

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

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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

**February 1999**

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## Table of Contents

Acknowledgments	Page 3
Prologue: Thinking About the Future in the Present	Page 5
Part I. An Introduction to America's "Big Three" Risks	Page 13
Part II. Reducing the Risk of a Renewed Major Military Competition	Page 29
Part III. Countering the Risk of Traumatic Attacks	Page 40
Part IV. Reducing the Risk of a Lack of Domestic Support	Page 54
Part V. Conclusion	Page 60

## 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, beginning in September of 1997, 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 were written in a personal, not an official, capacity. They should not be taken as U.S. Government policy.

Because my thinking has evolved over a number of years, with the benefit of many discussions, it is impossible and perhaps inappropriate to identify all those who contributed to it. Within the Pentagon, I would be remiss, however, if I didn't note the special contributions of my former assistants, Ms. Pamela Berkowsky, CAPT Kevin Cosgriff, CAPT Trell Parker, COL Bob Lee and COL Jay Paxton. I have for them the greatest gratitude and affection. Among many discussions, I would like

especially to note my particular indebtedness to a dinner meeting focused on this topic that was organized for me by COL Russ Appleton, USMC, and to the 1995 Naval War College Current Strategy Forum which gave me, through its keynote address, the opportunity to speak to 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 that is not referred in these pages 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's President, and Sean O'Keefe, Bantle Professor of Business and Government Policy and Director of National Security Studies at the Maxwell School of Citizenship and Public Affairs.

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.

Richard Danzig

## **Prologue: Thinking About the Future in the Present**

The American national security establishment confronts many immediate problems. "Rogue states" attempt to bully their neighbors and attack US interests. A war with Iraq has been followed by years of confrontation over sanctions and inspection. A half-century after a major war in Korea, America still faces a constant and unpredictable threat on that peninsula. State sponsored and independent terrorist groups explode bombs at American embassies, on US bases, in American airplanes. Nuclear, chemical and biological weapons are proliferating. Ethnic and national groups lock in conflict so extensive and bitter that even when, as in Bosnia or Rwanda, US interests are not directly at stake, 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, US policy-makers have tried to attend to the long-term. After the break-up of the Soviet Union in 1991, for example, the Defense Department 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 far-sighted, to identify issues before they reach the point of crisis. There is widespread agreement that America should worry about, and invest in, the longer-term -- the future -- at least as much as in the immediate.

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 under-investing in prevention. Self-interest regrettably re-enforces this inclination. Today's crises shape the reputations of today's decision-makers. By contrast, the energy and skill with which the next decade's problems are anticipated will only be evaluated a decade from now and will be diluted by hundreds of other inputs.

To these universal tendencies may be added a problem of this particular era. We are not accustomed to 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 habit 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 amongst 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 is characteristically perceptive about much that was to come, but he goes on to say that if Japan did not surpass the US in GDP by the year 2000 he would "be surprised."<sup>1</sup> 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 rappateur summarized that "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..."<sup>2</sup> It appears that, at best, our headlights illuminate a short stretch of the road in front of us; many curves will take us off the course that we can see.

Even if we saw the future, it would be a considerable further, and rather different, 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 skilled policy practitioner, the combination in one person is so scarce that when it arises, as for example in a George Kennan, a Dean Acheson, or a Henry Kissinger, we celebrate it (and live off

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<sup>1</sup> Kahn, Herman The Emerging Japanese Superstate (1971) p. 94 and see also p. 130.

<sup>2</sup> Byrnes, Robert F. ed., After Brezhnev: Sources of Soviet Conduct in the 1980s (1983) pp xvi-xvii. I am indebted to Ragsdale, Hugh, The Russian Tragedy: The Burden of History pg. 251 for calling attention to this passage.

it) for a long time. Yet the pay-off -- 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 -- a nineteenth century poet and philosopher (and the father of Louisa May Alcott, the author of Little Women) -- 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 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 back into the present. Alone, either of these tasks is immensely difficult. Together, they are an order of magnitude more 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. The road will change to the extent we drive differently. 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 adaptations. It is not sufficient to be far-sighted; we must also constantly reassess. It is not possible to be enduringly correct.

