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NUCLEAR DETERRENCE IN THE 21ST CENTURY

LESSONS FROM THE COLD WAR
FOR A NEW ERA OF STRATEGIC PIRACY

THÉRÈSE DELPECH



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The concept of deterrence has been somewhat neglected in the nearly two decades since the end of the Cold War, particularly after the attacks of September 11, 2001.

—Austin Long, *Deterrence—From Cold War to Long War: Lessons from Six Decades of RAND Research*

Like it or not, the language of threat and ultimatum is today . . . the language of diplomacy.

—Daniel Ellsberg, *The Theory and Practice of Blackmail*

Foreword

This book grew out of a conversation that Thérèse Delpech had with me on the margins of a conference in 2007. She was among France's most prominent scholars, analysts, and officials dealing with security issues, especially nuclear weapons. In that conversation, she told me that she had long admired the work on deterrence that was done in the 1950s and 1960s, much of it at RAND in Santa Monica. She lamented the fact that she had not encountered the same level of reflection on today's deterrence challenges. Of course, those challenges are different, she noted, than those of the time of the U.S.-Soviet nuclear standoff, but that does not necessarily mean that the thinking from that time is irrelevant.

Thus, we hatched the plan for this book. Thérèse was willing to take time from her career in France to come to Santa Monica for weeks at a time to go through RAND's deterrence literature—a trove of studies that continues to grow today—and to begin to write. She started in Santa Monica, a city she enjoyed, in August 2009.

Sadly, she fell ill in the middle of the project. In the early days of her battle with the illness that she never specified, she told me that she was determined to finish the project, working at home in Paris and, if possible, returning to Santa Monica. She did both and she submitted the book for review at RAND in late 2010. She hoped to return in 2011 for the final rewrite, but she was unable to. She finished the rewrite at home a few months before her death. I am both sad and proud that RAND is able to publish what may be her last book. The world has lost a great talent much too young; she had so much more to do.

The book is a triumph. Thérèse

- spells out the need for revitalization of thinking about nuclear weapons, a challenge that RAND takes seriously
- reviews the key concepts of past deterrence thinking and their development up to now
- reviews today's key security challenges and their relation to nuclear weapons
- demonstrates that some of the concepts of the past remain relevant today

- urges the new generation of defense and security analysts to turn their attention to nuclear deterrence, much as she did 30 years ago.

Not everyone will agree with Thérèse's analysis of today's security challenges. But this is no surprise: There are significant differences of opinion in the West regarding what to do about the Iranian and North Korean nuclear programs, and the challenges and opportunities posed by the rise of China continue to be debated.

But all will learn from this interesting and challenging book. I certainly did.

James A. Thomson
President and Chief Executive Officer
RAND Corporation, 1989–2011

January 2012

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Acknowledgments

The RAND Corporation's role in the development of nuclear deterrence, in the dynamics of strategic thought, and more broadly in the defense of Western interests has been so crucial that it is only natural to acknowledge at the beginning of this book the intellectual debt owed to the institution and to its most significant contributors in the area: Bernard Brodie, Paul Davis, James Digby, Herman Kahn, William Kaufmann, Andrew Marshall, James Quinlivan, Thomas Schelling, James Schlesinger, Jack Snyder, and Albert Wohlstetter. No other organization in the world has ever gathered such a glorious team of strategists. Many of them are now dead. One of the purposes of this book is to show that their thoughts are still alive. This does not mean that the validity of their analyses for the 21st century should go unquestioned, but it does mean that no work on nuclear issues can start without a serious examination of the remarkable books, articles, and reports they produced.

I thank James Thomson for instigating this project; Michael Rich for his constant support; David Gompert, Frank Miller, and Forrest Morgan for their excellent review comments and valuable suggestions; Lynn Karoly and Jocelyn Lofstrom for managing the quality assurance and production processes; Alissa Bazsali and the rest of the Kinetic group for the quality of the editing; and Erin Smith for her most precious assistance. The author presented earlier versions to Christophe Carle, Philippe Errera, George Perkovich, and David Yost, who commented on drafts. Thanks are also owed to them. The views expressed are the author's alone.

Introduction

Andrei Antonovich, are you sure this is just an exercise?

—Leonid Brezhnev to Marshal Andrei Grechko during a 1972 nuclear exercise¹

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the conduct of a new order of things.

—Niccolo Machiavelli²

This book recommends a renewed intellectual effort on nuclear deterrence. The reasons, spelled out in Chapter Two, are many, but the core principle is straightforward: As long as nuclear weapons are around, even in small numbers, deterrence is the safest doctrine to deal with them.³ This principle is easier to embrace in theory than it is to put into practice. This was true during the Cold War, and it appears to be even truer today: The actors are more diverse, more opaque, and sometimes more reckless. Since deterrence is a dynamic relationship among specific entities, nations, and leaders, this diversity, opacity, and potential recklessness must be taken into account. In some cases this is a real challenge. For example, if Iran ever became a nuclear power, it is difficult even to guess who the interlocutor would be if a serious crisis were to erupt. Traditional nuclear concepts (i.e., first strike, escalation, and extended deterrence), presented in Chapter Three, are often still useful, but they need to be adapted. Finally, unlike all the leaders of the Cold War, today's leaders have not had the experience of living through

¹ John G. Hines, Ellis M. Mishulovich, and John F. Shull, *Soviet Intentions 1965–1985, Volume II: Soviet Post-Cold War Testimonial Evidence*, McLean, Va.: BDM Federal, Inc., September 22, 1995, p. 27.

² Niccolo Machiavelli, *The Prince*.

³ Alternatives to deterrence—preemption, coercion, and use—are all less attractive. Deterrence matters most to nations willing to limit violence escalation. It follows, then, that deterrence matters most to risk-averse democracies, whether they be Western, Asian, or Middle Eastern. It took some time for Western nations to convince Moscow that deterrence was the best policy when nuclear weapons were involved. It remains unclear today whether that attempt was fully successful. In the case of China, deterrence long meant coercion and may still mean it behind closed doors. How Pakistan, Iran, and North Korea calculate prospective costs and benefits remains an enigma.

a major war. The effort to contain violence and prevent escalation is a daily exercise. Leaders must be prepared to respond quickly and decisively in a crisis.

Lessons from past nuclear crises are numerous, including crises in Asia, the proclaimed center of strategic affairs in the 21st century (Chapter Four). At the moment, we live in a world where a few small states with highly destructive capabilities have acquired the ability to present strategic challenges to major nations. They benefit from the rapid spread of technology as well as from irresponsible past or present military—or dual-use—international cooperation (Chapter Five). But confrontation among big states with widely different approaches to law, stability, and use of force may come back within some decades. This possibility may seem remote, but it is already visible on the horizon (Chapter Six). This time, new domains such as space and cyberspace will be part of the battle. In some ways, this battle has already begun: In cyberspace, for example, attacks are now taking place on a daily basis in peacetime, mainly for espionage purposes. These domains pose difficult challenges to deterrence (attribution, for example) and they require new thinking (Chapter Seven).

The absence of a chapter on nuclear terrorism, listed as the first threat in the 2010 U.S. Nuclear Posture Review (NPR), might seem surprising to an American audience. There are two reasons for this omission: First, a number of excellent American analyses on the subject have been published in recent years, and little can be added to them. Second, the author tends to agree with Brian Jenkins, who wrote in 2008 that “it is hard to separate truth from myth” in this domain, and that “a world of fantasies, nightmares, hoaxes, scams and stings” are not backed by evidence or historical records.⁴ This is not to say that complacency is warranted, but that *the anticipation of nuclear terrorism should not have such a high degree of priority and should not drive American defense or nuclear policy*. This is also true for Europe, where a British intelligence report leaked to the press in 2007 predicted a large-scale nuclear attack by al Qaeda operatives “on par with Hiroshima and Nagasaki.”⁵ Sometimes we succeed in terrorizing ourselves.

Other nuclear realities look more troubling to this author: China’s unabated nuclear and ballistic missile modernization, its lack of transparency on issues of command and control, and the fact that a confrontation over Taiwan or over the South China Sea would pose the most serious danger of nuclear war since 1962; Russia’s nuclear doctrine (overt and covert⁶) coupled with military exercises rehearsing the use of nuclear weapons against separatist forces (the 2010 Vostok maneuvers) and Mos-

⁴ Brian Michael Jenkins, *Will Terrorists Go Nuclear?* Amherst, N.Y.: Prometheus Books, 2008.

⁵ Gadher, Dipesh, “Al Qaeda ‘Planning Big British Attack,’” *The Sunday Times*, April 22, 2007, p. 10. The intelligence report, produced in early April 2007, was compiled by the Joint Terrorism Analysis Centre (JTAC), based at MI5’s London headquarters.

⁶ The published 2010 Russian nuclear doctrine reflects a series of internal debates following the comments of Nikolai Patrushev, Secretary of the Security Council, who reportedly explained that delays in completing the new military doctrine were due to discussions concerning the right of “preventive nuclear strikes” (RIA Novosti, “Russia’s New Military Doctrine Allows Pre-Emptive Nuclear Strikes,” October 14, 2009). The remark followed

cow's suspected continuous violation of the Biological Weapons Convention (BWC);⁷ Pakistan's perceived recklessness and its apparent inability to deal with the potentially mortal threat of extremism; progress in the nuclear and ballistic missile programs of both Iran and North Korea, two non-status-quo nations; the number of countries that will potentially be operating nuclear reactors by 2030;⁸ and, last but not least, the lack of sustained thinking on the new conditions under which nuclear weapons might operate in the 21st century.

Are nuclear weapons, while less central, becoming more dangerous? According to the *Global Trends 2025* report, "The risk of nuclear weapon use over the next 20 years, although remaining very low, is likely to be greater than it is today."⁹ The report presents the consequences of any nuclear weapon use:

If nuclear weapons are used in the next 15–20 years, the international system will be shocked as it experiences immediate humanitarian, economic and political-military repercussions. A future use of nuclear weapons probably would bring about significant geopolitical changes as some states would seek to establish or reinforce security alliances with existing nuclear powers and others would push for global nuclear disarmament.¹⁰

There are now seven overt nuclear powers, one covert nuclear power (Israel), and at least three nuclear aspirants (Iran, North Korea, and Syria), making the nuclear phenomenon more global than ever. New nuclear players may still emerge in the next decades in East Asia, the Middle East, or South Asia. As of 2010, at least 25 states had announced their desire to build nuclear reactors before 2030, which could have major implications for regional and international security if it leads to further nuclear proliferation. In all the regions mentioned above, conditions exist that make nuclear weapons more hazardous and increase the risk of use: the recurrence of armed conflicts since 1945, the severity of tensions, and the absence of a recognized status quo regarding

a simulated nuclear strike on Polish soil during the Zapad 2009 exercise. The nature of a political system in a nuclear state has an impact on doctrine projection and sometimes on the opacity shrouding it.

⁷ The size of the Soviet offensive biological empire between 1972 and 1992 makes Russia's suspected continuous violation of the BWC a major international issue. Violations of the Conventional Armed Forces in Europe (CFE) Treaty (on flanks and ceilings), the former Start I Treaty (reportedly violated until it ended), and the 1987 INF Treaty (at 700 km, the range of the Russian ballistic missile Iskander-M is much greater than advertised, according to the Finnish security expert Stefan Forss [unpublished conference presentation, Helsinki, Finland, September 2010]), while less troubling than the violation of the BWC if confirmed, nonetheless indicate a disturbing pattern of Russian noncompliance.

⁸ The Fukushima nuclear accident has likely led to revisions in some of these projects, particularly in nations where the safety record of nuclear power is still poor.

⁹ National Intelligence Council, *Global Trends 2025: A Transformed World*, Washington, D.C.: U.S. Government Printing Office, November 2008, p. x.

¹⁰ National Intelligence Council, 2008, p. x.

borders (such as the India–Pakistan and India–China borders), territories (nonrecognition of Israel by most nations in the Middle East), and peace treaties (China and the Korean Peninsula). Although it is difficult to predict the behavior of any actor in times of serious crisis, it is even more difficult to do so in the case of these new actors, notably because our knowledge concerning them is so poor.

During the Cold War, the United States had two overriding objectives: to avoid all-out war with the Soviet Union and to prevent Soviet political and territorial gains. Both sides proved—most of the time at least—to be cautious and even frightened by the mere possibility of a nuclear exchange, as Brezhnev’s epigraph illustrates. The central issue was the preservation of an order acknowledged by both sides, something that does not exist in the Middle East, South Asia, or East Asia today. As a result, the traditional goal of preserving the status quo—reportedly the most important role of nuclear weapons during the Cold War—does not apply, because it goes against the wishes of those who would like to challenge regional or international order.

In addition, the evolving relationship between the United States and China is more likely to be vexed than cooperative, not only on exchange rates and trade, but on security issues—notably on Taiwan and the South China Sea, *the* issue capable of starting a nuclear conflict among major actors in this century. Although the aims of China’s ballistic missile and nuclear modernization are not known, the fact that China is the only nuclear weapon state building up its arsenal is now frequently underlined. How exactly will this arsenal evolve? How will the relationship between the Chinese Communist Party (CCP) and the People’s Liberation Army (PLA) evolve? This question depends heavily on the political evolution in Beijing. How will China’s nuclear capabilities be coupled with its conventional means? Will China follow in practice the prudent nuclear policy that it proclaims? These are difficult and decisive questions for regional and international security, with implications for India and Pakistan and also globally. Recent years show a clear deterioration of China’s relationship with the West, and even Moscow recognizes behind closed doors that its relationship with Beijing is “complex.”¹¹

For decades, almost every American administration has come into office vowing to get tougher with China, only to soften its approach after a while. The Obama administration adopted the opposite approach, starting with cooperative offers only to realize later that Beijing shows little intention of working with Washington.¹² One reason for China’s recalcitrance is the conclusion drawn in Beijing after the 2008 economic crisis:

¹¹ This was reportedly the word used by Russian President Dmitry Medvedev when he met with French President Nicolas Sarkozy and German Chancellor Angela Merkel in Deauville, France, on October 19, 2010. Off-the-record interview with French officials, October 2010.

¹² According to David Shambaugh, director of the China policy program at George Washington University, “This administration came in with one dominant idea: make China a global partner in facing global challenges. China failed to step up and play that role. Now, they realize they are dealing with an increasingly narrow-minded, self-interested, truculent, hyper-nationalist and powerful country.” Mark Landler and Sewell Chan, “Taking Harder Stance Toward China, Obama Lines Up Allies,” *New York Times*, October 25, 2010.

China's fast rebound has led it to believe that the United States is a declining power while China is a rising power. In October 2010, Washington—which, three months earlier in Hanoi, had been able to line up 12 countries of the region behind its position concerning the South China Sea—made it clear to Beijing that it has closer and deeper friendships elsewhere in the region. This also means that pressure for the extension of a U.S. security umbrella has increased in East Asia as much as it has in the Middle East, where Iran's regional policy is worrying its neighbors.

