This proliferation of offensive power goes hand in hand with an increase in the vulnerability of what we must defend. The interconnection and interdependence of civilian populations grow as we expand telecommunications, travel, urbanization, and international commerce. The increasingly complex weave of human society, with its ever-greater densities and frequencies of virtual and real interaction, increases both the ease and destructiveness of attacks that will traumatize. The erosion of

barriers to the movement of goods, capital, and people and the sensitivity of markets make modern societies volatile. NEW weapons exploit this volatility. Though widely labeled as "weapons of mass destruction," they may even more effectively traumatize as "weapons of mass disruption."

"Traumatic attack" is the bastard child of our information age. Over the last decades, satellites, fiber optics, and computers have transformed communication. This change was first incorporated into warfare as a modification of means. Satellite and fiber communications have been embraced by the American military as speedier, more accessible, cheaper methods of performing familiar tasks—but the technology transforms ends as well as means. Though it may take some time to fully absorb the point, telecommunications can change the purpose of an attack.

Contemporary communication is immediate and ubiquitous and has a high amplification. It is immediate not only because it is quick, but also because it feels (often incorrectly) as though there is no intermediate actor to soften or distort what is received. What was once out of sight, and therefore largely out of mind, is now salient. What used to have little impact, because it was over, is now known while in process. Because there are so many channels of communication, and they are so accessible, news is ubiquitous. Elites no longer control information; therefore, they no longer control decisionmaking. Furthermore, by its own amplifying and echoing effects, contemporary communication induces wave reactions. Pivotal incidents reported, replayed, and colored by the media and private telecommunications catalyze investor, public opinion, and decisionmaker reactions that have disproportionately disruptive effects. The result can be not just NEW weapons, but also a new warfare.

The archetypical view of warfare internalized by this generation of Americans is derived from our revolutionary, civil and world wars. These were struggles for territory conducted by massed armies delivering body blows against one another. Propaganda, aimed at troops and civilians, was deemed to be worth some effort, but the commitment of national populations—for example, America, England, Germany, Russia, Japan in World War II— was largely unquestioned. Psychological warfare was a secondary effort, intended to soften the primary target: military forces. Wars were won on battlefields. *Desert Storm* fit this mold. But the enemies in the next century's warfare may not choose to fight on battlefields; America's advantage is too large in that setting.

The strategy of traumatic attack ignores armies on the field or uses them as props for theatrical points. Traumatic attack seeks not to defeat armies, but instead to eviscerate the will to use them, making primary what was previously secondary, aiming to divert or diminish the public will to utilize what would otherwise be overwhelming force. Democracies are particularly vulnerable to these attacks, as shown by the three leading 20th-century examples of this strategy in its nonviolent form: Gandhi's call for passive action, guerrilla warfare in Vietnam, and terrorist groups in Northern Ireland. These merely foreshadow 21st century possibilities, as traumatic attack strategy gains in power in proportion to the immediacy and evocativeness of communication. For those who are unscrupulous, it fits, as hand in glove, with NEW weapons.

NEW weapons and the new warfare are likely to be aimed at civilian populations, including the America people. Enemies will be tempted to blackmail us by holding civilians hostage, or to

debilitate our will and ability to fight by attacking our people, challenging our government's credibility as a protector, and distracting its attention while diverting its resources. To the extent our opponents are unimpeded, they will demolish now comfortable geographic, bureaucratic, and psychological boundaries that define our national security.

Since the Civil War, America national security has related to war abroad. By contrast, "domestic tranquillity" has been the concern of organizations other than those charged with the national defense. The work of our security establishment has been directed to the use of force; other groups are charged with addressing public opinion. The 21st century seems likely to break down those distinctions. Our second great risk arises from not sufficiently preparing for and responding to the challenges of traumatic attack both inside and outside the United States.[3]

The Risk of Erosion of Domestic Support

While the first two risks would stem from the actions of others, the third risk stems from our own politics and society. The

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[3]Another kind of unconventional risk that erodes boundaries should also be considered. In an increasingly interdependent world, the extraterritorial effects of another nation's domestic conduct may physically damage our domestic well being. Saddam Hussein offered a small, wartime taste of this type of effect when he tried to intimidate Saudi Arabia by dumping oil in the Persian Gulf. But the problem can be subtler. If, for example, global warming is accelerated by intensified use of fossil fuels, failure to address another nation's use of these fuels through negotiation and agreement (as with acid rain) may present a 21st-century challenge to our well being. Failures of health practice, refugee control, nuclear safety, or even simply control of drug lords and other criminals may similarly spill over borders and make what would otherwise be a domestic matter international. Those concerned with national security in the 21st century need to think more broadly than has been the norm.

mainstream of this country may become so indifferent to or, worse, alienated from its military and foreign policy institutions as to undercut U.S. ability to develop and deploy its military, diplomatic, and economic strengths in the international arena.

To the extent they are successful, traumatic attacks pose a version of this risk, because they are aimed at undermining the will to use military power. This third risk, however, is even greater if traumatic attacks and a major military competition do not occur. Without clear and present dangers, there is likely to be erosion of support for security investments. This problem will be intensified if, simultaneously, DOD is viewed as wasteful. It will be compounded again if there is a gap between the military officer corps and American civilian society. Difficulties can now be perceived in all three of these dimensions. Alone any of these problems would be perilous; together, they multiply one another and constitute the third of the great risks to American security.

The erosion of the rationale for security expenditures and diplomatic or aid initiatives is, like the risk of traumatic attacks, in some measure a consequence of our gift. The threat posed by the Soviet Union elicited a strong response from the United States; now it is no more, and lesser evils abroad are now seen as directly threatening this country. For some period we will probably sustain a substantial effort, like a runner whose momentum and rhythm keep him running beyond the finish line. As we adjust to the fact that the old race is over, however, questions will multiply as to why and how fast we should keep on running.

In a time of relative peace and fiscal pressure, preferred DOD answers to these questions become less compelling. With a defense budget of more than $280 billion per year, the United

States spends one-third less in real terms than at the height of the Cold War, but that expenditure still is more than a third of the defense expenditures of all the world combined. Moreover, our allies are responsible for another third of world defense spending (over $255 billion). We and our allies thus outspend our potential opponents (who are nowhere near as united as we are) by almost two to one. Our Army, Navy and Air Force separately have annual budgets greater than the entire government (including all its defense forces) of Russia. Such spending may become increasingly controversial.

For much of the last decade, controversy over the defense budget was softened by the Armed Services' abilities to live off the stockpile of assets accumulated during the 1980s. Those resources will not, however, sustain a 21st-century force. Consequently, it is likely that either defense resources will increase or defense capabilities will erode.