Yet when all this is assimilated, the immensity of the challenges and the probability of failures 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.

My vehicle for deepening our understanding has been to ask the following question:

Imagine that we had a crystal ball on the table before us. Suppose that in this crystal ball we saw ourselves sitting at this same table 30 years from now. Imagine that we were saying that things had gone badly for America -- that those who had responsibility for this country with respect to international relations at the end of the 20th Century had not done well, they had failed to take appropriate actions. Suppose then that the crystal ball clouded over and we were left to guess what it was that was being talked about -- what had gone wrong for America from a national security standpoint, between 1999 and 2029. What would you guess it was?

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

Given my opening observations that we cannot predict the future, why is this a valuable discussion? I offer a handful of independent answers, any one of which, if valid, would justify the exercise. If several are persuasive, the effort is that much more warranted.

First, whether my own views are persuasive or misguided, I think they will have served 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. Talking about it can reveal fundamental present concerns. My focus in this respect is not so much on what might be in the crystal ball; it is on what the observers think they see there. In this dimension, this is a work about present fears, about today's insecurities.

Though longer-term concerns are rarely discussed in the way they are presented here, I believe they underlie our day-to-day national security decisions and investments as the unconscious underlies the conscious. Raising these matters to the surface, 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, a trend is occurring (or not occurring).

Third, this approach offers us an opportunity to correct for under-investment. In these pages I offer no pretension to comprehensiveness. This is not an essay about everything important to a sound national security policy. The question that I posed does not address opportunities or good things that may happen in the future. It does not 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 our on-going 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, however, is to focus our attention on ill-mapped problems that loom above the flatland of national security risks. This essay encourages 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 a 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, I believe that from group discussion our predictive capability, though perpetually imperfect, can be improved. Some people will be more insightful than others will. If discussions about the future are like most other discussions, 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 more correctly determine 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 I am successful, it should, however, help us to understand and sharpen national security priorities and policies in the present.

## Part I

### An Introduction to America's "Big Three" Risks

If, thirty years from now, our successors were to judge us not to have done a good job in our stewardship of American national security at the end of the 20<sup>th</sup> Century, why would that be so? Put another way, suppose through a time warp, our computers received the first paragraph of a review written in 2029. Suppose that preview was critical of our national security policies and investments at the end of the 20<sup>th</sup> Century. Suppose it said that we had failed adequately to focus on what proved to be our most important national security problems. What would we speculate the missing text would most likely report as our failures?

There are many candidates for answers to this question; all should be subject to debate. This part of this essay outlines my answer. It describes three kinds of risk that I believe should be of greater concern to us over the next decades. These are the risk of a renewed competition with a major military adversary, the risk of traumatic attacks (particularly from NEW weapons, an acronym I will explain), and the risk of erosion of support. Succeeding sections take each of these risks in turn, amplify the discussion, and suggest immediate actions that hold promise of reducing our vulnerability.

The risk of a 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 20<sup>th</sup> 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. Desert Storm exemplified this fact.

Paradoxically, this American ability to project military power to any region gives us a responsibility that, as we have seen in recent years, keeps us from being completely at peace. The costs and frustrations of our efforts to quiet regional turbulence and the very substantial anguish that accompany them should not, however, obscure the extraordinary circumstance in which we find ourselves. We have a double privilege. First, we enjoy security in its most fundamental sense: there is no country that, by military force, credibly threatens to dominate this nation. Second, we can extend this security to almost any nation that we choose to protect, so long as we remain true to that commitment. In short, we have no major military competitor in the sense that there is no nation 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. 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 enormity, 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 other states into a community of interest with us. An important reason that we face no major military competitor is because potential and former competitors, such as Germany, Italy, and Japan, now share many of our values and have a large stake in the present international order. Our economic and political ideologies and our culture have had an appeal and evident success that helped to persuade Russia (and Germany, Italy and Japan before her) to adopt a new course.