Extended deterrence will be needed to protect U.S. allies from China's increasingly tough policy, notably regarding sea lanes and maritime disputes. The key question for the two decades to come will be whether the United States is up to the task, particularly if China openly ceases to be a status quo power. With this in mind, those engaged in day-to-day dealings with China would do well to recall one of the most important assertions made by Thomas Schelling concerning reputation: "Face," Schelling wrote, is not "a frivolous asset to preserve" but "one of the few things worth fighting over," not only because it preserves credibility and therefore secures extended deterrence, but also because it prevents dangerous future contingencies from happening.¹³

The notion of a second nuclear age emerged in the late 1990s.¹⁴ It may be taken as having a number of meanings. At its most basic, it can be understood as a simple acknowledgment that the end of the Cold War did not mean the end of nuclear weapons, either because the nuclear shadow of the past 50 years proved to be more consequential than it was assumed to be in 1989, or because more countries are taking an interest in those weapons. The term *second nuclear age* can also mean that the new era is not bound by the rules of the old one. The relationship between nuclear and conventional weapons is evolving rapidly, and new forms of deterrence are appearing, including those involving the offense–defense balance. Various combinations of offensive and defensive means are already surfacing. Third, a second nuclear age can refer to the advent of new nuclear powers. Such states (or, in the future, nonstate actors) are dissatisfied with a regional or international order that they regard as inappropriate. Nuclear weapons could be instrumental in changing that order, through coercion, threats, effective use, or simply possession. In any case, the risk of use rises with the number and diversity of players for whom, in addition, deterrence could have different meanings. Fifty years of nonuse has not enshrined a policy of deterrence, nor has it enshrined a nuclear taboo. Last, a second nuclear age means that security in the 21st century is, to a large extent, determined by events in Asia. Those wishing to exert influence on the international scene will have to understand developments there.

¹³ Thomas Schelling, *Arms and Influence*, New Haven, Conn.: Yale University Press, 1966, p. 124.

¹⁴ Keith Payne, *Deterrence in the Second Nuclear Age*, Lexington: University Press of Kentucky, 1996; Thérèse Delpech, "Nuclear Weapons and the 'New World Order': Early Warning from Asia?," *Survival*, Vol. 40, No. 4, 1999; Paul Bracken, *Fire in the East: The Rise of Asian Military Power and the Second Nuclear Age*, New York: HarperCollins, 1999; and Colin Gray, *The Second Nuclear Age*, London: Lynn Rienner Publishers, 1999.

In the West, there is a continued marginalization and restriction of the role of nuclear weapons, while in Asia—from West Asia to East Asia—a threat to the preservation of nuclear peace in the 21st century can be observed. The problem is less about the number of weapons—although countries in the region are increasing their nuclear arsenals—than about the number of players and the long history of tensions among them, about cultural differences that could exacerbate misunderstandings, and about the weakness of regional and global regulatory mechanisms. Finally, today's leaders may be ill-prepared to handle crises involving nonconventional weapons, particularly nuclear weapons.

In terms of stability, the goal should not be to restore an order that has disappeared (assuming that strategic stability ever did exist during the Cold War) but to look for forms of stability that are relevant in this century. A “multipolar world” of the future¹⁵ is likely to be more unstable than a bipolar or—contrary to anti-American or anti-Western opinion—unipolar world. Such a world is just as likely to be one of confrontation as of stability, as the European experience of the last three centuries has shown.¹⁶ Extending the nuclear peace the world has known for 50 years would involve both reducing the likelihood of conflict in zones where nuclear weapons exist (these are inherently volatile zones) and making crisis escalation unlikely in the event of such conflicts (since today's actors may be more risk-prone than Cold War warriors). The task is not going to be easy, not only because of potential volatility and recklessness but also because of mounting violence worldwide and the absence of recognized rules. As Machiavelli remarked, there is nothing more difficult, perilous, and uncertain than “to take the lead in the conduct of a new order of things.”¹⁷

How to describe this “new order of things”? In a nutshell, the West's potential adversaries understand the meaning of conventional superiority for future conflicts: They already employ a mix of conventional weapons, irregular tactics, antiaccess capabilities, space and cyberspace weapons, terrorism, and criminal behavior to further their objectives. Even a surprise nuclear attack, the major fear of the Cold War, may become more likely *inter alia* because of the West's perceived conventional superiority.¹⁸ More than ever before, no one can assume that every action in a crisis will follow a finely calculated plan. Put another way, *an era of strategic piracy* may be opening up,

¹⁵ See Eric Edelman, *Understanding America's Contested Primacy*, Center for Strategic and Budgetary Assessments, Fall 2010, p. 67: “Whether the international system moves toward a multipolar world, as forecast by Global Trends 2025, however, will depend to a large degree on how people perceive the relative shifts in power and how they choose to act on those perceptions.”

¹⁶ This does not mean that confrontation and stability should be considered mutually exclusive but rather that proponents of multipolarity believe—wrongly, in the author's view—that the concept suggests stability, when in fact the poles are equally likely to clash, perhaps even violently.

¹⁷ Niccolò Machiavelli, *The Prince*.

¹⁸ The Chinese concept of “deescalatory strikes,” for example, is worrisome in this context.

where *piracy* is defined as lawlessness and deception. Traditional actors are ill-prepared for it. The new faces of nuclear doctrines and the difficulty of maintaining efficient deterrence strategies are integral parts of the new era. They just might be the most dangerous side of it. A renewed intellectual effort is therefore warranted. The RAND Corporation is the best place for it to start.

Why Is This Subject Important?

Where are we headed? Who knows? We hardly recall where we come from.

—Johann Wolfgang von Goethe¹

Decades ago, Thomas Schelling spoke about “the retarded science of international security.”² For all his faith in reason and rationality, he knew all too well that the development of such a science was not only retarded, it would never exist. Since both the constant influx of new empirical data and the play of human freedom define history, any science on the subject would amount to a dangerous fiction. But lucid and articulate thinking has a crucial role to play in international relations.

One of its most important tasks is to keep humanity within the boundaries of acceptable historical experiences.³ Sixty-seven years after 1945, most would consider a nuclear attack to be beyond those boundaries. The variety of nuclear actors, the proliferation of cruise and ballistic missiles, thermonuclear weapons, and radical ideologies have transformed the nuclear scene to a considerable extent since the end of World War II. Whether thinking on nuclear weapons has followed a similarly impressive path, particularly since the dissolution of the USSR, is questionable. There are numerous analyses and studies, but they do not match the quality and pertinence of those of the Cold War vintage.

While nuclear deterrence attracted an abundance of intellectual attention during the Cold War, since the 1950s there has been a decline in thinking on this subject even as the risk of nuclear use has been rising. The absolute necessity of preventing extreme violence among states (as opposed to nonstate actors) has receded in our minds, even though it is prominent in our speeches. Humanity does not learn much from events that do not happen. In a way, the very success of the deterrence enterprise during the

¹ Johann Wolfgang von Goethe, *Dichtung und Wahrheit*.

² Thomas Schelling, “The Retarded Science of International Strategy,” *Midwest Journal of Political Science*, Vol. 4, No. 2, May 1960.

³ This is particularly true since, as Paul Fussell wrote in 1975, “The drift of modern history domesticates the fantastic and normalizes the unspeakable.” Paul Fussell, *The Great War and Modern Memory*, Oxford: Oxford University Press, 1975, p. 74.

Cold War undermined its principal gain: Since no nuclear exchange took place, the notion of nuclear weapons as a threat to our survival lost a good deal of force and a sense of urgency.

Ideas have consequences. So does a lack of them. During the Cold War, a mixture of deterrence, containment, conventional capabilities, and arms control seemed successful in preventing a nuclear exchange with the Soviets. Luck may have played a part as well.⁴ Today's nuclear dangers seem to pale in comparison with those of the Cold War. They pale even when compared with those of the 1990s, when Russia was weak, with a considerable and poorly guarded nuclear stockpile and nuclear scientists and military officials reduced to poverty. At the time, a substantial effort was launched to secure Russia's weapons, nuclear materials, and scientists. New problems are arising now: nuclear terrorism; radical Islamists challenging the Islamabad government; the ability of nonstate actors to bring India and Pakistan to the brink of war; asymmetric nuclear threats coming from Iran and North Korea;⁵ Pakistan's, Iran's, and North Korea's nuclear and missile proliferation nexus; and China increasingly asserting its military achievements—including its nuclear, ballistic missile, cyber, and space achievements.⁶ While many in the West tend to see nuclear weapons as instruments of the past, other actors view them as weapons of the future. There are obvious gaps in Western thinking and some disregard for those gaps. However unpleasant, it is imperative to address these. To start with, consider the following reasons why another look at nuclear deterrence is important in the 21st century.

The first is obvious: In an era of extraordinary uncertainty, turmoil, and upheavals, *it is good to keep a clear mind about the most dangerous strategic situations contemporary leaders may face*. There is little doubt that a nuclear crisis—or, worse, a nuclear attack—whether effected by a nation-state or a nonstate actor, would be a critical situation. It should be considered unlikely, but as long as it appears even remotely possible, the difficult choices that would be required from governments ought to be understood for what they are, particularly in democratic societies. Such choices are “deeply baffling even to the ablest minds,” as Bernard and Fawn Brodie wrote in *From Crossbow to*

⁴ Such was the opinion of Nikolai S. Leonov, head of Cuban Affairs in the KGB during the 1962 missile crisis, whose reflections on the incident included the following warning: “One mistake at the wrong time in October 1962, and all could have been lost. I can hardly believe we are here today, talking about this. It is almost as if some divine intervention occurred to help us save ourselves, but with this proviso: we must never get that close again. Next time, we would not be so lucky, as you put it.” See Thomas S. Blanton and James G. Blight, “A Conversation in Havana,” *Arms Control Today*, Vol. 32, No. 9, November 2002, p. 7.

⁵ After the first 15 years of the Cold War, deterrence was progressively thought to require a rough symmetry in power between the parties. The impact of asymmetry on the dynamics of deterrence is unknown.

⁶ China is also testing the U.S. role in Taiwan by building up increasingly advanced short-range missiles near the Taiwan Strait. About 1,000 such missiles are now deployed, and the growing sophistication and accuracy of the missiles may mean that by 2013 China would need to launch only 250 missiles to temporarily disable Taiwan's entire air force.

H-Bomb.⁷ The “unthinkable”⁸ may have become less unlikely *in practice* since reckless actors are entering the nuclear arena, but it is becoming increasingly unlikely in Western minds at a time when even the political capacity of tolerating military casualties is questionable.

Foreign policy, notably Western foreign policy, continues to be made under the shadow of a nuclear strategy that is almost forgotten or that is becoming empty. The consequence is that our ability to face a nuclear attack effectively may be slipping through our fingers. If this is true, what the strategic planning community can contribute toward preventing this loss (or preparing to deal with it, if necessary) is to *revitalize nuclear thinking*. This does not call for any specific doctrine but for a top-quality intellectual debate on the concepts, old and new; on the crises, old and new; and on the actors, whether they played a part on the nuclear scene in the past or are only just now entering it, sometimes with masks on their faces.

Second, as long as nuclear weapons exist, deterrence appears to be the most—some would say the only—acceptable policy, far better than any possible alternative (such as blackmail, intimidation, coercion,⁹ or actual use). President Barack Obama acknowledged in Prague in 2009 that “the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up.”¹⁰ If the danger of nuclear use can and should be reduced, affirming the deterrence purpose of nuclear weapons is a step in that direction.¹¹

Whether efforts to promote “abolition”—deep reductions—are destined to succeed or to fail in the coming years, nuclear weapons will be present for a long time. No one challenges this fact.¹² The priority that should be given to deterrence has been a matter of debate among competing schools of thought since the 1950s. But seldom has deterrence come under attack, as is currently the case, because it constitutes a potent

⁷ Bernard Brodie and Fawn M. Brodie, *From Crossbow to H-Bomb: The Evolution of the Weapons and Tactics of Warfare*, rev. and enl. ed., Bloomington: Indiana University Press, 1973, p. 12.

⁸ Maybe the “unthinkable” isn’t so unfashionable after all: A recent book on nuclear deterrence is titled *Thinking Beyond the Unthinkable* (Jonathan Stevenson, New York: Viking, 2008).

⁹ Blackmail, intimidation, and coercion are closely related ideas. It is interesting to note, however, that they are listed separately in some Chinese articles and studies. See, for example, Jing-dong Yuan, *Chinese Perceptions of the Utility of Nuclear Weapons*, Paris: IFRI Security Studies Center, Spring 2010.

¹⁰ Barack Obama, “Remarks by President Barack Obama,” speech made in Hradcany Square, Prague, Czech Republic, April 5, 2009.

¹¹ The first recommendation of the *U.S. Nuclear Weapons Policy* report published in April 2009 by the Council on Foreign Relations is to “state clearly that it is a US goal to prevent nuclear weapons from ever being used, by either a state or a non state actor, and that the sole purpose of US nuclear weapons is providing deterrence for itself and its allies.” Council on Foreign Relations, *U.S. Nuclear Weapons Policy*, New York: Council on Foreign Relations, April 2009.

¹² Robert McNamara said in 1967 that “every future age of man will be an atomic age,” but his views have evolved since then. Robert McNamara, “Mutual Deterrence,” speech delivered in San Francisco, Calif., September 18, 1967.

argument in favor of maintaining existing nuclear arsenals (that is, deterrence, in contributing to the prevention of major wars, provides legitimacy to nuclear weapons). In addition, a widespread analytical confusion arises from the fact that nuclear deterrence is not credible unless the actual use of nuclear weapons is contemplated. As a consequence, there is often little perceived difference between a doctrine of deterrence and a doctrine of actual use. This leads to the belief that nuclear deterrence is inseparable from a doctrine of use, when in fact the purpose of deterrence is to prevent use.¹³

In the past, the deterrence debate centered on other issues: how “rational” opponents must be in order for deterrence to work, how deterrence functions, how escalation can be avoided, whether limited nuclear wars could be contemplated, whether a “balance of power” helps deterrence to function properly, whether defensive capabilities should be considered a necessary hedge against deterrence failure, and how deterrence can be seen in some situations as a dangerous bluff that invites challenge. Such questions are still relevant today in a different international environment. But a new and potentially devastating question is whether there will be any rules at all in the nuclear future. Some actors, among them North Korea, already behave like lawless pirates.