The rise of a major competitor, or our falling victim to traumatic attacks, would rekindle enthusiasm and broaden support for defense expenditures. But if the first and second risks do not materialize, there is a substantial likelihood that this third one will. America has always relaxed in the absence of a clear and present danger. Avoided competition and prevented attacks are not like battlefield successes—they provoke no parades and, ironically, diminish the support that made them possible. In such an environment, inefficiencies and waste would be heavily penalized. When in past decades defense expenditures such as $100 hammers and $150 wrenches were identified, frustration and antagonism were expressed, but budgets were sustained. The danger from the Soviet Union bought leeway for the national security budget that is unlikely in the future.

Support for America's defense and foreign policy establishments may be further undercut if a gap is allowed to widen between the military and the rest of society. At the end of World War II, a majority of American males in their twenties had served in the American military. In the 1950s and 1960s, only half had served, and after the Viet Nam War, only four in ten. The end of the Viet Nam War, the termination of the draft, a shift to a career military force, military downsizing after the breakup of the Soviet Union and Warsaw Pact, and the growth of our population have all decreased this ratio. The increased representation of women in political and professional roles and their acceptance as a substantial source of recruits further changed the equation. Of the more than 3.5 million men and women who turned 18 in each recent year, fewer than 200,000 have served in the military, or about one in 18; at the beginning of the new century, the figure will be only one in 20.

This means that fewer civilian leaders will have a personal understanding of the sacrifices of comfort, safety, financial well being, and family life made by members of the Armed Forces. Fewer voters will understand what it means to be expected to face danger, or what the consequences might be of fighting with inadequate training and obsolete equipment. Fewer parents will have children who may be called to go in harm's way. Fewer lawmakers will have personally experienced the connection between preparedness and peace.[4]

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[4]As recently as 20 years ago, more than 60 percent of the Members of Congress had military experience. In the just sworn-in 106th Congress, only 31 percent of the House and 43 percent of the Senate have been in the armed services. This last Congress to sit in the 20th century, may have the least military experience in the Nation's history. The 21st century will likely exacerbate the trend.

This problem is especially pronounced among college graduates, the segment of the population that shapes our officer corps. In the early 1960s, 7 or 8 percent of those graduating from college entered the military; the Viet Nam War draft doubled this. In the first decade after the draft was abolished, as the baby boom generation increased the flow through colleges, the percentage of graduates entering the military fell to around 3 percent, and today it is about 1.7 percent.[5]

These demographic effects are intensified by patterns of everyday life that separate civilians and service members. For students at many universities, and most noticeably at elite institutions, Reserve Officer Training Corps (ROTC) programs are not available, and military service is not regarded as a natural career option. As the military has contracted, rising proportions of officers are drawn from service academies and a declining fraction from civilian colleges. Later in their careers, most officers will receive their advanced education in military, rather than civilian, graduate schools. Rarely do civilians attend military institutions. Further, military communities provide housing, commissaries, and medical systems that distance them from many Americans (although base realignments and closures are reducing the number of these communities).

This problem will intensify if the military, especially in its officer corps, is perceived as hostile, or at best indifferent, to assimilating women and minorities. The U.S. Armed Forces have been more successful than most other U.S. institutions in opening opportunities to historically disenfranchised sectors of American society, but minorities constitute less than 15 percent of the

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[5]These estimates are drawn from data provided by the Defense Manpower Data Center.

officer corps. They are concentrated in the enlisted ranks, a third of whom are African-American, Hispanic, native American, or Asian-American.

These disparities can present difficulties when racial tensions run high or enlisted members seek mentors and role models from the officer corps. More fundamentally for the risk described here, in the long run they can challenge the credibility and support accorded to the officer corps by American society at large. At present, more than 25 percent of the U.S. population describes itself as African-American, as Hispanic, or otherwise as non-European; by the year 2050, this is expected to rise to 50 percent. Yet, 85 percent of the officers now in the United States military do not describe themselves this way. Similarly, fewer than one in seven U.S. military officers is a woman.

Some components of this arithmetic are not immutable and their consequences inevitable. The composition of the military could change, long-term demographic projections may not materialize, or categories according to which we now differentiate ourselves may cease to seem relevant. Differences between the officer corps and American society could also prove to be immaterial. It should be evident that there is a risk here, however. If the need for American military power is seen as less compelling, if the Pentagon is seen as wasteful, and, at the same time, our military leadership is perceived as distant and different from much of American society, will the military be sustained in its need for resources? In its frequently controversial operations? In its recruitment? Our third great risk of failure is that the United States may become less than fully committed to its defense and the military.

Having identified three principal concerns, let us turn to what to do about them. Each demands change in our way of thinking and in methods of operation.

2. Preventing Major Military Competition

For a long time our highest security priority has been to deter attack by an adversary with military capabilities comparable to ours. One strand of this effort remains: we need to continue to achieve nuclear deterrence. But the absence of a peer conventional competitor permits us to refocus our main efforts. Our most difficult and important challenge will be to reduce the likelihood of major military competition reemerging. The aim is not to *prevail* over a competitor; it is to *avoid* a competition.

If we accept this goal, we need a strategy clearly focused on achieving it. Such a strategy operates at two levels. It needs to be general, affecting our relations with all possible competitors, and it needs to be particular, directed to reducing the likelihood of competition with specific countries. Strategies affecting particular nations are beyond the scope of this essay, but the general strategy can be described.

A strategy designed to reduce the likelihood of military competition must have military, economic, and diplomatic components. These are not radically different from policies now in place, but their conceptual underpinning is different. The predominant error of our time may be mindless pursuit of old goals when we are playing a new game. A more sharply and

soundly defined understanding of what we are seeking will change our emphasis and better direct our efforts.

The new approach would complement the existing doctrine of deterrence with a strategy of dissuasion, with the aim of discouraging others from military competition with us. Our predominant aim is not, as in the past, to diminish the influence of competitors, but rather to lessen their inclinations to engage in destructive military competition. Seen in this light, our military priorities and our economic and diplomatic initiatives take on different emphasis.

Long-term military investments are the foundation of dissuasion. Because military investments frequently do double duty as mechanisms of deterrence, it is natural to defend new investments in old terms, but shifting the focus from deterrence to dissuasion casts some military measures in a clearer, and more compelling, strategic context. Three examples make this point:

- Why our military presence abroad should be continued as a means of dissuasion, even though it is becoming less relevant as a mechanism of deterrence
- How emphasis on near-term readiness and maintenance of a large force structure at the expense of modernization is ill conceived because it excessively focuses on deterrence
- How investments in quality of life and higher pay for non-ed officers may be better justified.