These observations suggest a first conclusion about our risks. The gift we have been given will not necessarily or, in my opinion, easily, endure. It requires sustained commitment, well-conceived strategies, costly investments and luck -- all to an extent we now only imperfectly understand. The next section of this essay is devoted to suggestions as to how we can sustain this advantage. For the moment I want only to assert that it is our most important challenge. As we judge our predecessors predominantly by the gift they have

given us, our successors will judge us predominantly by how well we have 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, in a first important way, 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. Although much can be learned from history, only if military technology and doctrine are stagnant can 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. 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, in other settings.

Having learned the lesson of Desert Storm, smaller competitors are especially likely to be drawn to asymmetrical methods and strategies. In warfare, as in business, there is a tendency for a dominant power to over invest 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 who most threatened these once dominant actors.

It is precisely such smaller competitors (Korea, Viet Nam, Iraq, and innumerable guerrillas, militias and terrorists) that America most often fought, and suffered from, in the last half of the 20<sup>th</sup> 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 concerns are likely to be about opponents who are not major industrial states. These opponents cannot be expected to fight like major industrial states.

Technologies of destruction have proliferated and developed 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 in the last half of the 20th Century continues to be worthwhile, but it is imperfect and losing ground. Worse still, we are witnessing the proliferation of inexpensive, accessible and invisible technologies 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. They are inexpensive to obtain and to deliver. They are "poor-man's weapons."

Since the Chinese invention of gunpowder 650 years ago, warfare has focused on effecting or preventing explosive impacts. To date, when terrorists challenged a country's security, it has almost always been with explosive weapons. Our attention has been captured by bombings of the Oklahoma City Federal Building and the World Trade Center in New York, of U.S. military facilities in Saudi Arabia and of US Embassies in Africa. Bus bombs in Israel, package bombs in Ireland and Great Britain, the destruction wrought over decades by the Unibomber -- all are examples of traumatic violence wielded by groups or individuals in rather familiar ways.

The 1995 Sarin attack on the Tokyo subway system is more ominous, because it suggests the potential for other kinds of weapons as instruments of terror. Chemicals, biological agents, and radioactive materials can be used either alone or in conjunction with explosives. "Information warfare" can be waged by computer to degrade or eviscerate data and software, and, in consequence, the systems they control. An airplane can be destroyed not only by a bomb, but also, no less effectively, by misguiding its computer and communications

systems as it attempts to land. This and related forms of attack can be applied simultaneously to thousands of systems.

In deference to national security analysts' taste for acronyms, I will call these instruments of combat NEW (non-explosive warfare) weapons. Regardless of whether the NEW weaponry assumes a larger role against soldiers in the century to come, it is evidently well suited to attacking civilian populations and infrastructure. The traumatic effects of the NEW weapons 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 grows as we expand telecommunications, travel, urbanization and international commerce. The increasingly complex weave of human society, with its ever-greater densities and frequencies of interaction, both virtual and real, 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 makes modern societies volatile. NEW weapons exploit this volatility. Though first thought of, and now widely described, 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, ubiquitous and has a high amplification. It is immediate not only in the sense that it is it quick, but also because it feels (often incorrectly) that 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 decision-making. 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 decision-maker reactions that have disproportionately disruptive effects. The result can be not just NEW weapons, but also a new warfare.

The archtypical 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 protagonists 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 it uses them as props for theatrical points. It seeks not to defeat armies, but instead to eviscerate the will to use them. It makes primary what was previously secondary: it aims to divert or diminish the public will to utilize, or persist in utilizing, what would otherwise be overwhelming force. Democracies are particularly vulnerable to these attacks. That is why the three leading 20<sup>th</sup> Century examples of this strategy were its use in a non-violent form in India by Gandhi, in guerrilla war in Viet Nam, and by terrorist groups in Northern Ireland. But these merely foreshadow 21<sup>st</sup> Century possibilities. This strategy has gained in power in proportion to the immediacy and evocativeness of communication. And for those who are unscrupulous, it fits, as hand in glove, with the NEW weapons.