Third, as arsenals decrease, it is important to identify the level at which deterrence (including extended deterrence) is likely to become (or be perceived as) irrelevant.¹⁴ Reducing nuclear arsenals to the lowest possible level that is consistent with maintaining a credible deterrent is now the declared policy of the three Western nuclear weapon states. Some influential figures in the United States hold that 1,000 operationally deployed strategic nuclear weapons would be enough for the U.S. deterrent to be credible. The 2010 NPR did not adopt this view: The target of the now ratified New Start Treaty is 1,550 *deployed* strategic warheads, a number U.S. Strategic Command reportedly feels comfortable with.¹⁵ Implementation of the treaty is under way. What is next? President Obama declared that he intends to pursue additional reductions in both strategic and nonstrategic nuclear weapons, including nondeployed nuclear weapons. For its part, Russia appears reluctant to further reduce its strategic nuclear arsenal (and to include its large nonstrategic stockpile that is kept secret), while the issues of conventional delivery vehicles and missile defense systems are crucial in the

¹³ This view not only misreads what nuclear deterrence is about; it also ignores something Bernard and Fawn Brodie recall in *From Crossbow to H-Bomb*, namely that “in the history of technology, great inventive achievements have sometimes been used only once, or perhaps a score of times, and then abandoned or forgotten.” Supercatapults and Greek fire were among them. Brodie and Brodie, 1973, p. 14.

¹⁴ This subject was debated during the Cold War, notably when negotiations were undertaken with the Soviets. In his 1979 State of the Union address, President Jimmy Carter presented the most radical view of how little is enough by saying that “just one of our invulnerable Poseidon submarines . . . carries enough warheads to destroy every large and medium sized city in the Soviet Union,” startling—with some reason—the Chiefs of Staff.

¹⁵ John J. Kruzell, “Vice Chairman Expresses Comfort with Nuke Production Freeze,” American Forces Press Service, April 7, 2010. U.S. Strategic Command’s judgment may have been influenced by concerns about the difficulties of maintaining nuclear infrastructure at lower levels.

eyes of Moscow. It remains to be seen whether any satisfactory resolution on the latter subject will be attained in 2012 in the NATO context. Taking into account Moscow's insistence on access to technology, joint command, and "sectorization" (Russia shielding part of Europe and NATO the rest of it, reminiscent of the Cold War era), as well as the political environment in 2012 with presidential elections in both Russia and the United States, a meeting of minds in 2012 appears unlikely.¹⁶

The warhead numbers are only part of the equation: The budget for nuclear forces, the intellectual infrastructure of the nuclear weapons complex,¹⁷ the nature of the nuclear components (air-launched, sea-based, ground-launched), and the qualitative changes introduced in weaponry also have to be taken into account whenever "sufficiency" is discussed. A country choosing to maintain only a naval delivery capability, such as the United Kingdom, needs three or four ballistic missile submarines (SSBNs) to keep a credible level of deterrence, whatever the number of submarine-launched ballistic missiles (SLBMs) and warheads available. Another problem is tied to budgetary concerns: In the process of nuclear reductions, choices should be made at the highest decision-making level for strategic reasons, not as a result of service preferences.

For extended deterrence, the strategic calculations of nonnuclear allies should also be taken into account. This is particularly true in regions in which nuclear weapons and ballistic missiles are building up in neighboring states, whether in numbers, in quality (solid fuel, second-strike capability, and the like), or in their role in military doctrines (Japan and Taiwan are currently facing such a situation in East Asia). In 1979 Henry Kissinger declared, "Our European allies should not keep asking us to multiply strategic assurances that we cannot possibly mean or if we do mean, we should not want to execute."¹⁸ This is exactly the kind of statement that Tokyo and Taipei are now afraid to hear from Washington. U.S. allies are reassured only if they clearly understand U.S. capabilities and intentions.

¹⁶ Another question is related to the policy that the United States should adopt vis-à-vis China on arms control. Common opinion holds that the United States and China "are not yet ready to form a formal nuclear arms control agreement because of the significant asymmetry between their two arsenals" (Council on Foreign Relations, 2009). Does "not yet" mean the United States would contemplate some kind of parity with China in the distant future, for example, at the level of 1,000 nuclear warheads? How would such parity be in the interest of the United States?

¹⁷ The bipartisan Congressional Commission on the Strategic Posture of the United States (May 2009) indicated that one of its most serious concerns is the fact that "the intellectual infrastructure there is in serious trouble" and "strongly recommends that significant steps be taken to remedy the situation" (William J. Perry, James R. Schlesinger, et al., *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States*, Washington, D.C.: United States Institute of Peace Press, 2009, p. 51). The "intellectual infrastructure" of the nuclear weapons complex refers to the scientists and technicians who take responsibility for ensuring the safety, security, and reliability of nuclear weapons.

¹⁸ Henry A. Kissinger, speech in Brussels in September 1979, published as "The Future of NATO" in Kenneth A. Myers, ed., *NATO: The Next Thirty Years*, Boulder, Colo.: Westview Press, 1980, p. 8.

What Schelling called the deterrent effect of uncertainty has been replaced in Japan and Taiwan by the anxiety effect of uncertainty concerning U.S. policy on extended deterrence.¹⁹ There may have been a Soviet fear related to Washington's unpredictability, but what conclusions should U.S. allies draw from the difficulty of getting a clear answer to the question: If we are attacked by an adversary, what will America's response be?

Fourth, if deterrence should be preserved as long as nuclear weapons continue to exist, leaders and politicians, as well as military planners and scholars, may be becoming too complacent regarding nuclear deterrence. Newer generations of leaders with no experience of major wars may not be as frightened by nuclear weapons as they should be. Many act and speak as though keeping deterrence effective had ceased to be an important political responsibility, and as though constant technical and organizational efforts were not necessary to maximize the probability that deterrence will continue to work properly. Goodwill and openness will not suffice to deter.

No one can assert today, as Kenneth Waltz did during the Cold War, that "not much is required to deter"²⁰ or, as Thomas Schelling put it, that "you can sit in your armchair and try to predict how people will behave by asking how you would behave if you had your wits with you."²¹ Deterrence is a very difficult undertaking. There is good reason to think that it is more difficult now than ever before—at the very time when nuclear deterrence, pushed aside in the policy arena by space, cyberspace, and terrorism, suffers from intellectual and policy neglect. Deciphering an opponent's perceptions and decision making is a daily cumulative business, not an improvised test of nerve in the course of brief crises. It may be strengthened or weakened by policies totally unrelated to nuclear weapons. Contradictory diplomatic statements, even those unrelated to nuclear weapons, may weaken deterrence. For example, in his inaugural address, President Obama declared that authoritarian states are "on the wrong side of history." This was soon followed by the openly expressed unwillingness of the new Secretary of State, Hillary Rodham Clinton, to address the issue of human rights—the most neglected issue with regard to authoritarian states—in China. What

¹⁹ Since January 2009 a number of diplomatic *démarches* have reportedly been made by Japan in Washington on the continuing validity of U.S. extended deterrence in East Asia, and a bilateral dialogue was started on the subject in 2009. As far as Taiwan is concerned, the main issue is the buildup of increasingly advanced Chinese short-range missiles near the Taiwan Strait, which could call into question Washington's ability to credibly serve as guarantor of Taiwan's security in the future.

²⁰ Kenneth Waltz, "More May Be Better," in Scott Sagan and Kenneth Waltz, *The Spread of Nuclear Weapons: A Debate*, New York: W.W. Norton, 1995, p. 22.

²¹ Schelling, 1966.

It is better understood today that nothing can replace knowledge of the adversary's mind, as commanders have always contended. Winston Churchill, for example, said: "However absorbed a commander may be in the elaboration of his own thought, it is sometimes necessary to take the enemy into account." Quoted in U.S. Army, *FM 34-130: Intelligence Preparation of the Battlefield*, Army Field Manual 34-130, Appendix A, July 1994.

should Beijing conclude concerning which side of history China is believed to be on in Washington?²² Threats that are not implemented also weaken deterrence. Why, for example, should Iran believe in the West's determination to prevent it from coercing its neighbors with nuclear weapons—or, worse, from using them—when all the past statements concerning the unacceptable nature of its acquisition of nuclear weapons have been followed by actual acceptance of the multiple visible steps toward this very acquisition?

The adequacy of available technical means also has an obvious impact on credibility (i.e., numbers, range, yields, precision, survivability, and communications). The deterrence dynamics between “old” and “new” nuclear weapon states will constitute a core issue as shifts in space power and cyberspace are perceived more clearly in the years and decades to come. New nuclear weapon states—whether small (Iran and North Korea) or large (China²³)—are investing heavily in both space and cyberspace, complicating deterrence scenarios. Organization matters as well: As the 2008 Schlesinger reports show in a conclusive way, there has been a “loss of attention and focus,” a dispersal of officers and personnel, and a diversion of resources “away from sustaining the deterrent to other more pressing purposes.”²⁴ This is understandable. Afghanistan and Iraq are more tangibly pressing issues in Washington than maintaining nuclear deterrence.²⁵ But if there is “a distressing degree of inattention to the role of nuclear weapons in deterrence among many senior DoD military and civilian leaders,” as stated in the Schlesinger reports, which add that “many lack the foundation of experience for understanding nuclear deterrence, its psychological context, its political nature, and its military role, which is to avoid the use of nuclear weapons,”²⁶ the problem is serious enough: What kind of advice would a political leader get from the military in a nuclear crisis?

²² Actually, the fundamentally authoritarian quality of Chinese power does matter, not only in every negotiation with Beijing (on everything from Iran to the environment), but more generally. A government that ignores its own laws is unlikely to respect international agreements or laws related to the Global Commons. Lack of complacency in this respect should therefore also be dictated by sheer realism. It is noteworthy that Jon M. Huntsman, the departing American ambassador to Beijing, sharply criticized China's human rights record in April 2011. David Barboza, “Departing U.S. Envoy Criticizes China on Human Rights,” *New York Times*, April 6, 2011, p. A7.

²³ Strictly speaking, China is hardly a “new” nuclear weapon state, since it acquired the A bomb in 1964 and the H bomb in 1968, but the current modernization and the acquisition of a serious second-strike capability inaugurate a new nuclear phase in Beijing.

²⁴ Secretary of Defense Task Force on DoD Nuclear Weapons Management, *Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management, Phase I: The Air Force's Nuclear Mission*, Washington, D.C.: Department of Defense, September 2008a; and *Phase II: Review of the DoD Nuclear Mission*, December 2008b.

²⁵ Even in this conflict, since Pakistan is an essential part of the Afghan equation, it would be wise not to neglect nuclear issues for the sake of focusing on current operations. When American troops have left Afghanistan, what kind of relationship will Washington have with Islamabad on nuclear issues?

²⁶ Secretary of Defense Task Force on DoD Nuclear Weapons Management, 2008a, p. iv.

There may no longer be any “design for world domination” focusing Western leaders’ and military officers’ minds on nuclear nightmares, but their minds should remain focused in order to avoid the return of those nightmares in new shapes and forms.

Fifth, an additional concern is *the current acceptance of conditions that would have been considered unmanageable during the Cold War era*. (Here one thinks of nuclear weapons in the hands of an unpredictable leader like the late Kim Jong Il or his son or a fanatic like Mahmoud Ahmadinejad, or of nuclear weapons possessed by weak states or terrorist groups.) Such situations, though proclaimed “unacceptable” in speeches, are increasingly accepted in the real world. A few good examples of this reality are North Korea’s 2003 withdrawal from the Nuclear Non-Proliferation Treaty (NPT), its two nuclear tests in 2006 and 2009, and the 2002 discovery of Iran’s clandestine nuclear program. The red lines are constantly moving backward. What would be truly unacceptable in Western capitals is not easy to guess. How could Tehran and Pyongyang venture a guess on the same subject? Is leaving so much to chance an adequate basis for stable deterrence?

On this matter it is tempting to agree with Herman Kahn, who believed that the most convincing way to look willing is to *be* willing.²⁷ Indeed. In principle, all other things being equal, what is always known to a decision maker is his own plan. Not even knowing what oneself is willing to do, and being perceived in this way, is dangerous; such uncertainty in today’s Western leadership may generate new kinds of nuclear blackmail or surprise attack. Neighbors of the most risk-prone capitals have no doubts on the matter. Such warnings therefore cannot be considered excessively pessimistic. They should be taken seriously.

Sixth, *the experience of the Cold War can speak volumes and deserves renewed attention*. When the Cold War ended, it seemed at first that the past would offer little guidance. This was not the case. The supreme test of deterrence occurs in crisis situations, and past nuclear crises were much more diverse than most people realize. The confrontation was wider than a narrow view of bipolarity would suggest. In fact, five such crises involved China (1950, 1953, 1954, 1958, and 1969), two were related to Israel (1956 and 1973), and at least one took place at the end of an Indo-Pakistani war (1971).

At the time those crises occurred, nuclear weapons were thought to be the most serious business imaginable.²⁸ Truman was uninformed about nuclear matters when he came to power. He had no choice but to learn quickly, and he did, as his reaction to General Douglas MacArthur’s proposal in 1950 to bomb China suggests; the chain of command was clear, and only highly respected military officers were in charge of the nuclear business.

²⁷ Herman Kahn, *On Thermonuclear War*, Princeton, N.J.: Princeton University Press, 1960, p. 287.

²⁸ “The gravest problem that an American Secretary of Defense must face is that of planning, preparation and policy against the possibility of a thermonuclear war.” McNamara, 1967.

Some of the best minds of the time were thinking about nuclear weapons and crises in an intense manner. They took the subject so seriously that they even considered many of the problems we now face, without any empirical reason to do so (for example, nuclear terrorism is not as novel a subject as we tend to think; the challenge posed by small states with nuclear weapons was also envisaged, as was the scenario of dictators finding themselves in their final dugout²⁹).

Their intellectual engagement involved understanding that Western vulnerability stems from the belief that the advantages of peace and compromise are evident to all.³⁰ It also involved contemplating dangerous possibilities in the future.³¹ These insights should not be discarded from memory, for the messages they convey are relevant and useful in our time. We should not forget that in the nuclear arena, combat is first and foremost an intellectual contest. The side that stops thinking is already losing, even if its operational capabilities are vastly superior to those of its adversary.

The United States might be particularly vulnerable to this risk because of the known American preference for a technical or engineering approach to solving even the most daunting political problems. Some analysts have even argued that the American choice in favor of a “stable balance of terror” (a concept never recognized by the Soviet side) was an illustration of this preference (that is, an easily understood technical solution to an unprecedented threat).

Seventh, *worrisome new challenges must be taken into account*:

- The fact that European soil is no longer the epicenter of a possible nuclear exchange has merely displaced and complicated the nuclear threat. The division of the world symbolized by the iron curtain was unjust and brutal, but it had the advantage of clearly delineating the two main camps. What about deterrence when such clarity no longer exists? There is nothing that can properly be called a status quo in the Middle East, in South Asia, or in East Asia, where nuclear capabilities are expanding.
- The potential for the outbreak of small nuclear wars is greater than ever before, with deep distrust, lack of proper communication, and small nuclear arsenals

²⁹ In a speech on March 1, 1955, Winston Churchill said, “The deterrent does not cover the case of lunatics or dictators in the mood of Hitler when he found himself in his final dug-out.” Winston Churchill, *Winston S. Churchill: His Complete Speeches, 1897–1963*, Vol. VIII: 1950–1963, Robert Rhodes James, ed., New York and London: Chelsea House Publishers in association with R.R. Bowker Company, 1974, p. 8630.