After considering these examples, this discussion will turn to diplomatic and economic tools that can be used in support of a strategy of dissuasion.

The United States now maintains approximately 100,000 troops in Europe and a similar number in Asia, and every 6 months we deploy some 20,000 sailors and marines in carrier battle groups, amphibious ready groups, and smaller groups of ships to every corner of the globe. Are these efforts justified by a theory of deterrence?

At one time they were, and, in some places and to some extent, they still may be. In the four decades after the Second World War, the Soviet Union threatened Western Europe, and there were two major land wars in Asia. Today, an unrestrained Iraq, Iran, or North Korea could attack its neighbors, but it may well be questioned why American troops in Europe, Japan, or Korea are required to counter these threats, given the strength of our allies and weakness of our opponents. Such questions will intensify if, for example, Korea reunifies, Russia persists in its weakness, or less-hostile regimes replace our present opponents in the Middle East.

American presence around the globe is justified, however, if it dissuades others from massive military investment. Without Americans in Asia, for example, it is likely that both the Japanese and the Chinese would greatly accelerate armament as a result of concerns about one another. Moreover, our assurance of the flow of commerce, in general, and oil, in particular, allows these and other nations to integrate their economies into world markets without establishing large navies. In this manner, we disconnect economic power from military power and thereby diminish the arguments and incentives to invest in military might. On the Continent in Europe, in the Mediterranean, and in the Middle East, American presence moderates the military buildup and the military ambitions of regional powers that could become super

powers, if they pursued regional aggression. In the long term, accordingly, American presence buys security not merely for our allies but for America itself, and not merely for today but also for the future. These are not deterrent investments, as deterrence was understood during the Cold War, but dissuasive investments, and as such they are well warranted.

We need a "dissuasive" strategy of investments as well as operations. A technologically outdated military establishment invites military competition. Avoiding this risk is not just a matter of expenditure. It relates, above all, to the kind of investments we make and to our openness to innovation. Even after the fall of the Soviet Union, the dominant emphasis in the early 1990s on readiness and maintenance of large forces was implicitly responsive to a model of deterrence. Large, ready, and available forces deter present competitors, but a strategy of dissuasion would increase the emphasis on development and modernization. The greatest temptations and opportunities to compete with us will arise if another nation is more adept than we are at absorbing powerful and rapid technological innovations.

For example, semiconductors have doubled in capacity every 18 months since coming of age in the 1960s. If this continues, we will confront a hundred-fold increase in computing capability between now and 2009. These are civilian technologies, and our opponents have access to them. Our risks are grave if these opponents prove to be more adept than we are in harnessing them to military ends. On the eve of World War II, the German Wehrmacht managed just such an application by combining commercial developments in the internal combustion engine and in telecommunications to produce the military equipment and

doctrine for a new way of war: blitzkrieg. The British armed forces, for their part, quickly assimilated the infant technology of radar and used it to win the Battle of Britain.

Our strength is also our problem. Innovations that boldly exploit rapidly evolving technological opportunity are often impeded by an excessive commitment to present priorities. As in industry, there is much talk, and indeed sincere endorsement, of the need for innovation in our defense establishment, but the experience of industry is suggestive. For example, in the 1950s, several established companies held the beginnings of the semiconductor industry in their hands, but—in less than the 30-year horizon posited in this article—they lost their positions. Their failure can be traced to not decisively reallocating resources from the product lines of the present to those of the future.

In retrospect it should be no surprise that manufacturers earning handsome profits from vacuum tubes had difficulty embracing semiconductors. Dramatic innovation demands not merely reallocating resources, but also cannibalizing long-favored bureaucratic children to feed the hungry new arrival. The problem in innovation is not securing acceptance of the new; it is establishing a willingness to surrender the old. This is particularly difficult when the indicators of payoff are ambiguous. Everyone is willing to flirt with the future; few will truly embrace its uncertainties at the expense of a comfortable present.

Within the Department of Defense, the present is comfortable and the past is misleading. Nothing seduces like success: why change when your existing method of business has just proved itself a winner in a prolonged contest? Unfortunately, this contest points us in the wrong direction. The Soviet Union was a substantial opponent, but it was not, by and large, an innovative

one; it was an enemy characterized by bulk, not agility. As a result, we could usually maintain an operational advantage even though our development and acquisition systems were ponderous. While our bureaucracy, commendably, settled for no less than being superior to its Soviet counterpart, regrettably, it also did not need to be more than that. Consequently, while commercial industry transformed its management processes to facilitate rapid decisionmaking and innovation, DOD came more to resemble the Soviet systems it defeated than the private sector systems evolving elsewhere. If DOD is to foster an intense commitment to innovation it will have to overcome decades of habit.

A white-hot commitment to innovation is especially hard to achieve in our national security establishment. When the product is security, it should not surprise us that its purveyors are risk averse. Currently predominant theories of deterrence focus on near-term risks, which reinforces existing organizational biases. In our military, rewards and incentives are for present performance; tours are so short and the budgeting process so extended and unstable that major innovation is difficult to sustain. The fear is to be unready *now*, not to be *unprepared for the future*. In Congress, the strongest incentives are to continue spending on products that constituents now produce and on infrastructure that sustains constituents in their present jobs. As a result, we remain too committed to business as usual. Instead, we should realize that our predominant priority should be to avoid the emergence of a major competitor.

How do investments in the quality of life and better pay for our service members relate to concerns about the development of a major competitor? This relationship is powerful because a

career professional military force is one of the longest lead items that an opponent who challenges us would have to replicate. Decades are required to develop senior noncommissioned officers, colonels and captains. If we retain a high proportion of the best of these for 25 years or more, we make it apparent to others that competing with us is a long and difficult task. Losing these men and women forfeits that advantage. Propensity to stay in the military is most powerfully shaped by the professional challenges servicemen and women encounter and the equipment, training, and esprit with which they meet these challenges. Beyond this, however, investment is warranted in pay and other basics that affect commitment to military careers, because these expenditures are not just benefits to our military personnel but are also contributions to our national security.[6]

Similarly, a stronger case needs to be made for the power of economic and diplomatic tools as key elements in a strategy of dissuasion. In the context of such a strategy, these are tools of integration and not, as they were during the Cold War, of isolation. In the midst of a military competition, military defense demands dominant attention; political and economic tactics are secondary. Absent a military competition, the tools are more balanced. If military competition is to be avoided, integration is at least as important as deterrence.