NEW weapons and the new warfare are likely to be aimed at civilian populations, including the American people. Our enemies will be tempted to blackmail us by holding our 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.

For America, since the Civil War, national security has related to warfare 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. Others 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.<sup>3</sup>

The Risk of Erosion of Support. While these first two risks would stem from the actions of others, the third risk stems from our own politics and society. It is that the mainstream of this country may become so indifferent to, or, worse, alienated from, its military and foreign policy institutions as to undercut America's ability to develop and

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<sup>3</sup>Another kind of unconventional risk that erodes boundaries should also be considered. In an increasingly interdependent world, the extra-territorial 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 in the 20th Century.

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. They are aimed at undermining the will to use military power. But this third risk 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, the Department of Defense 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 the USSR 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. But as we adjust to the fact that the old race is over, questions will multiply as to why and how fast we should keep on running.

In a time of relative peace and fiscal pressure, DOD's preferred answers to these questions become less compelling. While, with a defense budget of more than \$280 billion per

year, the U.S. spends one-third less in real terms than at the height of the Cold War, 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). Our allies and we thus outspend our potential opponents -- who are nowhere near as united as we are -- by a factor of almost two to one. Our Army, Navy and Air Force each separately have annual budgets greater than the entire government (including all its defense forces) of Russia. Such high expenditures may become increasingly controversial.

For much of the last decade of the 20<sup>th</sup> Century, 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 21<sup>st</sup> 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. An 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 will 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 clear and present danger from the Soviet Union bought leeway for the national security budget that is unlikely for 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, this was true for approximately half of all such men. After the Viet Nam War, it was true for four in ten. The end of the Viet Nam War, the termination of the draft, our movement to more of a career military force, military downsizing after the break-up of the Soviet Union and Warsaw Pact, and the growth of our population have all further decreased this ratio. The increased representation of women in political and professional roles, as well as their acceptance as a substantial source of recruits, further changes the equation. Of the more than 3.5 million men and women who turned eighteen in each recent year, we have recruited fewer than 200,000 into the military. Some 4 million people a year will turn eighteen at the beginning of the new century, of whom only one in twenty will serve in the military.

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.<sup>4</sup>

This problem is especially pronounced amongst college graduates -- the segment of the population that shapes our officer corps. In the early 1960s, seven or eight percent of those graduating from college entered the military. The Viet Nam War draft doubled this percentage. In the first decade after the draft was abolished, as the baby boom generation increased the flow through colleges, and as more women went to college, the percentage of graduates entering the military fell to around 3%. It is now about 1.7%.<sup>5</sup>

These demographic effects are intensified by patterns of schooling and everyday life that separate civilians and service members. For students at many universities, and most pronouncedly at elite institutions, ROTC is 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

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<sup>4</sup>As recently as 20 years ago, more than 60% of the Members of Congress had military experience. In the just sworn-in 106<sup>th</sup> Congress, only 31% of the House and 43% of the Senate will have been in the Armed Services. This last Congress to sit in the 20<sup>th</sup> Century, may have the least military experience in the Nation's history. The 21<sup>st</sup> Century will likely exacerbate the trend.

<sup>5</sup>These estimates are drawn from data provided by the Defense Manpower Data Center.

civilian, graduate schools. Rarely will civilians (other than those employed within the national security establishment) attend military institutions. Military officers and their families will often be heavily engaged in churches, schools and volunteer groups in the communities in which they live. But base realignments and closures are reducing the number of these communities and, within them, separate housing, commissaries, and medical systems concentrate service members and distance them from many Americans.