³⁰ See Henry Kissinger, *Nuclear Weapons and Foreign Policy*, New York: Harper, for the Council on Foreign Relations, 1957, p. 11: “We have been tempted to treat each act of Soviet intransigence as if it were caused by a misunderstanding of our intentions or else by the malevolence of an individual. There is a measure of pathos in our continuous efforts to discover ‘reasonable’ motives for the Soviet leaders to cease being Bolcheviks.”

³¹ See Herman Kahn, *On Escalation: Metaphors and Scenarios*, rev. ed., Baltimore, Md.: Penguin Books, 1968, p. 131: “We might thus experience an explosive diffusion of nuclear weapons to fifty or sixty inexperienced and ‘uneducated’ nations. Such a diffusion could present a far greater danger, a far greater potential for disaster, than the gradual adaptation of international and national societies to these devices.”

subject to preemption (India/Pakistan, Iran/Israel, South Korea/North Korea). Preventing and controlling nuclear war is harder, not easier.

- The West certainly made mistakes in assessing the Soviet Union's capabilities and intentions, but the nuclear doctrines of the new actors are totally unknown—if indeed they have any—with equally unknown consequences in serious crises. Iran's suicidal mood constitutes a good example, since it may challenge theories about “the healthy fear of devastation.”³² Risk-tolerant opponents may confront risk-averse and more-traditional nuclear weapon states with intractable scenarios. In the current context, game theories are likely to play into the hands of high-risk, gambling adversaries, not cautious leaders.
- Religious motives and religious movements were once peripheral to politics. They no longer are. Doctrines of continuous struggle against nonbelievers do not favor negotiation or compromise. Rather, they invite permanent and radical confrontation.
- Those who now risk being overwhelmed by complexity and paralyzed by ambiguity are the Western powers, not their adversaries.
- The balance of terror seems to have given way to its exact opposite: the imbalance of terror. Situations of imbalance may create fear by spreading a general sense of vulnerability. Surprise attack is again in our minds in different shapes and forms.
- History shows that during a crisis, the antagonists often misunderstand each other's intentions, even when clear messages have been conveyed. What about situations in which messages are absent, misdirected, badly formulated, or contradictory? This should be of particular concern since deterrence is a complex political process involving whole nations governed by democracy, not a confrontation between two small decision-making units.
- Pursuing nuclear deterrence against the backdrop of a domestic political debate is a challenge unknown in previous nuclear crises, including the 1962 Cuban missile crisis, in which John F. Kennedy wisely decided to lock up most of the information concerning the crisis in order to avoid public pressure. Would it be imaginable today for a leader to make such a decision and enforce it?
- New technical possibilities have surfaced that should also be taken into account, owing to space capabilities, robotics, and computers. Space deterrence is still an almost uncharted territory, while cyberdeterrence appears even more complex. The possible disruption of vital communication systems can make crisis stability more tenuous, make preventive attack more probable, raise the likelihood of accidental war, and complicate war termination. China and Russia, but also North Korea and Iran, appear to have significantly increased their cyberwarfare capabilities. Cyberwarfare, little known during the Cold War, is evolving at an impressive

³² Robert Jervis, “Why Nuclear Superiority Doesn't Matter,” *Political Science Quarterly*, Vol. 94, No. 4, Winter 1979–1980, pp. 617–618.

pace. A cyberattack could change orders or targets, provide a false image of an attack, or focus defenses on decoys as opposed to actual warheads.³³

- Finally, the opponent's decision-making process was the subject of remarkable debates during the Cold War, notably with regard to how deterrence might function and which forces should be acquired or avoided. Some of this analytical work looks less pertinent today, when challenges are more diverse and potential adversaries are more opaque and less prudent. In such a situation, it is unreasonable to continue eschewing societal defenses—"the forbidden defense of human resources," as Thomas Schelling put it.³⁴

Eighth, if the goal is to reduce nuclear risks, the most dangerous situations have to be considered first. High on the list should be *a nuclear attack that could not be easily attributed to a specific adversary*. The problem would lie not so much in tracing the origin of the nuclear material used in an explosive device (significant progress is being made in the field of nuclear forensics) but in being able to present acceptable evidence concerning the perpetrator to a body such as the United Nations (U.N.) Security Council.

The increasingly unclear distinction between governments and nonstate actors makes this scenario a credible one. During the Cold War, who was in charge was never in question. It is certainly a serious issue in Pakistan, and even in Iran on nuclear matters. The problem is well understood, but the solution remains unclear. Taking into account the reality described above, it is certainly not sufficient to declare, as British Prime Minister Tony Blair did in 2006,³⁵ that in most circumstances the origin of the material would be identified. Though this is a deterrent, it is too weak a deterrent in the age of weapons of mass destruction (WMD) terrorism.

A number of other tricky questions would come to the fore in such a situation: How was the fissile material put into the weapon? Was an independent network involved? Were there any connections to a nation-state? If so, what were those connections? The

³³ Cyberwarfare can have significant consequences in the nuclear realm, because information systems play an essential role in nuclear deterrence and operations (i.e., communications, reconnaissance, computing, and targeting).

³⁴ Thomas C. Schelling, "What Went Wrong with Arms Control?" *Foreign Affairs*, Vol. 64, No. 2, Winter 1985, p. 222.

The debate goes beyond missile defenses and covers civil defense drills similar to the big exercise undertaken by Israel in June 2009 (code-named Turning Point III) that simulated rocket and missile attacks on Israeli cities, including preparations for a nonconventional strike. The Israeli prime minister declared on this occasion: "We are required to defend Israel, its cities, various installations, from the possibility of attacks by missiles, rockets or other weapons" (Subhabrata Das, "Israel Begins Biggest Civil Defense Drill in Its History," *Digital Journal*, May 31, 2009).

³⁵ *The Future of the United Kingdom's Nuclear Deterrent*, presented to Parliament by the Secretary of State for Defence and the Secretary of State for Foreign and Commonwealth Affairs by Command of Her Majesty, Cm 6994, London: Her Majesty's Stationery Office, December 2006, p. 19, paragraph 3-12.

possibility of deception—diverting blame to a third party—should also be taken into account. These would be essential questions in such a crisis.

Uncertainties make it difficult to deter such an attack, which may appeal to the most risk-prone or irreconcilable adversaries. But prudent measures and practical steps can be adopted to counter this threat, among them decreasing the risk of theft or covert sales of nuclear weapons and fissile materials. There is still *a considerable effort of transparency and security* to be made in the area of nuclear material stockpiles. This could start with a mapping of sites where available nuclear materials exist that are not currently being used in nuclear weapons. To stress one of the most pressing issues, it is not an acceptable situation that, almost 20 years after the end of the Cold War, uncertainties still exist concerning hundreds of tons of highly enriched uranium and tens of tons of plutonium (as is still the case in Russia³⁶).

Ninth, short of pretending that lions and sheep should be able to lie together before contemplating nuclear disarmament, the political conditions for a secure non-nuclear—or at least less nuclear—world are considerable. *Serious political efforts should therefore accompany nuclear weapon reductions.* This is true in the first place among the major powers, particularly the United States, Russia, and China, since one cannot exclude the possibility of a conflict involving any two or all three of them. Managing a triangular nuclear situation would be far more difficult than stabilizing a bipolar one.³⁷

What, for example, would be the nature of any “delicate balance of terror” among three parties? In this context, even Bernard Brodie, who never accepted such formulation, might accept Albert Wohlstetter’s formula. Actually, the difficulty is that the concept has been overtaken by events. This is also true regionally, in the Middle East, in East Asia, and in South Asia. In the Middle East, not only are all conflicts becoming increasingly interconnected, but Iran’s nuclear aspirations are widely considered likely to be realized in the coming years. Does anyone know how to manage the consequences?

As for East Asia, future historians will probably wonder how a small state unable to feed its own people (North Korea) succeeded in challenging the most powerful nation (the United States) with increasingly long-range ballistic missiles. These ballistic missiles have been built over more than 30 years, and they have been sold around the world, notably in the Middle East and South Asia.

Finally, in South Asia, the combination of an increasingly unstable Pakistan, a politically weak India, and the constant threat of Chinese involvement is hardly con-

³⁶ See International Panel on Fissile Materials, *Global Fissile Material Report 2009*, Princeton, N.J., 2009, p. 13 (uncertainties related to HEU: +/- 300 tons) and p. 16 (uncertainties related to Pu: +/- 25 tons).

³⁷ See Robert Harkavy’s essay on triangular deterrence (Robert E. Harkavy, “Triangular or Indirect Deterrence/Compellence: Something New in Deterrence Theory?” *Comparative Strategy*, Vol. 17, No. 1, 1998) and Martin Wight’s essay on triangles and duels (Martin Wight, “Triangles and Duels,” in *Systems of States*, Leicester, UK: Leicester University Press, 1977).

ducive to an agreement to fight radicalism or to transform the Line of Control into an international border.

In some of these scenarios, arms control negotiations may have a role to play. However, as Henry Kissinger has observed, the parties concerned must understand that negotiations are less about arms or control than about strategy. The major challenge here is not to confuse diplomatic processes (such as the Six-Party Talks, the EU3+3, and the now defunct Middle East peace process) with actual results. While nuclear terrorism would still be a problem of considerable importance if serious progress were achieved on all of these issues, the nuclear threats would become less diverse. Minimizing the need for nations to resort to force requires a long-term process of influence.

Tenth, a good reason to work on nuclear deterrence is *to encourage the development of a significant intelligence effort* not only on new nuclear aspirants but on nuclear weapon states such as Russia and China. Their current nuclear doctrines and capabilities are not nearly as well understood as they should be.

We now know that the Soviets did not think like Western governments, and neither did Mao Zedong. We tend to forget that the same applies not only to the Iranians but to the Chinese of today, and to the Russians as well. The goal is not to sound the alarm over the new salience of nuclear weapons in Russian doctrine or over the nuclear buildup in China, although it is imperative to take these developments into account, along with the possible violation of treaties in areas other than nuclear. Rather, the goals are (1) to underline how difficult it will be to craft strategic stability with Russia and China as the NPR suggests; (2) to contemplate possible tension and even confrontation among the United States, China, and Russia; and (3) to understand how nuclear weapons are contemplated by other actors at a time when we ourselves tend to dismiss them. The consequences of mistakes in this area could be devastating. Finally, future cuts in nuclear arsenals should be matched by increases in intelligence expenditures in order to minimize risks.

We may agree with Cervantes that “blessed be those happy ages that were stranger to the dreadful fury of these devilish instruments.”³⁸ However, as long as the devilish instruments are there, the task is to ensure that only one use for them is acceptable: namely, deterrence. This task remains daunting today, as it was during the Cold War. Preventing major wars from happening and regional conflicts from deteriorating is still the task of nuclear deterrence in international relations, at a time when potential adversaries may develop doctrines of a totally different kind.

Even the Soviets were slow in accepting deterrence (assuming they ever did), and they never believed in any “balance of terror” (they sought an imbalance in their favor all along). The problem today, with a large part of the Western world barely able to accept any effort toward its own defense, is the increased reluctance to think about this difficult subject.

³⁸ Quoted in Brodie and Brodie, 1973, p. 10.

Nuclear deterrence doctrine started with the supposedly reasonable calculation of rational adversaries, but since it is rooted in the strongest possible emotion—terror—beliefs are often distorted by the unpleasant character of the subject, which may even be ignored in order to avoid its unpleasantness.

This does not mean that the consequences of willful ignorance and naïveté would not have to be endured should the international security situation deteriorate to the point where a contemporary version of the Cuban missile crisis could arise. Nuclear weapons in the 21st century should be analyzed with the same fervor and intellectual involvement as they were in the first decades of the Cold War. There is currently a belief in Western societies that advances in technology may allow nuclear deterrence to be replaced by conventional deterrence. The summer 2006 war between Israel and Hezbollah in Lebanon conveyed a clear message in at least one area: Conventional superiority is not what many would like to think it is.³⁹

Throughout the Cold War, the two superpowers avoided direct confrontation in order to avoid a nuclear war. They chose instead to fight a number of peripheral conflicts by proxies. Those conflicts had unintended consequences that now pose considerable challenges to Western military forces. Afghanistan may be the best example of this indirect legacy of the Cold War. The success of nuclear deterrence, together with political developments of a very different nature, may have produced monsters.

Finally, if deterrence has always been relative, contextual, and elusive, today a dramatic shift in defense strategy adds new complexities. It is brought about by the power of coercion that nuclear weapons are providing to otherwise tertiary states or actors—that may, in addition, overestimate the compellent power that nuclear weapons grant them. The shift is also brought about by the advent of two new areas of potential conflict: outer space and cyberspace. In the 20th century, deterrence was examined mainly in the nuclear context. Now new areas are open to analysis in an age of asymmetry. Dealing with the new equation is not made any easier by the possible presence, just behind them, of some bigger players.⁴⁰

³⁹ A possible consequence is a reassessment of the relationship between conventional and nonconventional means in warfare and new escalation scenarios.

⁴⁰ The presence of two bigger adversarial players, Russia and China, often ambiguous on Iran and North Korea, only adds to the unpredictability and complexity of the equation.

Concepts

Deterrence was never a well-loved concept in the United States.

—Austin Long¹

Nuclear weapons have a peculiar relationship to thinking. Their (fortunately) abstract nature since August 1945 and their lack of “visibility” since the end of atmospheric tests make them special in this respect. As the late Michael Quinlan stated, “We have no empirical data beyond 1945 about how events may run if nuclear weapons are used.”² Unlike tanks or aircraft, the impact of nuclear weapons on international security is mainly about ideas. To a large extent, nuclear military power is a thinking experiment, and nuclear war a war of thoughts.

This was understood early on in the nuclear age. The large body of sophisticated concepts that was produced over the decades is largely due to the fact that nuclear strategy is *cosa mentale*. And with such powerful weapons, it was critical to do the analytical work properly. The first objective was to grasp the discontinuity brought to the history of warfare by weapons that stretched firepower to previously unforeseen limits. If there was a revolution, it could not be mastered until it was understood. The ability to destroy not only armies or even nations but the whole of humanity³ was a dramatic departure from war as it was known before. For many, it was a traumatic experience, with profound moral consequences. In 1945, U.S. Secretary of War Henry Stimson went as far as mentioning “a revolutionary change in the relations of man to the universe.”⁴ The statement sounds like a moral judgment, as if some forbidden

¹ Austin Long, *Deterrence—From Cold War to Long War: Lessons from Six Decades of RAND Research*, Santa Monica, Calif.: RAND Corporation, MG-636-OSD/AF, 2008.

² Michael Quinlan, *Thinking About Nuclear Weapons*, New York: Oxford University Press, 2009, p. 13.