Our treatment of Germany, Japan, and Italy after World War II stands as the shining example of the rewards of integration. Marshall Plan expenditures and substantial American investment

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[6]Participants report that when Sergei Akhromeyev, Chief of the Soviet General Staff, visited U.S. military units in the 1980s, his first reaction was to attempt to emulate our technical achievements, but he could develop no rapid plan for rivaling our corps of noncommissioned officers. In addition to the long lead time associated with such a project, his difficulty derived from differences in our competing societies.

made these countries into allies, not competitors. This is the right precedent, but differences in circumstance make it difficult to apply. Though we may proudly recollect the Marshall Plan and the revitalization of Japan as acts of magnanimity and manifestations of our generosity, these activities were catalyzed by a need for partners in the face of economic difficulties and Communist threats. The Marshall Plan was not announced until 1947, two years after the surrender of Germany. Before the Soviet threat was clearly recognized (and labeled as such in Churchill's 1946 "iron curtain" speech), allied plans to keep Germany from endangering peace called for limiting its postwar economic and military power. Similarly, postwar plans for Japan did not aim to build a strong ally; the most important catalyst to Japan's post-war recovery was the Korean War.

Moreover, our deep involvement with the affairs of these nations was as an occupying victor after an extraordinary military conflict. This gave us both the power and the motivation to address their reconstruction. We were engaged, and we well knew the price of indifference. We also knew that the struggle of the preceding years was over. Surrender and occupation marked the end of the old era and left no doubt that the new one would be different.

These catalysts for action are not now present. Farsightedness and will even greater than was achieved in the Marshall Plan are required if we are to help such recently hostile nations as Russia and China, particularly when we do not have to compete with another power for their loyalties. These are highly imperfect, corrupt, authoritarian, and potentially hostile nations; the natural inclination is to follow the policy of the past, to isolate them, or at least to be indifferent to them, until they

become more like us. Giving priority to their integration means taking the Cold War strategy we once successfully applied to isolate the Kremlin and turning it inside out.

We cannot say with assurance that aid will place Russia on a path toward normality, and it cannot be proven that China's intertwining with the world economic system will secure a peaceful future. Whether China emerges as a major military competitor to the United States will depend on factors we cannot control. Particular circumstances will and should affect our tactical judgments about particular overtures (for example, when and under what conditions to provide funding for Russia, or to admit China to the World Trade Organization). Our overarching strategy should be rooted in the proposition that investing in the development of China and Russia as full partners in the world system will be more effective, less expensive, and vastly more benign than another arms race.

Imaginative and dedicated pursuit of the goal of "integration" would also produce diplomatic initiatives as sweeping as those undertaken by the Cold Warriors who created NATO. Traditional arms control measures, like the START treaties, usefully lower levels of weaponry and therefore of risk, but their primary goal is to police the risk, rather than to eliminate it. Similarly, whether well or ill advised, NATO expansion that does not include Russia is at best irrelevant to; at worst it retards the integration of a major competitor.

Integrative efforts deserve higher billing, and the seeds of such a program are present. America pursued such a policy when, in the face of some resistance and difficulties, it made Russian troops a part of the Implementation Force created to police Bosnia. The NATO "Partnership for Peace" program, the Nunn-

Lugar Legislation, the resulting "Cooperative Threat Reduction Program" with Russia, recent agreements to share information with Russia about missile launchings, and agreements to avoid incidents at sea with the Chinese are integrative. With these as illustrative initiatives, the broader goal of avoiding military competition should be articulated and concerted efforts taken to devise steps toward that end.

The particulars of any such program are debatable and difficult to establish, but the efforts are warranted. In the long term, the most important question about this period of opportunity will be whether we used it to avoid future military competition. Our aim should not be to win; it should be to avoid the competition. Only with our concerted effort, imagination, and willingness to take risks will the 21st century look different from its predecessor, which was plagued by military competition.

3. Countering Traumatic Attacks

For millennia, offensive warfare has aimed to destroy, degrade, or capture an opponents' troops, weapons, property, and territory. Since the invention of gunpowder in the mid-14th century, the main means of doing this has been by explosive weaponry: bullets, bombs, mines, and missiles. The second risk to American security over the next decades is that both this aim and these means may change. The aim will not be to destroy American military power (that's too difficult), but rather to sap the will to use it. The means will be nonexplosive warfare, conducted with NEW weapons. The manifestation of these changes will be "traumatic attacks."

How do NEW weapons differ from their predecessors? What special aims of traumatic attacks are amplified when these weapons are used? What kinds of investments would diminish risks from these weapons and these types of attacks? This chapter describes three broad changes, going well beyond our traditional reliance on deterrence, that are likely to be necessary if we are to maintain our security in the 21st century.

In the late 20th century, traumatic attacks have predominantly employed explosive munitions placed in or near buses, cars, airplanes, and buildings. Accordingly, we now focus on explosives when we attempt to protect the security of

airports, military bases, government buildings, and other key facilities and means of transport at home and abroad. At the same time, we are making well-warranted efforts to reduce and control the world stockpile of nuclear weapons.

The dangers of the future, against which we are under-protected, arise from NEW weapons, predominantly biological and information warfare, secondarily from chemical or radioactive materials. Attacks of this kind are less familiar but have grave potential for causing mass disruption, panic, and (in the case of biological weaponry) deaths that could be counted in the hundreds of thousands.

An understanding of the most novel activities, biological and information warfare, will illuminate the character of these weapons.[7] Biological attack is the dissemination of bacteria, viruses, or toxins to cause debilitating or fatal illness through breathing, drinking, or absorption. Weapons of this kind are

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[7] Biological weapons are novel but not unprecedented. In the Middle Ages, bodies were catapulted over the walls of castles under siege in order to spread plague; in America's French and Indian Wars, Indians were given blankets infected with smallpox; in our Civil War, Sherman's march to the sea was impeded by poisoned wells; and in World War II, Japanese Unit 731 experimented with biological weapons that killed as many as a thousand Chinese civilians.

This subject is, for expository purposes, given limited space. Other types of NEW weapons should not be overlooked. Chemical weapons, the most pervasive and familiar, are somewhat more confined in their likely effects. They are also relatively easy to focus and control. Accordingly, they may be the most likely to be used. Radioactive weapons (though not necessarily explosive) lie at hand wherever there are large nuclear programs, whether developed for peaceful or military purposes. In Russia, perhaps the greatest source of risk in this regard, there are estimated to be some 2.5 million pounds of enriched uranium and plutonium. More than half of that is embedded in some 24,000 nuclear weapons, 7,000 of them mounted on missiles, 5,000 dispersed as tactical nuclear weapons, and 12,000 in storage. The balance of this weapons-grade material is in more than 50 military and civilian research institutes. With so little state power and economic well being in Russia, there are high risks that this radioactive material will be bought or stolen and used for traumatic attack.

extraordinarily potent. It has been calculated that a millionth of a gram of anthrax will first sicken and then, within a week, kill anyone who inhales it; taking account of dissipation and delivery over a metropolitan area, a kilogram has the potential to kill a million people.[8] If an infectious agent like plague or smallpox is used, a chain reaction can be induced, and the effects of an incident may be unbounded. Beyond its ability to kill, a biological attack can be highly disruptive. Sickness induces panic and psychosomatic effects. Large numbers of people in panic, flight, and illness can quickly overwhelm our regular systems of care, transportation, and communication.