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 armed forces have been more successful than most other U.S. institutions in opening opportunities to historically disenfranchised sectors of American society. But minorities are concentrated in the enlisted ranks, a third of whose members are African-American, Hispanic, native American, or Asian-American, while minorities constitute fewer than 15% of the officer corps.

These disparities can present difficulties when racial tensions run high or when 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 a quarter of the US population describes itself as African-American, Hispanic, or otherwise of non-European ancestry. By the year 2050, a half of the American population is expected to so identify themselves. Yet, 85% 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 are women.

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. But it should be evident that there is a risk here. 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 military.

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

## Part II

### Reducing the Risk of a Renewed Major Military Competition

Our highest security priority has, for a long time, 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, that is, directed to reducing the likelihood of competition with specific countries. Strategies affecting particular nations are beyond the scope of this essay. The general strategy can, however, 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 mindlessly pursuing the 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. The aim of dissuasion is to discourage 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. Since military investments also 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. To make this point, the next pages discuss three examples: 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 is excessively focused on deterrence; and how investments in quality of life and higher pay for non-commissioned officers may be better justified than now often recognized. 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 one hundred thousand Soldiers, Sailors, Marines and Airmen in Europe and a similar number in Asia. Every six months we deploy some twenty thousand 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, 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 will, however, be justified 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 build-up and the military ambitions of regional powers that, if they pursued regional aggression, could become superpowers. 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. They are 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.

Semiconductors, for example, have, since coming of age in the 1960s, doubled in capacity every eighteen months. If this continues (as we expect it to), we will confront a hundred-fold increase in computing capability between now and 2009. These are civilian technologies. Our opponents will 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 our problem. Innovations that boldly exploit rapidly evolving technological opportunity are impeded by an excessive commitment to present priorities. There is much talk, and indeed sincere endorsement, of the need for innovation in our defense establishment, as in industry. 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 thirty-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 pay-off 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, it also, regrettably, did not need to be more than that. Consequently, while commercial industry transformed its management processes to facilitate rapid decision-making and innovation, DOD came more to resemble the Soviet systems it defeated than the private sector systems evolving elsewhere. If the Department of Defense is to foster an intense commitment to innovation it will have to overcome the habits of decades.

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. Presently predominant theories of deterrence focus on near-term risks. This 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 looming fear and evident career risk 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. Perception that our predominant priority should be to avoid the emergence of a major competitor is needed to reorder our priorities.

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 non-commissioned officers, colonels and captains. If we retain a high proportion of the best of these over careers of more than a quarter of a century, we make it apparent to others that competition with us is a long and difficult road. If we lose these men and women, we lose that advantage. Propensity to stay in the military is most powerfully shaped by the professional challenges servicemen and women encounter and the equipment, training, esprit with which they meet these challenges. Beyond this, however, investment is warranted in pay and other basics that affect commitment to military careers. Our service members deserve the best. But these expenditures are most soundly defended not as "benefits" to them but as contributions to our national security.<sup>6</sup>

Similarly, a stronger case needs to be made for the power of economic and diplomatic tools as key elements in a strategy

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<sup>6</sup>Participants report that when Sergei Akhromeyev, Chief of the Soviet General Staff, visited US 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 non-commissioned officers. In addition to the long lead-time associated with such a project, his difficulty derived from differences in our competing societies.

of dissuasion. In the context of such a strategy, these are tools of integration, not, as they were during the Cold War, tools of isolation. In the midst of a military competition, military defense demands dominant attention. Political and economic tactics are secondary. But in avoiding 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 made these countries into allies, not competitors. This is the right precedent, but differences in circumstance make it not easy 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 in Churchill's "iron curtain" speech of 1946), allied plans were to keep Germany from endangering peace by limiting its post-War economic, as well as military, power. Similarly, post-war 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 era would be different.