³ This became true in 1952 with the detonation of a hydrogen bomb on the atoll of Eniwetok; its yield was measured not in kilotons of dynamite but in megatons, and it was a thousand times more powerful than the Hiroshima bomb.

⁴ See Max Hastings, *Nemesis*, London: HarperCollins, 2007, p. 495.

knowledge had been acquired by the dark side of human ingenuity.⁵ All the more troubling was the fact that this same weapon was built in order to defend humanity against a new form of barbarism represented by the Axis powers during World War II.

In this extraordinary context, new strategic concepts were produced for the new weapon (the crucial first strike/second strike and countervalue/counterforce distinctions, for example). They in turn produced debates, all the more passionate as empirical data were lacking. The strategists—mostly civilians—had to deal with situations characterized by complexity and uncertainty, and powerful logical reasoning was often based on simplified assumptions. Doubtful hypotheses were turned into plausible contingencies. Scenarios of crises and simulations of wars prevailed, not conflict elements per se. The speculations concerning Soviet and Western bloc behavior looked unreal and remain untested: The nuclear conflict that was thought up never came true.

As a consequence, the physical dimension of these weapons' use has been better understood than the political or strategic consequences of this use. What a hot war between the USSR and the United States would have looked like is left to conjecture. John F. Kennedy and Nikita Khrushchev certainly considered the question during the Cuban missile crisis in 1962, notably on October 24, when the quarantine line with Soviet ships was decided, and on Black Saturday, when a succession of incidents occurred, each of which might have led to nuclear war.

Over time the concepts evolved with the size and nature of nuclear arsenals, with progress in technology, and with international relations. Knowledge is poor concerning the value and the effect of this evolution, including on the actual policies of nuclear weapon states.⁶ Still, when observed and analyzed more than 20 years after the collapse of the Soviet Union, some concepts seem to have receded into the background (mutual assured destruction, for example⁷). Others appear more risky with new nuclear actors than they did with the Soviet Union (such as manipulation of risk⁸). And still others have acquired more salience in the new context (such as extended deterrence⁹ and deterrence by denial¹⁰).

⁵ Robert Oppenheimer himself said in 1947: "In some sort of crude sense . . . the physicists have known sin." J. Robert Oppenheimer, "Physics in the Contemporary World," Arthur D. Little Memorial Lecture, Massachusetts Institute of Technology, Cambridge, Mass., November 25, 1947.

⁶ No first use, for example, had an objective that was more political than military in nature.

⁷ It is worth noting, though, that even today the United States and Russia have different views on the subject. See Sergei Karaganov, Dmitry Suslov, and Timofei Bordachev, *Reconfiguration, Not Just a Reset: Russia's Interests in Relations with the United States of America*, Report for the meeting of the Russian-U.S. section of the Valdai International Discussion Club, Moscow, June 2009, p. 36.

⁸ A concept invented by Thomas Schelling. See Schelling, 1966. See also Daniel Ellsberg, *The Theory and Practice of Blackmail*, Santa Monica, Calif.: RAND Corporation, P-3883, 1968.

⁹ Nowadays, however, this is more prominent in Asia (East Asia and West Asia) than in Europe, even taking into account countries like Poland and Ukraine that feel threatened by a resurgent Russia.

¹⁰ Nonnuclear missile defenses give this concept new life.

What is the current state of affairs regarding the major nuclear concepts? What can be said concerning their decline or their continuing relevance in the new era? Invented in a world that no longer exists, they have been deemed by highly respected thinkers “as abstruse and irrelevant as the vocabulary of transubstantiation and consubstantiation.”¹¹ But as long as the weapons for which they were created remain present on the international scene, they may continue to have a life of their own. Indeed, the concept of surprise attack might now appear more threatening with more risk-prone adversaries than the Soviets, less regulated crisis management, and poor strategic communications, while the concepts of accidental war, miscalculation, and first strike are likely to appear more unpredictable and threatening than they did during the Cold War, with small, unreliably controlled arsenals and adversaries that—again—barely communicate with each other. Therefore, the goal of this chapter is to revisit old concepts in light of the new strategic environment.

The Dominant Concept Under Attack

The concept of deterrence was put forward by Bernard Brodie at the beginning of the nuclear age in an analytical paper published in the fall of 1945. The most famous sentence of this paper delineates what was to become the dominant concept of the nuclear era: “Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them.”¹² A year later, he was joined by Robert Oppenheimer: “It did not take atomic weapons to make man want peace. But the atomic bomb was the turn of the screw. It has made the prospect of war unendurable.”¹³

Deterrence has been—and still is—the core concept of Western nuclear doctrines. There were indeed some important nuances in the Western camp, since the European nuclear weapon states never thought they needed to develop complex doctrines and abstruse vocabulary in order for deterrence to work. On the Soviet side, it remains unclear whether deterrence was the chief purpose of nuclear weapons.¹⁴ Common wisdom had it that a “war fighting” doctrine was kept at least up to the mid-1960s, after the Cuban missile crisis, when it was realized that nuclear weapons would inflict “unrecoverable losses.” However, the idea that there was a general Soviet

¹¹ Michael Howard, “Brodie, Wohlstetter and American Nuclear Strategy,” *Survival*, Vol. 34, No. 2, Summer 1992, p. 107.

¹² Bernard Brodie, “The Atomic Bomb and American Security,” Yale Institute of International Studies, Occasional Paper No. 18, Fall 1945. See also an expanded version of this paper in Bernard Brodie, *The Absolute Weapon*, New York: Harcourt, Brace, and Company, 1946.

¹³ Robert Oppenheimer, “The Atomic Bomb and College Education, 1946,” in John Bartlett, *Bartlett’s Familiar Quotations*, Justin Kaplan, gen. ed., 16th ed., Boston: Little, Brown, 1992, p. 714.

¹⁴ There are two words in Russian for *deterrence*, one meaning restraint (for Russia’s deterrence of the West) and the other meaning intimidation (for Western deterrence).

predilection for war fighting as opposed to deterrence prevailed among many Western analysts *beyond* this date.¹⁵ In addition, Moscow often showed a tendency to rely on brute force on a scale that appeared useless for deterrence (and sometimes of little use in wartime as well).¹⁶

Deterrence faced tough questions early on concerning its means (numbers, throw-weight, consequences of drawing from the acquisition of invulnerable second-strike capabilities on both sides),¹⁷ its efficiency (will it work if put to a test?), its morality (particularly when it meant killing a major fraction of the Soviet population), its danger (human beings are susceptible to failure, and failure in this case would mean a catastrophe), and indeed its rationality (a gamble with calculations that could not be validated and assumptions that could not be tested¹⁸). In America, nuclear deterrence was seen by many as “an ugly policy,”¹⁹ involving an immoral threat even to enemy societies, as well as “an uncertain proposition.”²⁰

Leaders also had their views and questioned the practical meaning of deterrence. When told by General Andrew Goodpaster that the American nuclear capability for assured destruction against the Soviets was “very high,” President Nixon answered: “But what about the risks we would take if we do that?”²¹ According to many experts, U.S. operational planning never reflected any close approximation of the assured destruction concept.²² The Soviets may have come closer to assured destruction than the United States did, if their frightening chemical and biological weapon arsenals, added to an

¹⁵ See Fred Ikle, “Can Nuclear Deterrence Last Out the Century?” *Foreign Affairs*, January 1973: “Soviet military writers, by and large, express other views . . . stressing . . . the need to be prepared for fighting a nuclear war.”

¹⁶ The undeliverable 60-megaton bomb (the “Tsar Bomba” tested in October 1961) comes to mind. When asked why such a test was conducted, Russian experts answered that the USSR could not match the accuracy of U.S. ballistic missiles and was therefore competing in another dimension: namely, yield. Paul Nitze stated at the time: “We are not particularly impressed with the Soviet threat to develop nuclear weapons in the 100 megaton range. We are not interested in arms of a terroristic nature, but rather our nuclear capability is tailored to specific tasks. We have a tremendous variety of warheads which gives us the flexibility we require to conduct nuclear actions from the level of large scale destruction down to mere demolition work.” Quoted in Robert M. Slusser, *The Berlin Crisis of 1961: Soviet-American Relations and the Struggle for Power in the Kremlin, June–September 1961*, Baltimore, Md.: Johns Hopkins University Press, 1973, p. 223.

¹⁷ The means evolved considerably over time. When the Soviets acquired secure second-strike forces in the 1970s, deterrence meant that the use of nuclear weapons by one side would bring about an equally devastating counterstrike. U.S.-Soviet deterrence was mature, but the challenge presented to U.S. extended deterrence in Europe only grew with such development.

¹⁸ See Ikle, 1973, note 12.

¹⁹ See Long, 2008, p. vii.

²⁰ Long, 2008, p. vii.

²¹ U.S. Department of State, “Document 37: Minutes of a National Security Council Meeting,” in *Foreign Relations of the United States, 1969–1976*: Vol. XXXIX, *European Security*, Washington, D.C.: Office of the Historian, p. 88.

²² Taking into account that by the late 1960s every known Soviet military installation, industrial center, and city of at least medium size had been targeted several times over, those experts may be wrong.

already considerable strategic and tactical nuclear weapon capability, are taken into account. In his speech to the Twentieth Party Congress in 1956, at a time when Soviet capabilities were still limited, Anastas Mikoyan declared that “future wars would be characterized by the mass use of the air force, rocket weapons and various means of mass killing such as atomic, thermonuclear, bacteriological and chemical weapons.”²³

For opponents of nuclear weapons today, it is a sensible strategy to go for the core of the doctrine and destroy it. Nobody should be surprised that deterrence has been targeted by the abolitionist camp. The end of the Cold War has given new support to those who had always objected to nuclear weapons because they felt either that the Soviets had no hostile intentions (or, if they did, there was no assurance that deterrence would have worked in case of attack) or that those weapons were too dangerous and could not be considered accident-proof. Finally, this camp may argue that even if all of the above was wrong, in any case, the Cold War ended and deterrence has become meaningless. Hence the question: Whom to deter?

Another factor came into the picture after September 11. If the most important security problem today is terrorism, then what is the meaning of deterrence in this context? How can one deter violent nonstate actors with no territory to protect that are bent on martyrdom and suicide?²⁴ The same applies to states sponsoring terrorism. If nuclear terrorism is a real danger, what is the relevance of nuclear deterrence? This kind of criticism is not limited to arms controllers and pacifists. Then—Vice President Dick Cheney expressed a similar view at the Heritage Foundation in October 2003: “The strategy of deterrence, which served us well during the decades of the Cold War, no longer does. Our terrorist enemy has no country to defend, no assets to destroy in order to discourage an attack.”²⁵ Hence the shift from deterrence to preemption.

Still another problem stems from the existence of regional nuclear actors. North Korea and Iran cannot be compared to the USSR. Being less powerful, they may be more likely to be deterred, but the opposite argument can also be made given their risk-prone nature and the reluctance of their leaders to accept compromise. (Even during the Cold War, strategists like Albert Wohlstetter warned of the false idea that a strong deterrent would automatically deter less formidable contingencies than the USSR.) Finally, regional or not, the greater the number of owners, the higher the risk of use.

From these different premises the conclusion is drawn that as long as certain states own nuclear weapons, others will try to acquire them. For many in the West, the

²³ Kissinger, 1957, p. 392.

Actually, there is little evidence that such radical strategy was no longer valid in the 1970s and 1980s, when the Soviets were developing their considerable biological empire after signing the BWC in 1972. Meanwhile, Washington was convinced that *flexible response* was reassuring allies. Two very different worlds indeed.

²⁴ This skepticism concerning the role of deterrence vis-à-vis terrorists is widespread but not a universally shared view. See, for example, Paul K. Davis and Brian Michael Jenkins, *Deterrence and Influence in Counterterrorism: A Component in the War on al Qaeda*, Santa Monica, Calif.: RAND Corporation, MR-1619-DARPA, 2002.

²⁵ Richard B. Cheney, “Remarks by the Vice President to the Heritage Foundation,” speech delivered at the Heritage Foundation, Washington, D.C., October 10, 2003.

emergence of new nuclear powers and the threat this represents for security outweigh the reassuring aspects of nuclear weapon ownership. And the security dimension of deterrence seems to be overwhelmed by the insecurity stemming from nuclear proliferation. Such seems to be the position of President Obama.

However, as long as nuclear weapons are around, Western leaders agree that keeping deterrence alive and working (with safe, secure, and effective stockpiles) remains a major endeavor and that potential adversaries should not believe that their acquisition of nuclear weapons can bring them victory in times of crisis. What is less clear is the addition of deterrence to other concepts (e.g., assure, dissuade, compel, defeat), introducing useless confusion since the 2002 NPR. Also unclear is the role of deterrence by punishment (as opposed to deterrence by denial,²⁶ often referred to as the only form of acceptable deterrence after the end of the East-West confrontation), which seems to be disappearing from U.S. minds and doctrine. The irony of this is that a country such as Iran relies openly on deterrence by punishment in case of a limited Israeli or U.S. attack, threatening to inflict a high cost on the attacker. So does North Korea.²⁷

The goal must be to rely on deterrence and be sober about it—that is, to understand that crisis stability in the contemporary world may be more complex than it was during the Cold War, and that limiting nuclear war, should it break out, poses different questions with limited arsenals in the hands of determined adversaries. The risks of deterrence failing to prevent nuclear use are greater today than they were in the 20th century. And indeed, deterrence is not only about influencing adversaries' behavior but also about taking risks. There is some doubt about whether contemporary leaders would take the kind of risks that allowed the main nuclear crises during the Cold War to reach a successful outcome. Those risks, particularly with ballistic missile proliferation, are also generating worldwide demand for a new generation of ballistic missile defenses (as soon as they prove efficient). They will not replace deterrence, but they will provide a useful supplement.²⁸

Extended Deterrence: A Concept Revived

Deterrence may be under attack in the West, but extended deterrence is much sought after, notably in the East. During the Cold War, the United States and NATO pursued

²⁶ *Deterrence by punishment* means threatening massive retaliation. *Deterrence by denial* is supposed to deny any gain from an attack, not to impose a threat. The distinction was introduced in Glenn Snyder, *Deterrence by Denial and Punishment*, Research Monograph No. 1, Princeton, N.J.: Center of International Studies, Princeton University, 1959.

²⁷ *Compellence* is still more difficult to achieve than deterrence by denial or deterrence by punishment. As Thomas Schelling remarks, holding a large bomb and threatening to lob it unless somebody moves does not work so well. Schelling, 1966, p. 70.