It is striking how analogous information attacks are to their biological counterparts. We even use similar terminology when we describe a computer "virus." A single computer virus, like its biological equivalent, can have widespread and proliferating effects. Whether embedded in software in advance or disseminated near the time of use, a computer virus can destroy or distort data in the information and communication systems upon which military and civilian life depends. The gravity of the Year 2000 problem—a "natural occurrence" that corresponds to information attack as natural outbreaks of disease do to biological warfare—highlights our dependence upon, and yet the vulnerability of, information and communication systems.

Biological and information attacks share more than a dozen characteristics that can make future security problems very different from today's. These attacks will not depend on, or be defeated by, mass, either of armies or of physical barricades.

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[8]The appropriate absence of an offensive program and limited test information and experience make these estimates subject to debate.

They do not require large, visible methods of production. Potent biological weapons can be made in a room and held in a vat. The forces of cyberspace can be marshaled on a desk and stored on a disk. The skills and assets required to wage this kind of war are very like those associated with legitimate civilian activities in the pharmaceutical and computer industries and are rather readily and inexpensively obtained. Once prepared, these weapons will not require missiles, shells, or other very visible, technically demanding, or expensive methods of delivery.

A single computer can launch an information attack. An ordinary crop sprayer can generate a fatal anthrax cloud over 80 miles long. A single leased airplane dispersing a biological agent can kill more people than died in any month of World War II. The effects of these attacks can occur for substantial periods after delivery, and consequences must be measured by the uncertainty, panic, and physical effects they will cause.

Distinguishing among crime, terrorism, natural occurrences, and war become difficult when NEW weapons are used. Because large financial resources, massing power, and delivery systems are not required, it is not necessary to be a major nation to be able to conduct this type of warfare. Though subject to use by a major competitor, second- or third-tier states, subnational groups, or even individuals may present threats from biological and information warfare. A large industrial base is not required to develop or deploy NEW weapons, because they are postindustrial weapons; in the postindustrial era, the power to wage war is no longer monopolized by nation-states.

Furthermore, the characteristics of low visibility, delay, and natural occurrence can be exploited to leave uncertainty as to whether a military attack occurred and, if it did, who conducted

it. This makes retaliation difficult. Because deterrence depends on a credible ability and will to retaliate, deterrence will not be as effective in suppressing traumatic attacks as it is in discouraging other forms of warfare.

These are fast-growing technologies. While explosive weapons and their delivery systems take decades to evolve and produce, NEW weapons multiply in variety and potency with a speed that characterizes the biotechnology and software industries from which they stem. Defenses typically cannot keep pace with offenses that are so easily varied and proliferated.

Taken together, more than a dozen attributes differentiate these weapons. They cannot be countered by the usual methods. Worse still, we are handicapped in recognizing changes needed to counter these weapons. The military establishment is not attuned to these issues. The familiar weapons are explosive weapons. The familiar battles are the clash of armies, navies and air forces. Familiar battlefields are the places where militaries grapple with their opposite numbers. The traditional business of warfare is explosive weaponry, not disease (the province of doctors) or information (a support function). Further, we do not have well-developed offensive programs that might inform and stimulate our defensive efforts. Since 1969, we have refrained from any offensive program involving biological weapons. The decision to refrain from an offensive program, though appropriate, is like the amputation of an arm; the military is struggling to grasp a load with one hand when it is used to using two. The offensive possibilities of information warfare are more readily understood, but, in part because of our own vulnerabilities, we are inhibited about practicing and openly debating the offensive aspects of information "traumatic attack."

Consequently, in this area also, our ability to grasp the risk (and to counter it) is weak.

For their part, civilian authorities are not used to looking upon their domains as battlefields. The FBI is concerned with developing criminal cases; the Center for Disease Control, the Public Health Service, and local power companies are focused on natural events, not defense against attacks. Our military and civilian agencies are not commonly or easily coordinated. We are, in short, ill positioned for coping with NEW weapons and most especially so if these weapons are used in "traumatic attacks" against our civilian populations.

NEW weapons can be employed in traditional military settings or to undermine reinforcement and to mass in preparation for conventional warfare. But both biological and information warfare is more potent in less conventional circumstances: it can be used to gain bargaining leverage by threatening civilian populations and to induce a distracting and dispiriting panic in those populations. However vulnerable troops and military information systems may be, civilians are vastly more so. While military forces enjoy a modicum of protective clothing, encrypted systems, and other barriers to biological and information attack, civilian populations are highly vulnerable. Troops are trained and disciplined for combat; civilians, especially American civilians, are not prepared.

Warfare aimed at civilian populations would not be assessed by body counts or territory occupied, but by how the minds of the American public and that of allied populations were affected. Alvin and Heidi Toffler have pointed out that ways of making war

reflect ways of making wealth.[9] In an agricultural age, battles were fought with agricultural instruments (such as horses and swords), the unit of value was land, and victory was achieved by occupation of territory. Industrial-era wars are fought with the products of industry (for example, engines and explosives), and victory is achieved by destruction. In the information age, information and telecommunications are likely to be principal weapons, and molding perceptions may constitute victory.[10]

We have not yet reached the point where perceptions can be molded without events. Traumatic attacks are the thin end of the wedge by which public opinion can be leveraged, the hook on which perceptions can be hung. The hallmark of these attacks is that they are valued not for their physical effects but for their psychological consequences. It was not the occupation of territory or the disablement of the American military machine that determined the value of the Tet Offensive in Viet Nam, the bunker bomb in Lebanon in 1983, or the massacre of soldiers before CNN cameras in Somalia in 1994. Of course, traumas can have the opposite effect and instead multiply national determination; the Alamo, the Maine, and Pearl Harbor became rallying cries precisely *because* of the injury they inflicted. But these were not designed to be traumatic attacks. In retrospect, we can see that the attackers were did not understand the psychological consequences of achieving their material goals. These experiences warn the designers of traumatic attacks that they are working with a most potent power that may backfire or

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[9] *War and Anti-War: Survival at the Dawn of the 21st Century* (Boston: Little, Brown and Company, 1993)

[10] Warfare of this kind is certainly not unprecedented. The allied strategic bombing of Germany and our use of atomic bombs against Japan were aimed, at least in part, at demoralizing our opponents.

get out of control in unexpected ways. The handling of the consequences of events may be more important than controlling the events themselves.