These catalysts for action are not now present. It requires far-sightedness and will even greater than that achieved in the Marshall Plan if we are to help such recently hostile nations as Russia and China, particularly when we don't have to compete with another power for their loyalties. These are highly imperfect, corrupt, authoritarian, potentially hostile nations. The natural inclination is to follow the policy of the past, to isolate them or at least 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 that aid assuredly will place Russia on a path toward "normality." 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 U.S. will depend on a number of factors that 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). But 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, though integrative because they establish cooperative behavior, their primary goal is to police, rather than to eliminate adversariness. Similarly, whether well or ill advised, NATO expansion that does not include Russia is at best irrelevant to, and at worst retards, the "integration" of a major competitor. Integrative efforts deserve higher billing.

The seeds of an integrative 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. NATO's "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 towards that end. The particulars of any such program are debatable and difficult to establish, but the effort is 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 a 20th Century plagued by military competition.

## Part III

### Countering the Risk of 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 Non-Explosive Warfare, conducted with what I have called the "NEW" (Non-Explosive Warfare) weapons. The manifestation of these changes will be "traumatic attacks."

How do the NEW weapons differ from their predecessors? What special aims of traumatic attacks are amplified when NEW weapons are used? What kinds of investments would diminish risks from these weapons and these types of attacks? This section addresses these questions. It 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.

#### The NEW ("Non-Explosive Warfare") Weapons.

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 the 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 not just in scores and hundreds, but in the hundreds of thousands.

An understanding of the most novel activities, biological and information warfare, will illuminate the character of the NEW weapons.<sup>7</sup> Biological attack is conducted by the dissemination of bacteria, viruses or toxins to cause debilitating or fatal illness amongst those that breathe them, drink them or absorb them through the skin. Weapons of this

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<sup>7</sup> This focus is for expository purposes, given limited space. The other kinds of NEW weapons should not be overlooked. Chemical weapons are somewhat more confined in their likely effects, but they are the most pervasive and familiar of the NEW weapons. 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 two and a half million pounds of enriched uranium and plutonium. More than half of that is embedded in some twenty-four thousand nuclear weapons, seven thousand of them mounted on missiles, five thousand dispersed as tactical nuclear weapons, and twelve thousand 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.

kind are 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.<sup>8</sup> 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 speak, for example, of a computer "virus." A single computer virus, like its biological equivalent, can have widespread and proliferating effects. Whether embedded in software well in advance, or disseminated near the time of use, a computer virus can destroy or distort data so as to disable the information and communication systems upon which military and civilian life depends. The gravity of the "Year 2000 problem," a "natural occurrence" (corresponding 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.

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<sup>8</sup> The appropriate absence of an offensive program and limited test information and experience make these estimates subject to debate.

Though hardly unprecedented,<sup>9</sup> biological and information attacks share more than a dozen characteristics that can make security problems in the years ahead very different from those in the millennium now ending. These attacks will not depend on mass, nor will they be defeated by mass, either of armies or of physical barricades. 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. These skills and assets 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 eighty miles long. A single leased airplane dispersing a biological agent can kill more people than died worldwide in any month of World War II. The effects of attacks of this type can be delayed for substantial periods after delivery. Consequences of these attacks must be measured by the

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<sup>9</sup>It is sometimes said that biological weapons have never been used, and it is implied that they never will be used. But biological weapons (like all other weapons that are widely available) have been used: in the middle ages when bodies were catapulted over the walls of castles under siege in order to spread plague; in America's French and Indian Wars when the Indians were given blankets infected with smallpox; in our Civil War when Sherman's march to the sea was impeded by poisoned wells; in World War II when the Japanese unit 731 experimented with biological weapons that killed perhaps as many as a thousand Chinese civilians.

uncertainty and panic they will cause, even more than by their physical effects.