²⁸ The challenge to deterrence posed by developments in outer space and cyberspace is described and analyzed in Chapter Seven.

a strategy that relied heavily on extended deterrence as the ultimate guarantor of Western European security (with over 7,000 tactical nuclear weapons located in Europe in the 1980s). A massive Soviet conventional onslaught would have been met with the possibility of nuclear escalation. The nuclear umbrella provided to allies in Europe and Asia was meant to reassure them, to leave them less vulnerable to Soviet intimidation, and to prevent them from acquiring the bomb themselves. The pursuance of extended deterrence also arose from the perceived needs to have reliable allies surrounding the Soviet periphery and to minimize the cost of their security by lessening dependence on local defensive power.²⁹

But extended deterrence, needed as it may have been, has always been a far more difficult business than deterrence itself. Compared to Washington's promise to protect its allies against a conventional attack from the Soviet Union, bilateral U.S.-Soviet deterrence was an easy task, particularly when American cities became vulnerable. As Bernard Brodie puts it:

We may be quite sure we will hit back if hit directly ourselves, but will we do so if any of our chief allies is attacked or threatened to attack? We are, to be sure, legally committed to respond with all our power and our leaders may presently be convinced that if occasion should arise, they would honor that commitment. But surely they would on such an occasion be as much affected by the consideration that our people are hopelessly exposed to enemy counterattack.³⁰

Thomas Schelling makes a similar point:

It hardly seems necessary to tell the Russians that we should fight them if they attack us. But we go to great lengths to tell the Russians that they will have America to contend with if they or their satellites attack countries associated with us. Saying so does not always make it believed. We evidently do not want war and would only fight if we had to. The problem is to demonstrate that we would have to.³¹

The credibility problem was accompanied by an operational problem. According to Lawrence Freedman, the security of Western Europe may have depended upon this commitment as well as on the limitation of nuclear proliferation, and the Soviet Union took it seriously, but "it has proved to be almost impossible to plan sensibly" for this purpose.³²

²⁹ See Kissinger, 1957, p. 239: "The chief purpose of this intricate structure is to surround the Soviet periphery with a system of alliances so that an attack on any part of it will always confront an aggressor with an alignment of powers which would make him hesitate."

³⁰ Bernard Brodie, *The Anatomy of Deterrence*, Santa Monica, Calif.: RAND Corporation, RM-2218, 1958, p. 27.

³¹ Schelling, 1966, p. 35.

³² Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd ed., New York: Palgrave Macmillan, 2003, p. 405.

As a matter of fact, extended deterrence has always appeared less credible than central deterrence, and for good reason. John F. Kennedy did not think the Soviets were going to believe that America would risk annihilation for the sake of its allies.³³ Henry Kissinger added at about the same time that the problem was magnified by the tendency of U.S. strategic doctrine to transform every war into “an all-out” war.³⁴ And a major challenge came from General Charles de Gaulle as early as 1955: “No one in the world—particularly no one in America—can say if, where, when, how, and to what extent the American nuclear weapons would be employed to defend Europe.”³⁵ He agreed here with Henry Kissinger, who did not think the U.S. allies should ask America to make commitments that it did not mean and, if it did mean, would not implement. (Allies in Asia are now afraid to hear exactly that from Washington as China tests Washington’s ability to serve credibly as a guarantor of their security.) There was also the fear in Europe that the United States and the Soviet Union might seek to use Europe as a nuclear battleground and thus avoid attacks on their own homelands.

To what extent is this relevant to the East Asian allies of the United States today? In the view of the author, it is relevant to Japan, where additional measures may be adopted jointly by Washington and Tokyo. A 2009 report on the Japanese-U.S. alliance contains the following:

Additional measures may include: (1) creation of a mechanism modelled after the Nuclear Planning Group (NPG) of NATO to discuss how the USA should best employ its nuclear weapons for the defense of Japan; (2) modification of Japan’s Three Nuclear Principles so as to permit the USA to introduce nuclear weapons into the territory of Japan; (3) establishment of a system in which Japan would field delivery vehicles for nuclear weapons introduced by the USA with the latter retaining full control of the warheads in peacetime; and (4) provision by the USA to Japan of technology related to nuclear weapons and means of delivery, thereby enabling Japan to attain a limited nuclear capability, which would be employed in conjunction with the USA.³⁶

The Soviets had their own version of extended deterrence. The Warsaw Pact, established in 1955, contained a pledge by the countries involved to enter into mutual

³³ This is one of the reasons a school of thought represented by Herman Kahn advocated strategic nuclear superiority coupled with offensive counterforce weapons, strategic defenses, and civil defense.

³⁴ Kissinger, 1957, p. 240: “For, while it is true that all our security arrangements are regional in nature, they are given a worldwide application by our increasing reliance on all out war, both doctrinally and technically. Thus the outbreak of any war anywhere becomes of immediate concern to all our allies and causes them in every crisis to exert pressure for a policy of minimum risk.” Also, p. 240: “The inconsistency between a reliance on all out war and the political commitment of regional defense has been the base of our coalition policy.”

³⁵ Quoted in Kahn, 1968, p. 265.

³⁶ Research Group on the Japan-US Alliance, “A New Phase in the Japan-US Alliance: 2009 Project Report,” Tokyo, Japan: Institute for International Policy Studies, September 2009, p. 10.

consultations in case of an enemy attack and the promise to assist each other against such an attack by all the means deemed necessary.³⁷ But the two countries that generated explicit extended deterrence statements did not have much to do with Eastern Europe:³⁸ they were China and Cuba. After World War II, a number of U.S. nuclear threats were directed against China, at a time when there was no Chinese bomb and Moscow protected Chinese security interests. In 1958, during the second Taiwan Strait crisis, Nikita Khrushchev made it clear that Moscow would protect China:

Those who harbor plans for an atomic attack on the Chinese . . . should not forget that the other side too has atomic and hydrogen weapons and the appropriate means to deliver them and if the Chinese People's Republic falls victim to such an attack, the aggressor will at once get a rebuff by the same means.³⁹

The interesting point here is that at the time, Beijing no longer believed it could rely on Soviet extended deterrence and had drawn its own conclusion from this consideration (i.e., build the bomb).

Cuba is also an interesting case. The 1962 Cuban missile crisis erupted because Moscow attempted to provide extended deterrence to an ally that could not be protected conventionally. However, the relationship between Cuba and Moscow was not very successful as far as extended deterrence was concerned. The Soviets knew Fidel Castro too well. The Cuban leader first tried to convince Moscow to use strategic weapons against the United States should America invade Cuba. Having failed to obtain this commitment, he tried (successfully) to get Soviet missiles, which led to the October 1962 nuclear crisis, but he never got authority on them as he wanted. And when Castro finally tried to join the Warsaw Pact some time later, Nikita Khrushchev was wise enough to refuse.⁴⁰

Concerning China, its decision to join the Korean War in 1950 was made at a time when it had no nuclear capability and knew—thanks to espionage—that there was no credible American nuclear threat. Mao was convinced that he needed to intervene in Korea because not doing so might call into question China's capability and

³⁷ The Warsaw Pact was formally ended in Prague in June 1991. As Vojtech Mastny writes: "The collapse of the Warsaw Pact without firing a shot against its main enemy is a reminder of how quickly an impressive military machine can fall to pieces once the necessary will and money are no more." Vojtech Mastny, "The Warsaw Pact as History," in Vojtech Mastny and Malcolm Byrne, eds., *A Cardboard Castle?* New York: Central European University Press, 2005, p. 74.

³⁸ Hungary in 1956 and Czechoslovakia in 1968 showed that Eastern European countries had to be protected from Moscow more than from NATO.

³⁹ Richard K. Betts, *Nuclear Blackmail and Nuclear Balance*, Washington, D.C.: Brookings Institution Press, 1987.

⁴⁰ See Mastny, 2005, p. 24.

resolve to defend its interests in other places, including Taiwan,⁴¹ and he took the risk accordingly. Whether a credible nuclear threat would have spared the United States, South Korea, and the U.N. coalition three years of devastating war remains an open question for historians to argue. In the event of another Korean conflict in the future, it is unclear what Beijing's attitude would be, but inaction on its part looks unlikely, particularly at a time when China has an increasingly respectable nuclear arsenal and is substantially more powerful and self-confident than it was in 1950 (such self-confidence, however, would not be justified in a confrontation with the United States, which Beijing would most likely lose).

After the Cold War, major shifts in nuclear extended deterrence in Asia were expected. What was thought to be difficult before the breakdown of the Soviet Union appeared less necessary. Actually, an Asianization of East Asian affairs and an American retreat from an active role in the region were sometimes even thought likely to render extended deterrence unnecessary. But Asia was not Europe. Tensions had not disappeared there; on the contrary, China's military modernization and North Korea's ballistic and nuclear developments represented new threats that the end of the Cold War had revealed. This troubled part of the world still needed U.S. commitments—including nuclear commitments—and allies in the region have made this clear.⁴²

The message was understood to a certain extent in Washington. The 2006 U.S. National Security Strategy reiterated the importance of maintaining credible nuclear forces as a deterrent against threats to the United States and its allies, and a nuclear dialogue between Washington and Tokyo was opened in 2010. The new U.S. triad added missile defenses that had a direct relevance to extended deterrence. Japan deployed Aegis ships and PAC-3 systems in order to counter regional missile threats. Still, Tokyo looks increasingly nervous about the solidity of the U.S. deterrent in Asia.⁴³ This is clear in what may be considered an extreme statement by the Japanese defense minister, Fumio Kyuma, who reportedly said the following concerning the U.S. nuclear deterrent: "The strongest deterrence would be when the US explicitly says: If you drop one nuclear bomb on Japan, the US will retaliate by dropping ten on you."⁴⁴

This is not the American way of dealing with extended deterrence, particularly after the Cold War. More indicative of the U.S. policy is the exchange Joseph Nye had in China in 1995 regarding Taiwan. In case of a Chinese military threat to Taiwan, he said, "We don't know what we would do, and you don't because it is going to depend

⁴¹ Mao believed he would lose all credibility vis-à-vis Taiwan if he was not seen as prepared to enter the Korean War to protect North Korea.

⁴² U.S. extended deterrence was born during the Korean War, even though the center of gravity was in Europe.

⁴³ This is particularly true since Washington committed itself to the abolition of nuclear weapons, an objective that Tokyo had always favored before facing the possibility of a weakening U.S. nuclear umbrella.

⁴⁴ Quoted in "North Korea's Nuclear Threat/Reinforcing Alliance with US Helps Bolster Nuclear Deterrence," *Daily Yomiuri* (Internet version) in English, March 23, 2007.

on the circumstances.”⁴⁵ For people who have not read Thomas Schelling, that statement may not amount to much of a deterrent against attack.⁴⁶ It might be seen as an unwillingness to commit to the defense of Taiwan or even, by some, as an encouragement to attack. Reassurance may be found somewhere between the formula suggested by the Japanese defense minister and Joseph Nye’s clever but unclear response. From Tokyo’s viewpoint, the 2010 bilateral U.S.-Japanese talks on security issues should address the subject in a new and most uncertain strategic context.⁴⁷

In the Middle East, because of the developing Iranian nuclear program, some U.S. allies (Saudi Arabia comes to mind) have started asking for additional guarantees from Washington.⁴⁸ There have also been talks in Washington (and public statements by the U.S. Secretary of State) about offering Israel and U.S. allies in the Middle East a guarantee vis-à-vis Iran, raising important questions: Would the guarantee—and the deterrent—be nuclear or conventional? Would it mean more missile defenses in the region? How would U.S. extended deterrence be perceived in Israel, a country known for relying on itself for its security? Would America commit itself to automatic involvement in a regional nuclear exchange in the Middle East? And doesn’t the proposal imply a tacit acceptance of a nuclear-armed Iran? If so, how credible is risking nuclear war on the one hand while on the other hand being unwilling to prevent nuclear acquisition—an easier endeavor—when there is still time?

In 1991, when deterrence was meant to protect both U.S. troops and allies, Iraq seemed to understand that the threats of retaliation included nuclear weapons. This had an effect on its behavior during Operation Desert Storm, even if the U.S. message was more a bluff than the expression of precisely planned war operations. Twenty years later, allies are still worried about the potential U.S. response to chemical or biological warfare. Would such an attack be considered as threatening as a nuclear attack?⁴⁹ Under what circumstances? And will *conventional* extended deterrence (often supported by those favoring the elimination of nuclear weapons) be deemed effective in protecting allies against nuclear-armed adversaries? This appears unlikely, particularly in the Middle East and in East Asia. Preponderant Soviet conventional military power did not enable the USSR to prevail in Berlin during the Cold War. Only the strong credibility that Washington would risk a nuclear war over Berlin carried the day.

⁴⁵ Quoted in Payne, 1996, p. 41.

⁴⁶ According to Schelling, uncertainty and ambiguity are good for deterrence.

⁴⁷ It remains uncertain because of the military rise of China, its lack of transparency, and the perceived ambiguity of the U.S. position.

⁴⁸ In 2011, a number of Arab countries, worried about what they consider to be an inconsistent American foreign policy during the pro-democracy demonstrations, are reportedly looking east for a whole range of relationships, including security.

⁴⁹ According to the 2010 U.S. NPR, it may.

One major challenge in the years to come will be for Washington to avoid encouraging allies to seek their own nuclear weapons because of a perceived U.S. unwillingness to protect them from future threats by nuclear-armed states. As a 2007 report by the State Department's International Security Advisory Board concludes:

There is clear evidence in diplomatic channels that US assurances to include the nuclear umbrella have been, and continue to be, the single most important reason many allies have foresworn nuclear weapons. This umbrella is too important to sacrifice on the basis of an unproven ideal that nuclear disarmament in the US would lead to a more secure world . . . a lessening of the US nuclear umbrella could very well trigger a cascade of nuclear proliferation in East Asia and in the Middle East.⁵⁰

This was still true in 2011.

Self-Deterrence: The Best—and Worst—of Worlds

The meaning of self-deterrence during the confrontation with the Soviet Union was related to retaliatory threats lacking credibility when there were risks to homeland survival. However, since this risk was real on both sides, there ensued a situation in which both adversaries recognized nuclear war as the catastrophic outcome of a confrontation. Self-deterrence on both sides is very close to a successful bilateral deterrence. Each side exercises caution, maturity, and responsibility in order to avoid any crisis escalation leading to nuclear exchange.

A very different version of self-deterrence surfaced after the end of the Cold War. With the emerging specter of rogue nuclear adversaries, it appeared more likely that Western nations would be the ones being deterred, their nuclear superiority notwithstanding. The following question is often asked: Would the coalition have waged Operation Desert Storm or Operation Iraqi Freedom had Saddam Hussein had a nuclear capability? Most often, the answer is probably not, meaning that big arsenals can be defanged by dictators with a handful of nuclear weapons. If such is the case, it is a major incentive for potential adversaries to acquire nuclear weapons. And it should be a major reason to fight the arrival of new nuclear powers on the world scene with all available means (diplomacy, sanctions, special operations, and military action).