A first and right instinct is to protect ourselves against the NEW weapons. Though we cannot be totally successful in these efforts, we can do a great deal. To defend against biological attack, we can secure large benefits from rapid development and deployment of detector technology; investment in antibiotic and vaccine research; stockpiling of medicines and vaccines; inoculation; refinement and acquisition of simple form-fitted masks to prevent infection by inhalation; improved intelligence; enhanced training; and development of doctrine about how to preempt and, when necessary, respond to a biological attack.

Our defense against information warfare similarly demands more innovative preparation. Our aim should be to prevent intrusions and alterations of data that can misdirect missiles, airplanes, ships, and spare parts and distort financial, utility, telecommunication, and other systems upon which we depend. A deeper perception of these vulnerabilities should lead to greater investments in intelligence and in research and product development for computer and communications security. We should reflect the state of our defenses against these vulnerabilities in our readiness systems, include it in the training of officers, and exercise information protection along with our other defensive skills.

Our efforts to defend against traumatic attacks, however, demand more than the application of these traditional approaches to the new areas of biological and information warfare. Above all, they demand challenging shifts in our conceptual framework. In addition to defense, we need to tailor

strategies of dissuasion, deterrence, disruption, and consequence management to the challenges of NEW weapons.

To reduce the risk of a military competition, a theory of dissuasion needs to take its place alongside theories of deterrence. Dissuasion seeks to avert the development of a major military competitor; deterrence seeks to limit the actions of an established competitor. NEW should emphasize the benefits of pursuing dissuasive strategies even with nations that are not likely to be major competitors. Because NEW weapons can be used or proliferated by second- and third-tier states—even, for example, by a poverty-stricken Korea or an isolated Iran—there is a security reason for trying to tie these states into the community of nations. To counter weapons of mass disruption, it is desirable to bring countries that may be opposed to us to a point where they have a stake in maintaining the world system and thus in avoiding disruption.

Working from a position of military and economic superiority, we can afford, and in our own interests should pursue, openhanded, cooperative strategies that avoid creating pariah states. We are given a further opportunity to do this with NEW weapons. We can, and should, forge a world consensus that emphasizes the moral unacceptability, and therefore the cost in public opinion, from using weapons of this kind. Moral opprobrium is hardly a reliable barrier, but it has dissuasive power, particularly when it must be considered by terrorist groups seeking to establish the legitimacy of their cause.

Where dissuasive strategies do not succeed, we will, and should, rely on deterrent policies. However, strategies of deterrence must be extended and reworked to take account of the likelihood that terrorist groups and individuals are among

potential users of NEW weapons. Deterring those actors (and their acquisition of NEW weaponry) is different from deterring state actors. We need to understand the psychology and structure of nonstate groups and recognize that old techniques (threats of nuclear retaliation, for example) typically will not work against them.

When confronting terrorist groups (and some resolute second- and third-tier states), disruption may be a more important strategy than deterrence. While deterrence threatens reaction, disruption is proactive: it intrudes upon would-be attackers, with preemptive strikes, inspections, arrests, or such pressure of detection and restriction on freedom of movement as to thwart intended strikes. Our society is uncomfortable with disruption: it threatens civil liberties, risks alienating public opinion (or creating martyrs) through heavy handedness, provides little assurance of success, and commits us to innumerable small battles without the likelihood of eradicating threats. It is, however, an essential tool against terrorism. We need to develop strategies of disruption that are closely controlled by civil authorities, narrowly targeted to thwart traumatic attacks by the least drastic means, and compliant with our own and international laws.

Beyond this, a fourth approach is needed to complement deterrence, dissuasion, and disruption—"consequence management." This approach would develop procedures and resources to limit the effects of attacks. Consequence management is required because our reliance on information systems will, over the next decades, persistently outrun our abilities to protect these systems completely. Similarly, biological, chemical, or explosive attacks will be so easily mounted, against targets so numerous and so exposed that society cannot be

insulated completely against this trauma. Defense, dissuasion, deterrence, and disruption are worth substantial investment, but our working hypothesis ought to be that, despite our best efforts, successful traumatic attacks will occur.

Accordingly, we should invest in managing the consequences of attack so as to reduce the resulting trauma. By this means we will also diminish the incentive for opponents to utilize this form of attack. In the information context, this requires designing systems that are redundant and compartmentalized so that, when successfully attacked, failure is "graceful" rather than catastrophic. It involves the design of data systems that are camouflaged to confuse intruders, tagged and encoded to detect manipulation, and encrypted to minimize the benefits of intrusion.

In biological defense, consequence management requires investments in our public health systems. We need standby medical capabilities so that attacks can be promptly recognized and therapeutic regimes initiated before symptoms become pernicious. In both information and biological defense, consequence management must include the creation of public and military information systems to diminish panic and confusion.

Such an approach to consequence management must also carry with it a rethinking of the anachronistic distinctions between "here and abroad" and between military and civilians. Traumatic attacks that threaten our national security may be aimed at our troops and allies abroad, but they are as likely to be aimed at people and activities based in the United States. Certainly, cyberspace has no geography, and anyone who doubts that biological agents can easily be imported into the United States

need look no further than the flow of drugs into this country. Once imported (or obtained), biological agents are easily disseminated by use of readily available crop sprayers and other such devices. So boundary defense cannot be relied upon to defense against cyber invasion or biological agents.

Investments in protecting civilians against these untraditional threats have a rationale and benefit not present when considering civilian protection against conventional weapons. Illness occurs naturally, and information security is challenged every day in our economy; therefore dollars used to protect us in these arenas yield everyday rewards. "Civil defense" expenditures may be questioned, but by contrast, "public health" investments (for example, in the Centers for Disease Control and the Public Health Service) and information security investments are well warranted for coping with natural as well as military contingencies.

When dealing with NEW weapons, a line of separation cannot be drawn between military and civilian systems. Our ability to project military power depends, both here and abroad, on civilian utility, transport, telecommunications, and finance systems, which in turn depend on properly functioning civilian information systems and civilian employees. All can be undermined or overwhelmed by driving massive numbers of civilian populations away from or toward centers of activity. It is not likely that our response to a biological threat against Denver would, or should, be limited to the Denver Police Department, or even the FBI and Federal Emergency Management Agency. Nor could we ignore such threats against civilians in host nations that

receive and sustain our forces when they are deployed abroad.[11]

Sustaining our military power requires dealing with the consequences of traumatic attack. To do this we will have to focus on NEW weapons, in addition to explosive weapons; on terrorist groups and individuals, as well as major powers; on consequence management, as well as on defense, dissuasion, deterrence, and disruption; on civilians and civilian systems, not just military personnel and operations; and on our vulnerabilities at home as well as abroad.