With the NEW weapons it becomes difficult to distinguish between crime, terrorism, natural occurrences, and war. 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 utilization by a major competitor, second or third-tier states, sub-national groups, or even individuals may present threats from biological and information warfare. Put another way, a large industrial base is not required to develop or deploy the NEW weapons. This is not surprising because they are post-industrial weapons. In the post-industrial 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, the 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, then, more than a dozen attributes differentiate these weapons. They cannot be countered by business as usual. Worse still, we are handicapped in recognizing the necessary changes. 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, unlike most other weapons, 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. In coming to grips with biological warfare 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 weaker than normal.

For their part, our 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 the local

power company 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.

**Traumatic Attacks.** The NEW weapons can be employed in traditional military settings or to undermine reinforcement and massing in preparation for conventional warfare. But both biological and information warfare are more potent in less conventional circumstances: they 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 almost nakedly exposed. Troops are trained and disciplined for combat. Civilians, especially American civilians, are not prepared for it.

Warfare aimed at civilian populations would not assess its gains by body counts or territory occupied. Its measure of success would be in the minds of the American public and that of allied populations. Alvin and Heidi Toffler have pointed out that ways of making war reflect ways of making wealth. In an agricultural age, battles were fought with agricultural instruments (e.g., horses and swords), the unit of value was land, and the method of victory was by occupation of territory. Industrial-era wars are fought with the products

of industry (e.g., engines and explosives) and the method of victory is by destruction, the negative parallel to the era's commitment to production. In the information age, information and telecommunications are likely to be principal weapons, and the method of victory may be neither more nor less than to mold perceptions.<sup>10</sup>

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, Pearl Harbor became rallying cries precisely because of the injury they inflicted. But these were not designed to be traumatic attacks. In retrospect, the attackers were unwisely unfocused. They lost sight of the psychological consequences of the achievement of their physical goals. These experiences warn the designers of traumatic attacks that they are working with a most potent power that may backfire or run out of control in unexpected directions. They tell us, across the years, that handling the consequences of events may be more important, even, than controlling the events themselves.

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<sup>10</sup> 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.

**Countering Traumatic Attacks that Use NEW Weapons.** 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 them in the training of a broad range of officers, and exercise information protection alongside of 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 the NEW weapons.

To reduce the risk of a military competition, I suggested that a theory of dissuasion needs to take its place alongside theories of deterrence. Dissuasion, the discussion in Part II suggested, seeks to avert the development of a major military competitor; deterrence seeks to limit the actions of an established competitor. The NEW warfare should emphasize the benefits of pursuing dissuasive strategies even with nations that are not likely to be major competitors. Because the 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, that is in avoiding disruption. Working from a position of military and economic superiority, we can afford, and in our own interests should pursue, open-handed, cooperative strategies that avoid creating pariah states.

We are given a further opportunity by the fact that these are 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 avoiding proliferation of NEW weaponry to them) is different from deterring state actors. We need to understand the psychology and structure of non-state 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. It is "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 completely to protect these systems. Similarly, biological, chemical, or explosive attacks will be too easily mounted, against targets too numerous exposed, for us to insulate society 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 so that manipulation is likely to be detected, and encrypted so that the benefits of intrusion are minimized.

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; our information defenses would only be impeded by geographical distinctions. Any one who doubts that biological agents easily can be imported into the United States, need simply consider our inability to stem the flow of drugs into this country. Once imported (or obtained or developed here) these agents are easily disseminated by use of readily available crop and other spray devices. Boundary defense cannot be relied upon in this circumstance.

Investments in protecting civilians against these untraditional threats have a rationale and benefit that is not present when considering civilian protection against conventional weapons. Illness occurs naturally. Information security is challenged every day in our economy. Dollars used to protect us in these arenas, therefore, yield everyday rewards. "Civil defense" may be questioned. 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 that in turn depend on properly functioning civilian information systems and civilian employees. All can be undermined or overwhelmed by driving civilian populations away from or, in massive numbers, towards 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 FEMA. Nor could we ignore such threats against civilians in host nations that receive and sustain our forces when they are deployed abroad.<sup>11</sup>

To sustain our military power we must be able to deal 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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<sup>11</sup>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 four days when Iraq publicized the deaths of its women and children in the US bombing of the Al-Firdos bunker (cite to Eliot Cohen). In Somalia, demonstrations of women and children surrounded, and thereby protected, armed men who threatened U.S. Marines. More recently, the Serbs used United Nations' peacekeepers and Muslim civilian populations as "human shields" to prevent NATO air attacks. The development of highly precise missiles and of non-lethal weaponry are both, in large measure, efforts to respond to this tactic.