An even more worrisome meaning of self-deterrence is the reticence, or the refusal, to exert nuclear deterrence *in any event*, either due to fear of the consequences or because the abhorrence of possible nuclear use is stronger than the perceived need to retaliate in case of an attack. This would be a most dangerous stance: Without the threat of use, use may become more likely.⁵¹ In principle, even many advocates of aboli-

⁵⁰ International Security Advisory Board, *Report on Discouraging a Cascade of Nuclear Weapons States*, Washington, D.C.: Department of State, October 19, 2007, pp. 22–23.

⁵¹ See Freedman, 2003, p. 191.

tion recognize the need to retaliate in kind in case of a nuclear attack against one's territory (central deterrence) or the territory of an ally (extended deterrence). Few would suggest that the West unilaterally give up its arsenals while others retain theirs, which is also a change from the unilateralism that held sway in some Western quarters during the Cold War. The only durable use for nuclear weapons is thought to be to prevent their use by others. In societies where domestic debates have a role in the political process, it would be extremely difficult to justify any other position. But there are a number of gray zones—level of actual damage, unclear attribution, citizens as hostages of a dictatorial regime—that could be easily exploited by an astute adversary in the current context. Self-deterrence encourages the proliferation of WMDs. And it may become an invitation to actually use them.

Mutual Assured Destruction: An Old-Fashioned Concept

The idea of mutual assured destruction (MAD) is thought to be a legacy of World War II, the first war “in which people began to take seriously the possibility that the outbreak of world war would touch off an orgy of immediate—almost instantaneous annihilation.”⁵² Absent the reality of 60 million dead, it may indeed have been more difficult to think in terms of destroying the ten largest cities in the United States and the USSR. In the 1950s, the formula was a “balance of terror.” The concept of MAD first appeared in 1964, after the Cuban missile crisis.⁵³ It meant a position in which attack by either side would result in mutual annihilation because of the retaliatory capability of the opponent. The acronym MAD was subject to many criticisms (Robert McNamara was one of the most famous critics) as the concept was thought by many to be “no more insane and a lot more sensible than many other strategic formulations.”⁵⁴ MAD never made sense to some of the most important American thinkers. Albert Wohlstetter, for example, who wrote a piece called “How Mad Is MAD?” said it only made murder “respectable” and never liked the idea.⁵⁵

⁵² Kahn, 1960, p. 375. Kahn stresses that both British and French airpower experts “talked often and convincingly of the knock out blow,” in which the side with the superior air force would win the war in a few days or weeks.

⁵³ The first formulation of MAD was expressed much earlier by Robert Oppenheimer in 1953: “We may anticipate a way of affairs in which the two Great Powers will each be in a position to put an end to the civilization and life of the other, though not without risking its own. We may be likened to two scorpions in a bottle, each capable of killing the other, but only at the risk of his own life.” In J. Robert Oppenheimer, “Atomic Weapons and American Policy,” *Foreign Affairs*, Vol. 31, No. 4, July 1953, p. 529.

⁵⁴ Freedman, 2003, p. 234.

⁵⁵ Albert Wohlstetter, “How Much Is Enough? How Mad Is MAD?” in Fred Warner Neal and Mary Kersey Harvey, eds., *Pacem in Terris III: Vol. 2, The Military Dimensions of Foreign Policy*, Washington, D.C.: Center for the Study of Democratic Institutions, 1974.

At the time of the Johnson administration, the concept of finite deterrence heralded MAD's decline. The idea that the United States should respond with nuclear weapons to any aggression anywhere was no longer a tenable policy. The wish to exclude population centers originated in the 1960s; the ability to get counterforce, as opposed to countervalue, weapon systems was decisive in undermining MAD. But, forces being more costly to attack than cities, the move was not followed by other nuclear weapon states, with the exception of the USSR.⁵⁶

Moscow not only could not accept the idea, present in mutual deterrence, *that it had to be deterred*, it also thought that Washington was using MAD to build more forces in the name of stability. A month after Kennedy's election, a U.S.-Soviet meeting took place, and the Soviet delegation was concerned about the "missile gap" debate and a consequent U.S. buildup. Arthur Schlesinger recalls in his memoirs that, as the U.S. negotiator, Walt Rostow insisted that

any Kennedy rearmament would be designed to improve the stability of the deterrent, and the Soviet Union should recognize that as the interest of peace. . . . Kuznetsov, innocent of the higher calculus of deterrence as recently developed in the United States, brusquely dismissed this explanation.⁵⁷

The differences in views on MAD between Washington and Moscow were even more startling after the end of the Cold War. During the discussions that led to U.S. withdrawal from the Antiballistic Missile (ABM) Treaty, the lack of need for MAD with the USSR was reportedly a justification in Washington for scrapping an agreement based on MAD. But the Soviets did not see it in the same light: They thought it was an excuse more than a justification. Twenty years after the end of the confrontation with the United States, Moscow still presents the overcoming of U.S.-Russian MAD as a U.S. vital interest, while Russia still ascribes top priority to the preservation of the status quo. MAD seems to be a matter of status for Russia. China is not far from expressing the same view. It appears willing to get this "recognition" from the United States, something Washington wishes to prevent in order to avoid getting into the kind of relationship with Beijing in the 21st century that it had with Moscow in the 20th. This could also encourage China to significantly develop its nuclear arsenal, an option that remains open with Beijing's current stockpile of fissile material, its "minimum deterrent" policy notwithstanding. If it was good for stability during the Cold War, the argument goes in China, why should it be destabilizing now?⁵⁸

⁵⁶ An arms race in counterforce weapons started between the two superpowers in the 1980s.

⁵⁷ Arthur Schlesinger, *A Thousand Days: John F. Kennedy in the White House*, Boston: Houghton Mifflin, 1965, p. 769. Who would blame Kuznetsov?

⁵⁸ Some analysts consider MAD to still be consistent with 2010 NPR treatment of Russia and China, but the fact of the matter is that the acronym has disappeared.

In other parts of the world, because of small arsenals, inaccurate weapons, and large urban concentrations, MAD may remain the only possible doctrine. *The growth of cities in the contemporary world and the potential for massive attack or retaliation against urban concentrations make this concept, old-fashioned as it is in the West, tempting for new nuclear powers.* What targets would be chosen by China, Pakistan, India, Iran, or North Korea? They would most likely be cities.

Finally, as the number of nuclear warheads and missiles is reduced in the disarmament process, at some point what other choice will be left than to target cities? MAD may not be such an old-fashioned concept after all, even if Washington rejects mutual vulnerability with old and new nuclear states—or does it?

Stability: The Dream Is Over

Whether or not the Cold War represented a stable order can be debated at length, not only in strategic terms (crises showed the limits of Cold War stability) but also taking into account the very foundations of this “stability,” with nations in Eastern Europe, for example, unable to make decisions regarding their own fate.⁵⁹ But nobody would dispute the intrinsic instability of our time, with multiple centers of crises and the increasing difficulties the major powers have controlling them. Public statements are still made on the necessity to preserve or even strengthen “strategic stability” (generally to reassure Russia and China), but the meaning of these two words is increasingly unclear. Actually, since the 2010 NPR, the Pentagon has sought a discussion with China on this issue; Beijing has so far refused.

During the Cold War, the greatest stimulus of instability was the possible coincidence of an international crisis and the reciprocal fear of surprise attack. The Cuban missile crisis was such an experience. The main objective of policymakers was therefore to reduce all temptations to strike first and “to institutionalise a less precarious balance of terror rather than to support it. The goal (was) stable mutual deterrence, which in practice amounts to playing for a stalemate rather than win in the grimmest of games, should deterrence fail.”⁶⁰

The problem was, and still is, the conjunction of immensely destructive weapons with leaders as they have always been—prudent or trigger-happy, determined or hesitant, courageous or cowardly, intelligent or dumb. The characteristics of contemporary military technology may have placed too heavy a burden on politicians tasked with stabilizing the military environment and international relations with nuclear weapons in

⁵⁹ Actually, the United States and the USSR never reached an agreement on the meaning of strategic stability. In addition, the concept has always been somehow elusive because of the dynamic relationship between the two superpowers.

⁶⁰ See Freedman, 2003, p. 188.

their midst. The sources of instability may come from diverse or even opposite sources: politicians with undeviating aggressiveness and politicians with low risk-taking propensities. Fidel Castro was a representative of the first category during the Cold War; North Korea and Iran are both good candidates for the same role in the contemporary world. Concerning the second category—politicians with low risk-taking propensities—Western attitudes toward conventional risks in places such as Afghanistan (and often Western military budgets as well) give an indication of what could or would happen in the event of a nuclear crisis.

Another issue is the kind of stability afforded by *triangles* (three nuclear actors) as opposed to *duels* (bipolarity).⁶¹ The most important of these triangles comprises the United States, Russia, and China. It existed under a different guise during the Cold War, but China has considerably elevated its own status since the collapse of the Soviet Union. Three major periods can be identified in the 20th century: Russia and China quasi alliance (1950–1960), Russia and China estrangement (1960–1972), and U.S.-Chinese rapprochement (after 1972), when Nixon decided that U.S. strategic interest meant recognizing China. Today, after a long period of mutual animosity during the Cold War, relations between Moscow and Beijing have improved to such an extent that Russian citizens consider China a friendly country.⁶² Under the surface, though, a strategic rivalry appears to be growing, notably in Central Asia, Eastern Siberia, and the Arctic.

The rise of China and its economy threatens Russia on several fronts, including the increasing marginalization of Moscow in international decision making. Beijing is also continually stealing Russia's intellectual property in a number of critical technologies, and Moscow acknowledges more or less publicly that its relationship with China is "complicated," a word that can have many meanings. What would the consequences of all of the above be during a nuclear crisis between China and the United States over, say, Taiwan? Moscow would most probably stand aside. How China and Russia would react in a crisis between the United States and Iran may be a more pressing question. Beijing may fear instability in the Middle East resulting from the appearance of a new nuclear power in the region without tough sanctions being applied against Tehran, but the preservation of its commercial interests appears to be more important than this fear. As for Moscow, though it would like to see the Iranian nuclear and ballistic missile threat disappear, it remains highly critical not only of any potential American or—more likely—Israeli military action to that end but even of the imposition of new sanctions.

Another significant nuclear triangle is formed by China, Pakistan, and India. The alliance between Pakistan and China is "deeper than the deepest sea," according to one

⁶¹ This difference in state relationships attracted Martin Wight's attention in an interesting piece written in 1972, "Triangles and Duels," where he analyzes in particular the relationships among Athens, Sparta, and Persia over time. Wight, 1977.

⁶² Tengri News, "One Third of Russian Citizens Consider Kazakhstan the Most Russia-Friendly," June 4, 2011.

Pakistani official.⁶³ Rooted in history and military cooperation, it is a vital alliance for Pakistan, and for China it represents a permanent indirect threat to India. Pakistani authorities carefully avoid voicing any criticism that might alter their relationship with China. As a matter of fact, Beijing's brutal repression of the Muslim Uyghur community in July 2009 has not affected the relations between China and Pakistan. Islamabad took care to prevent any political use of the repression against Muslims from damaging the interests of the two countries.⁶⁴ In 1999, though, during the Kargil crisis, China intervened, along with the United States, to convince Pakistan that the Line of Control was too dangerous to cross now that India and Pakistan had open nuclear capabilities. In the event of an India-China crisis, however, Pakistan would most probably be used by China as a second front against India.

Contrary to what is true in the physical world, where three points provide more stability than two, in the international arena, triangles may make a situation more unstable and difficult to control (escalation dominance) as they introduce more variables into the algebra of deterrence.

Second Strike: A Grand Old Concept with a Bright Future

The importance of a second-strike capability came from conventional warfare and was adapted to the nuclear era. It was a decisive concept, notably when the Soviets acquired the ability to strike American cities. It is often wrongly associated with the counterforce (as opposed to countervalue) concept, which was meant to give more options to political leaders. (Actually, first strike demands lots of counterforce weapons—to destroy hardened underground silos, for example.)

The weapons that were protected from a first strike were not accurate enough for counterforce attacks. The second-strike concept therefore did not rule out cities but added a threat to military targets; such was the explanation provided by Robert McNamara to Congress in 1963:

In planning for our second strike force, we have provided . . . a capability to destroy virtually all the “soft” or “semihard” military targets in the Soviet Union and a large number of their fully hardened missile sites, with an additional capability in the form of a protected force to be employed or held in reserve for use against urban and industrial areas.⁶⁵

⁶³ As stated by Pervez Musharraf in Beijing in June 2006. Xinhua News Agency, “Hu Jintao, Musharraf Congratulate Special Column Marking Diplomatic Ties,” June 10, 2006.

⁶⁴ The rioting in Urumqi resulted in the death of 200 people and the injury of more than 1,000. It was the worst violence to have affected Xinjiang since the establishment of the People's Republic of China (PRC) 60 years ago.

⁶⁵ Secretary of Defense Robert McNamara, “Statement on the Defense Budget for Fiscal Year 1964–1968,” *Defense Program and 1964 Defense Budget*, January 27, 1963, p. 41.

As Secretary of Defense, McNamara tried to convince Moscow to subscribe to “city avoidance” but failed. Events were on the side of the Soviets at the time. In 1962, during the Cuban missile crisis, John F. Kennedy initially threatened Soviet cities, not missile sites. In addition, a counterforce first strike was also consistent with the NATO doctrine of first use (a nuclear response to a major Soviet conventional attack). Be that as it may, the Soviets seemed to believe that, whatever second-strike capability the United States was able to deploy, acquiring a first-strike capability was an American endeavor all along, perhaps because this was what Moscow tried to acquire itself.

The idea that second-strike capabilities would paralyze an enemy and that destructive retaliatory power precludes the offensive is not supported by facts. In 1962, Fidel Castro encouraged the Soviets to use nuclear weapons, knowing that it would lead to the destruction of Cuba. And in 1981, almost 20 years later, Castro asked the Soviets to reintroduce nuclear weapons to Cuba, while Mao expressed his readiness to accept massive Chinese casualties in a nuclear war over Taiwan.⁶⁶

Today, a major objective of Beijing is to acquire a credible second-strike capability, with more survivable forces, modern nuclear submarines (Han class), and road-mobile, solid-fuel intercontinental ballistic missiles (ICBMs). Apparently there is no initiative to try to cap this modernization effort, not even rhetorically, on the part of Western abolitionists, who somehow find a good explanation for this policy (deployment of U.S. missile defense, for example) or claim that the Chinese modernization is very limited, which is becoming increasingly untrue.

Parity: A Confused and Confusing Concept

Defining parity was a constant problem during the Cold War. What exactly should be compared on both sides? It was tempting to look at parity from an essentially quantitative perspective, but that approach was soon understood to be mistaken (as soon as the Soviets dramatically increased their own arsenal). Qualitative elements related to weapon systems (notably survivability) had to be taken into account, and there were other attributes of power besides military ones (resolve and alliances, for example).