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[11]The value we place on civilian life renders us vulnerable in other ways as well. Regrettably, our opponents can use their own civilians as hostages and shields. During *Desert Storm*, the Iraqi Air Defense system could not stop the allied bombing of Baghdad. But a complete halt was forced for 4 days when Iraq publicized the deaths of its women and children in the U.S. bombing of the Al Firdos bunker. See Thomas A. Keaney and Eliot A. Cohen, *Gulf War Air Power Survey Summary Report* (Washington, D.C.: U.S. Government Printing Office, 1993), 69. In Somalia, demonstrations of women and children surrounded, and thereby protected, armed men who threatened U.S. Marines. More recently, the Serbs used U.N. peacekeepers and Muslim civilian populations as "human shields" to prevent NATO air attacks. The development of both highly precise missiles and of nonlethal weaponry is, in large measure, an effort to respond to this tactic.

4. Sustaining Domestic Support

In the first years of the 21st century, DOD requirements are likely to increase as the large stockpile of planes, ships, tanks, and weapons bought in the 1980s reaches the end of its useful life. Costs will be further increased if peacekeeping operations, with resultant wear and tear on people and equipment, continue at their recent pace.

At the same time, three problems may combine to erode the support DOD needs to perform its mission:

- Security investments will be shortchanged unless a clearer and stronger consensus is established by a persuasive rationale for their necessity.
- It is likely that defense spending will be increasingly scrutinized, held to standards common to the rest of society, and found to be unacceptably inefficient when measured by those standards.
- DOD may be perceived as an island at a distance from society, an island populated by members of the military who may be viewed as unrepresentative of society as a whole.

To counter the first problem, we must heighten understanding that our national security depends in the long term on dissuading other nations from competing with us militarily. We are in a rare

position of such exceptional strength that others do not now compete on our level, but substantial effort and continued investment are required to sustain that position.

This support is endangered if we do not make DOD more evidently efficient. DOD has tried to avoid waste and in innumerable ways pursues efficiencies, but to truly confront the second problem, it must come to grips with the fact that fundamental efficiencies within the department cannot be pursued only incrementally. Perhaps this point can be put most strongly by recognizing that, in the wake of *perestroika* in the Soviet Union, and privatization in China, the DOD has succeeded to the dubious honor of being one of the world's last bailiwicks of central planning. Indeed, in some respects, the DOD is a Communist system. The department does not normally provide decisionmakers with accurate price information and incentives to minimize costs, but instead supplies them with directives, quotas, and punishments. It does not reward success but instead cuts the budgets of those who are efficient and adds funds to those who show a "requirement." Thus, it takes from each manager "according to his abilities and gives to each according to his needs." In sum, the same methods of doing business that disabled the Soviet Union are evident in DOD. *Perestroika* is no less warranted in the second case than in the first.

Some effort has been made in that direction under the more American rubric of "reengineering." The intuition behind reengineering is sound—it is a philosophy of delegation rather than direction—but the analogy to the Russian State is again suggestive. It is not enough to tear down the old system; chaos and declines in productivity will ensue unless the recipients of the

previously centralized authority are given the proper incentives and information to act on those incentives.

A description of techniques to achieve this is beyond the scope of this essay. Efforts along these lines underway in the Department of the Navy include permitting the private sector to bid to perform basic services (base support, accounting, maintenance, housing, etc.) so as to induce competition and force recognition of true costs; placing budgets in the hands of customers (for example, fleet commanders) rather than suppliers and then having suppliers compete to perform services; budgeting for the *true* costs of military manpower rather than treating (as is common) it as though it were almost a free good (a legacy of conscription); and using metrics that measure the value and efficiency of services rather than merely the size of bureaucrat workloads.

All components of DOD must come to grips with this challenge, because restructuring is fundamental not merely to efficiency, but also to credibility and therefore to viability. In the future, if DOD cannot extract benefit more efficiently from what it is given, it will (unlike in the past) be given less.

At its deepest level, the issue of public support runs beyond efficiency. While maintaining a professional and merit-based military, responsible decisionmakers also need to address the need to bring the DOD and American society closer together. Practical steps to achieve this include stepping up recruitment of minority officers, expanding the roles of women, and seizing opportunities to immerse officers in civilian society. Because officer recruitment often occurs at the beginning of college, some 4 years before officers enter the force, and because it takes officers more than 25 years to become flag officers, today's

recruitment patterns shape the leadership of the military three decades from now. In 2028, America will be some 40 percent Black, Hispanic, and Asian, but our officer corps today is only 15 percent minority. Further, minorities comprise less than 20 percent of current officer recruits.

The problem this will cause should be apparent, quite apart from any issues of social policy. Our military cannot live apart from our society. That risk is low for our diverse and fluctuating enlisted ranks, but it is high for our much smaller and less representative corps of career officers. With the rise of Jacksonian democracy, the Army and Navy had to transform their officer corps from being a "gentleman's service" to one open to all classes. All services must similarly now transform their officer corps from being predominantly a white man's milieu to being truly representative of America. At the same time, attention needs to be focused on how to better recruit from elite educational institutions, at many of which ROTC units and a tradition of service have lapsed.

For the same reason, all four services must move further and faster in their assimilation of women. Mistreatment or unwarranted narrowing of opportunities for women in the military is morally condemnable, it erodes the respect of service members for one another, and it is an unconscionable waste of talent. But, for those who think these moral arguments reflect only a penchant for political correctness and that the practical benefits are not worth the effort, the risk identified here suggests another reason. As society at large accords women more equality of power and professional acceptance, the military must do the same. The predominantly white male leaders of today's services should press to recruit minorities and women into their officer

corps not as an act of social engineering, but because the military itself is at risk if it is perceived as alien to those who share power in the larger society.

In another dimension, more attention needs to be paid to opportunities to expose members of the military and civilian populations to one another. Programs that support the transition of servicemen and women into the civilian sector as schoolteachers should be supported. Greater attention should be paid to the impact of advertising not only on the recruits at whom it is targeted, but also on society at large. Portraying a service, as some recent advertisements did, as an opportunity to "drive something hot" may draw recruits, but it misleads the public into thinking about the military as an institution characterized by an ethic of indulgence rather than responsibility.