## Part IV

### Reducing the Risk of a Lack of Domestic Support

Over the first years of the 21<sup>st</sup> Century, Department of Defense 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 the Department of Defense (DOD) needs to perform its mission. First, security investments will be shortchanged unless a clearer and stronger consensus is established by a persuasive rationale for their necessity. Second, 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. Third, DOD may be perceived as an island at a distance from society -- an island, moreover, populated by members of the military who may be viewed as unrepresentative.

To counter the first problem, this essay has urged that 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 the Department of Defense 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 Department of Defense has succeeded to the dubious honor of being one of the world's last bailiwicks of central planning. Indeed, in some respects, the American Department of Defense is a Communist system. The Department does not normally provide decision-makers with accurate price information and incentives to minimize costs. Instead, it provides them with directives, quotas, and punishments. It does not reward success -- instead it 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 the Department of Defense. 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 (e.g., 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) as though it were almost a free good (this is a legacy of conscription); and using metrics that measure the value and efficiency of services rather than merely the size of bureaucrats' workloads.

All components of the Department of Defense must come to grips with this challenge because restructuring is fundamental not merely to their efficiency, but also to their credibility and therefore to their viability. In the future, if DOD can't more efficiently extract benefit 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 decision-makers also need to address the need to bring the Department of Defense 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. Since officer recruitment often occurs at the beginning of college, some four years before officers enter the force, and, since it takes officers more than twenty-five years to become generals and admirals, today's recruitment patterns shape the leadership of the military three decades from now. In 2028, America will be some 40% Black, Hispanic and Asian, but our officer corps is only 15% minority, and minorities comprise fewer than 20% of these now recruited into officer ranks.

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. 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. (The Army is furthest along this path, but all the Services have much to do.) 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.

Special needs warrant separate establishments for military education and military medicine. Soldiers, Sailors, Marines, and Airmen are professionals who need to maintain unique skills and a warfighting ethic. Military doctors face deployment and mobilization demands that are often incompatible with civilian practice. But opportunities should 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. Everyone will benefit from increasing their interaction with the society around them.

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.

## Part V

### Conclusion

This essay began by identifying three overarching risks that should receive priority in shaping our thinking about national security over the next thirty years. First, 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. Second, attacks may be launched against us by less than major competitors, including non-state actors, in an effort to demoralize or disrupt our ability to use our power. The proliferation of NEW (non-explosive warfare) weapons expands the availability of means for inflicting trauma on society and renders America's civilian infrastructure and population particularly vulnerable to attack. Third, 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 that are 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 non-state 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 the 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, like biological agents, that can be delivered with low visibility by individuals inside the United States.

The risk of a loss of popular support should intensify efforts to make the Department of Defense more efficient. To achieve this, the Department of Defense must move away from its system of command/control/quota management and towards 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.

In sum, then, three risks are described here and an array of changes is urged to give these 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,<sup>12</sup> yield more powerful insights or consensus about programs?

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<sup>12</sup> 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.

Whatever differences may be illuminated by pursuing these questions, this essay will have succeeded if it encourages efforts that are, as these pages have tried to be, 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. It will be whether they generate their own programs, strongly rooted in a clear statement about their authors' 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, to use Dickens' memorable phrase, in "the best of times and the worst of times." For our predecessors what was "worst" in their time was the critical national security risk posed by the Soviet Union (a major competitor) and its allies. What was "best" was the achievement of Kennan, 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. This essay attempts to contribute to that effort.