Although special needs warrant separate establishments for military education and military medicine—our military personnel are professionals who need to maintain unique skills and a warfighting ethic, and military doctors face deployment and mobilization demands often incompatible with civilian practice—opportunities should still be sought for intertwining military and civilian systems of education and medical care. Similarly, present debates over housing for military service members should recognize that it would serve a larger end to bring service members into the civilian housing market rather than to isolate them on bases that breed a cantonment mentality. Military members are most often model citizens, and all will benefit from increasing interaction of military and civilian sectors.

Initiatives to move away from military-only systems are often warranted on grounds of economy; this perspective suggests a more overarching purpose. To allow the military services to drift

away from the society that must nurture them is to put great institutions in great jeopardy.

5. Conclusion

Three overarching risks have been identified that should receive priority in shaping our thinking about national security over the next 30 years:

- A major competitor may deprive us of the unusual security we now enjoy and can provide to others. The extraordinary pace of technological change and its ready availability through civilian channels enhances the possibility of rapid development of a highly capable competitor.
- Attacks may be launched against us by less than major competitors, including nonstate actors, in an effort to demoralize or disrupt our ability to use our power. The proliferation of NEW weapons expands the availability of means for inflicting trauma on society and renders America's civilian infrastructure and population particularly vulnerable to attack.
- If we achieve our goals of avoiding a major competitor and of avoiding traumatic attacks, the loss of obvious and potent threats will increase the risk that we will not properly sustain our security establishment. This risk is unnecessarily intensified if our officer corps is distanced from society at large by recruitment that is not representative or by separation from civilian society in housing, education and other

circumstances. It is further intensified to the degree that DOD is perceived as bloated and inefficient in its operations.

To diminish these risks we need new modes of thought. The task of avoiding the rise of a major competitor is not one of deterrence (causing a capable opponent not to attack), but rather one of "dissuasion" (inducing potential opponents not to arm). It calls for a program of investments weighted differently from a program built around deterrence—for example, it gives greater priority to long-term modernization as compared with near-term force size. It also gives greater weight to diplomatic and economic tools and uses them to integrate, rather than isolate, potential competitors.

Because NEW weapons can be used by second- and third-tier states, dissuasive strategies need to be applied to them and not merely to countries that may become major competitors. Further, because these weapons can be employed by terrorist groups and individuals, new strategies of deterrence will have to be developed beyond those (like nuclear response) that are applicable to states. "Disruption" of these groups will also be an important part of our repertoire of responses: we will rely more heavily on arrests, preemptive strikes, sanctions and efforts to limit the free movement and economic support of our opponents.

Disruption is not likely, however, to be as consistently effective against numerous nonstate actors as deterrence was against the Soviet Union. As a result, we will need to place greater emphasis on consequence management. This is especially appropriate because attacks of this type are aimed at

affecting perceptions. If the consequences of an attack can be controlled, so can perceptions of its significance.

Civilians are especially vulnerable to NEW weapons. They are likely to become targets when an attack is made to inflict psychological trauma rather than to control territory. Accordingly, greater priority should be given to protection of civilians and civilian infrastructure. Sensitivity to NEW methods of attack will also erode the long-standing but now anachronistic distinction between law enforcement at home and warfare abroad. No such distinction is viable in cyberspace or in dealing with weapons such as biological agents that can be delivered with low visibility by individuals inside the United States.

The risk of loss of popular support should intensify efforts to make DOD more efficient. To achieve this, it must move away from a system of command/control/quota management and toward more market-oriented systems that establish correct incentives and guide managers by appropriate pricing. Furthermore, the department needs to recruit officers in a manner that makes them more representative of the public at large.

An array of changes is urged to give these three risks appropriate priority. These propositions are, of course, subject to dispute. Are the identified risks real and properly described? Should they receive the priority urged in this essay? If not, what other risks should predominate in our thinking? Are the programmatic consequences sketched here correct? Would other, less risk-focused methods of provoking discussions of

priorities, or other time frames,[12] yield more powerful insights or consensus about programs? Whatever differences may be illuminated by pursuing these questions, this essay will have succeeded if it encourages efforts that are both sweeping and particular. The two modes of thought are, and should be, connected. To return to a proposition advanced in the Introduction to this essay we must both "fathom the unfathomable" and then, based on our very imperfect exploration, "pay cash."

The test of this very probably controversial discussion will not be whether others endorse the program presented here, but whether they generate their own programs, strongly rooted in a clear statement about dominant concerns, and quite particularized in the translation of these long-term concerns into near-term priorities. By focusing on what should most concern us for the long term, we can overcome the tyranny of the everyday. Our goal must be to build a national security establishment that is strong in an enduring, and not merely a transitory, way.

Each generation of policy makers sees itself as living in "the best of times and the worst of times." For our predecessors the worst times were when the Soviet Union posed a critical national security risk to the United States and its allies. The best included

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[12]Because it is exclusively focused decades ahead, this essay slights very appropriate concerns about the nearer future. Moreover, this discussion oversimplifies the disjunction between near- and far-term concerns. To the extent we successfully cope with present challenges we are likely to benefit in the future. Readiness today also raises the capabilities and morale of tomorrow's force. The ability to fight a "major regional war" may keep a near-term regional power from becoming a long-term major competitor through its use of intimidation and battlefield victories.

the achievements of Marshall, Truman, and five decades of other leaders here and abroad in constructing powerfully appropriate strategies to respond to the challenge.

What is special for us is that for the first time since just after World War II, we have the opportunity and the requirement to lay a fundamentally new foundation for the Nation's security. To do this we must develop a consensus about the range of challenges we anticipate. Then, like our predecessors, we must develop and debate our tactics in light of these challenges.

About the Author

Richard Danzig was sworn in as the 71st Secretary of the Navy on November 16, 1998. From September 1997 to November of 1998, he was an adjunct professor at Syracuse University's Maxwell School of Citizenship and Public Affairs, and a Traveling Fellow of the Center for International Political Economy. Mr. Danzig also served as the 26th Under Secretary of the Navy, from November 1993 to May 1997, at which time he was awarded the Defense Distinguished Service and the Navy Distinguished Service Awards.

Mr. Danzig was a Washington partner of the national law firm of Latham & Watkins from 1981 to 1993. From 1979 to 1981, Mr. Danzig served as Principal Deputy Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics. Prior to that, he served for a year and a half in the same office as a Deputy Assistant Secretary.

Mr. Danzig has taught contract law at Stanford and Harvard Universities, lectured extensively on a variety of national security and legal issues, and published numerous articles on legal topics and a book on American and British contract law.

A graduate of Reed College, Mr. Danzig also holds a J.D. degree from Yale Law School, as well as Bachelor of Philosophy and Doctor of Philosophy degrees in history from Oxford University, where he was a Rhodes Scholar. Upon his graduation from law school, Mr. Danzig served as a law clerk to Supreme Court Justice Byron White.

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