On the Soviet side, quantity appears to have been present but secondary in their constant quest for “superiority.” This was true even for conventional forces when NATO and the Warsaw Pact were compared. According to a 2005 study, the “bean counting” was “of secondary importance in the Warsaw Pact’s assessments of itself as well as of its adversary, and in any case largely irrelevant in determining its real strength.”⁶⁷ In the

⁶⁶ How much was genuine and how much was bluster will never be known for sure, but the reconstitution of the Cuban missile crisis after the Cold War, as well as Chinese behavior as early as the Korean War, signals that both leaders may have been particularly reckless.

⁶⁷ See Mastny, 2005, p. 1.

United States, the numbers became less and less important as the Soviet stockpile grew. A survivable retaliatory force was what mattered for efficient deterrence.

During the Strategic Arms Limitation Talks (SALT), the U.S. objective was essential equivalence, defined as conferring no unilateral advantage to either side. A favorable imbalance was thought to allow political pressure or raise doubts about direct and extended deterrence. As Secretary of Defense Harold Brown put it, essential equivalence allowed guarding “against any danger that the Soviets might be seen as superior—even if the perception is not justified.”⁶⁸

By the 1980s, U.S. superiority had disappeared, and no American President endorsed the notion of regaining a nuclear advantage. On the other end of the spectrum, Robert McNamara remarked that the United States had drawn little advantage from its early nuclear superiority: It did not prevent the Korean War or Soviet pressure on Berlin. The problem, therefore, was not only the *definition* of parity but its *importance*.

There were advocates of mutual stable deterrence, but not everybody thought that a stable balance of power between the two adversaries was the best way to ensure deterrence.⁶⁹ Advocates of defenses had a different view, as did advocates of *disparity*. Herman Kahn best represented the latter position. Parity also posed difficult questions for U.S. extended deterrence.⁷⁰

Twenty years after the end of the Cold War, it is still difficult to assess how much the nuclear balance mattered in the past. Whether it will matter in the future is an even more difficult question to answer.

Today, there is no power that is able to compete with U.S. nuclear forces. Russia may have a larger number of warheads and modernized bombers, but its sea-launched component is in disarray and much of its ICBM force is antiquated.⁷¹ And in any event, the notion of parity is only meaningful in the nuclear domain. Taking a broader view, Russia’s nuclear capability is comprehensively inferior to that of the United States. China is modernizing its nuclear and ballistic missile arsenals, but for all its efforts in

⁶⁸ Harold Brown, *Department of Defense Annual Report, Fiscal Year 1979*, Washington, D.C.: Department of Defense, February 2, 1978, p. 5.

⁶⁹ In his memoirs, Nikita Khrushchev refers with some irony to “what the West likes to call *the balance of power*.” See Nikita Khrushchev, *Khrushchev Remembers*, trans. and ed. Strobe Talbott, New York: Little Brown and Co., 1970, p. 494.

⁷⁰ This point is made in Colin Gray and Keith Payne, “Victory Is Possible,” *Foreign Policy*, No. 39, Summer 1980, p. 14: “In the late 1960s the United States endorsed the concept of strategic parity without thinking through enough what that would mean for the credibility of America’s nuclear umbrella. A condition of parity or essential equivalence is incompatible with extended deterrent duties because of the self deterrence inherent in such a strategic context.”

⁷¹ The intercontinental sea-based ballistic missile Sineva (Skiff in the NATO classification) may be installed on the newest nuclear Borey class submarine in the event of further failures in the Bulava tests. The submarine will need to be adapted. The situation concerning the Bulava missile improved in 2011 as there were some successful tests.

the past ten years, it still has a limited force compared to the United States. Twenty years from now, things may look different, taking into account on the one hand the status of the U.S. nuclear infrastructure, the defense budget cuts, and the difficulty of attracting good minds into a nuclear business that has become unfashionable, and on the other hand the constant modernization of Chinese efforts in the nuclear realm.

Russia and China may have other problems, but both still believe in nuclear weapons. China in particular may take advantage of the U.S. will to reduce the emphasis and numbers of nuclear weapons to get parity. Granted, Washington wants to convince China to abandon this objective, but strategy that would achieve this goal is unknown. Similarly, convincing Russia that it now has essentially common interests and responsibilities with the United States is a fine objective, but it will not be easy to achieve.

Henry Kissinger famously asked at a press conference in Moscow in 1974: "What in the name of God is strategic superiority? What is the significance of it, politically, militarily, operationally, at these levels of numbers? What do we do with it?"⁷² The question might have been misplaced then, as Kissinger himself recognized some years later,⁷³ but it may make sense at a time when Washington seems to consider nuclear weapons as a remnant of the Cold War, while rising and weaker nations find them increasingly relevant.

In any case, for both Russia and China, parity is now clearly defined in much broader terms than nuclear parity. In addition to nuclear holdings, it encompasses at the very least high-tech conventional developments such as Prompt Global Strike, missile defenses, and regional alliances.

Vulnerable Societies, Invulnerable Weapons: A Paradox

During the Cold War, Western leaders came to the conclusion that peace depended on vulnerable societies and invulnerable weapons. Basing one's continued existence on the vulnerability of one's society sounds bizarre, and it is indeed. Nuclear weapons are ideal weapons for aggressors because of their ability to inflict destruction and terror on vulnerable cities on an unimaginable scale. Oppenheimer saw them as weapons "of aggression, of surprise, and of terror."⁷⁴ This characteristic gave an edge to the offense. The most aggressive powers stood to gain from this reality. In 1961, during the Berlin

⁷² Henry Kissinger, *Years of Upheaval*, Boston: Little, Brown and Company, 1982, p. 1175.

⁷³ See Kissinger's Senate hearings on the SALT II treaty, July 31, 1979: "After an exhausting negotiation in July 1974, I gave an answer at a press conference which I have come to regret. . . . My statement reflected fatigue and exasperation, not analysis. . . . If we opt out of the race unilaterally, we will probably be faced eventually with a younger group of Soviet leaders who will figure out what can be done with strategic superiority."

⁷⁴ Quoted in Nagendra Singh and Edward McWhinney, *Nuclear Weapons and Contemporary International Law*, Norwell, Mass.: Kluwer Academic Publishers, 1989, p. 133.

crisis, Khrushchev emphasized the terror of bombs of considerable yield, and Moscow began a series of tests that included a 60-megaton bomb.

The protection of civilians has been a matter of “intense and emotional” debate since the inception of the nuclear age.⁷⁵ The Gaither Committee recommended a fallout shelter program, which was rejected by the Eisenhower administration. Another fallout shelter program was presented by the Kennedy administration in 1961. The advocates of civil defense lost the battle for both financial and ideological reasons. Some strategists like Herman Kahn argued early on (in 1960) in favor of an active defense system effective against airborne and missile threats from third powers such as China, and also against accidentally fired weapons and Soviet retaliatory blows.⁷⁶ He thought defenses were an integral part of credibility: “If the US could not survive a Soviet strike that was sure to follow US nuclear escalation, why would the Soviet leadership believe that the US would ever implement its threat?”⁷⁷ Defenses were therefore supposed to save lives, limit damage, and strengthen deterrence.

However, the opposing school won: Civil defense would drain money from offensive programs cherished by the Air Force and would be seen as provocative. It would also endanger deterrence because (1) it would negate the adversary’s nuclear arsenal, (2) it would suggest that the United States was protecting itself against a retaliatory blow and was therefore considering a first strike, (3) it would for that reason encourage a Soviet first strike, and (4) it would assume that deterrence could fail. Of course it could, even if failure is hard to fit into the framework generated by rationality. It could fail because of risk-acceptant leaders, misperceptions, loss of control, escalating crises, and even “small events” such as those John F. Kennedy feared most in October 1962 (at various junctures in the Cuban missile crisis, the real danger was not the contest of wills but whether the two leaders could keep control of the process they had launched⁷⁸).

The acceptance of the vulnerability paradox by the West is all the more troubling knowing that the Soviets, who were not known for their humanitarian concerns, took measures to protect the population of Moscow against nuclear strikes. In Herman Kahn’s eyes, it meant only one crucial thing: They took nuclear war seriously and were ready for a nuclear conflict. They saw themselves as resilient enough to absorb a first strike. This was an uncomfortable discovery. To consider nuclear war “thinkable” was the best way to convince the Soviets that the United States would not blink. At the end of the 1960s, the situation changed with new technological developments that made

⁷⁵ Brodie and Brodie, 1973, p. 305.

⁷⁶ See Kahn, 1960.

⁷⁷ Kahn, 1960.

⁷⁸ As John F. Kennedy put it then: “There is always some sonofabitch that does not get the word.” See Michael Dobbs, *One Minute to Midnight*, New York: Knopf, 2008, p. 345.

defense systems more effective, and with the Soviets deploying their own system. Then the idea of the ABM Treaty (1972) started to take off.

Active defenses against lesser threats than the Soviet Union were ultimately considered. Kahn recommended them early on against missile or airplane attacks by China, missile or airplane attacks by countries smaller than China, missiles fired accidentally at the United States, the smaller and less coordinated strike that might occur in the second day of the war or after a U.S. first strike, and airplanes dispersing super lethal bacteriological or chemical weapons.⁷⁹

Washington decided eventually that what was forbidden vis-à-vis Russia was permitted vis-à-vis China. In September 1967, Secretary McNamara announced—after having underlined the weaknesses of ABMs—that a thin ABM system called Sentinel would be deployed to protect major U.S. cities against China. The strange logic was not explained. Sentinel was meant to limit societal damage in case of a large Chinese attack. The U.S. missile defense system would in this case reduce the number of casualties by 95 percent at an affordable price. A balance of terror with China was precluded. Later, Nixon abandoned the idea of defending cities as well as protecting the United States against China's attacks. Safeguard, Sentinel's replacement, was directed at the Soviet Union with an entirely new mission: to defend land-based retaliatory missiles. This mission was accepted as meaningful by the opponents of defense: It was protecting weapons, not people. And it was soon abandoned as well.

After the end of the Cold War, ballistic missile proliferation on one hand and new technological developments on the other allowed missile defense to make a remarkable comeback. Old debates resurfaced immediately concerning the arms race, efficiency, and cost. But deployments of new defenses took place nonetheless in the most troubled regions: the Middle East, South Asia, and East Asia. They will probably be deployed eventually in Europe as well, since Russia is unlikely to cooperate on reducing the Iranian ballistic missile threat. Missile defense is meant to reassure allies exposed to ballistic missile proliferation and to convince potential adversaries that they are unlikely to achieve the political and military purposes contemplated with an attack. Missile defense therefore provides a new basis for extended deterrence and for deterrence by denial.⁸⁰

Important questions remain regarding the offense–defense balance in the 21st century. The problem is whether there will be—or even should be—a shift toward defense. One may argue that an offense-dominant world would remain as efficient in the decades to come as, say, the world of the 1950s because of the sheer destructiveness

⁷⁹ See Kahn, 1960, p. 303.

⁸⁰ Concerning the advantage of the offense over the defense, Herman Kahn noted: "In the air and missile age the offense has an intrinsic advantage over the defense only, if at all, because our sensors are not reliable. . . . A breakthrough in this field comparable to the invention of radar in 1935 might well make all forms of air offense incredibly costly." Kahn, 1960, p. 495.

of nuclear weapons. The case can also be made that defenses *supplementing* offensive weapons would ensure a more secure and stable world in an era of ballistic missile proliferation to new actors, a phenomenon largely unknown in the previous century. Defensive weapons may help regulate the *imbalance of terror* we have already entered into and become part of what will remain an imperfect but still necessary deterrence.

Credibility: An Increasingly Relevant Concept

Traditionally, credibility has had two dimensions: capability and resolve. The adversary should be convinced that the capability of the enemy to act is there, making the costs greater than the advantages of attaining his objectives. He should also believe in the resolve of the enemy: Their intentions must be credible. (Assessing an adversary's resolve could involve analyzing their record in similar circumstances, the statements and behavior of their government, and public opinion, domestic and allied.) In September 1944, before the first use of the first atomic bomb, the report of the Jeffries Committee of Manhattan Project scientists concluded:

The most that an independent nucleonic rearmament can achieve is the certainty that a sudden total devastation of New York or Chicago can be answered the next day by an even more extensive devastation of the cities of the aggressor and the hope that the fear of such a devastation will paralyze the aggressor.⁸¹

Was this judgment correct during the Cold War? Herman Kahn underlines that consideration of the retaliatory blow comes into the assessment of credibility from the very outset: "Credibility depends on being willing to accept the other side's retaliatory blow . . . it depends on the harm he can do, not on the harm we can do."⁸²

In a situation where there is parity, nuclear threats may lack credibility. Maybe the Soviets never believed in parity for that reason. And the destruction of New York or Chicago is different from more limited aggression. Would any responsible democratic government dare to use the H bomb as an answer to limited aggression? Credibility may be in danger both in a situation of parity (retaliation) and in one of limited strike (proportionality).

Currently, the second problem appears more relevant than the first, for lack of a peer competitor. A limited nuclear strike with a conventional response would call into question all other commitments, notably those related to allies. The interdependence

⁸¹ Zay Jeffries et al., "The Impact of Nucleonics on International Relations and the Social Order," *Jeffries Report*, November 18, 1944, in Martin J. Sherwin, *A World Destroyed*, Palo Alto, Calif.: Stanford University Press, 2003, p. 317.

⁸² Kahn, 1960, p. 32.

of a country's commitments is a country's reputation for action, the expectation other countries have about its behavior. This is a vital part of a power's credibility.

Launch on Warning: A Dangerous Concept

Responding to a detected attack before the first strike arrives is a fair description of the launch-on-warning concept. Nuclear missiles are used so they will not be destroyed by the opponent's first strike, which is on the way. Planning to launch one's nuclear assets as soon as there is notice of an adversary's first strike is particularly destabilizing. Misperceptions and false interpretations of data could easily lead to accidental nuclear war. But it made sense in the USSR, in a context where the initial phase of the war could determine its outcome.

The launch-on-warning policy was adopted by Moscow in 1967, under Leonid Brezhnev. The Soviets were to strike in the event they detected a strike by the United States. Marshal Nikolay Krylov, then commander of the Strategic Rocket Forces, expressed the doctrine in the following way:

With the presence in the armament of troops of launchers and missiles which are constantly ready for operation, as well as systems for detecting enemy missile launchers and other types of reconnaissance, an aggressor is no longer able suddenly to destroy the missiles forces before their launch on the territory of the country against which the aggression is committed. They will have time during the flight of the missiles of the aggressor to leave their launchers and inflict a retaliatory strike against the enemy.⁸³

In practice, the USSR was more reasonable. A number of false alarms did not lead to any nuclear response. But the point is, they *could* have. There will not always be reasonable people at the command post in all countries concerned. Launch on warning is still one of the most risky concepts, but it is particularly alluring to new nuclear countries where arsenals are small and vulnerable. On the U.S. side, overreliance on detection was always thought to be destabilizing, and launch on warning has not been an explicit part of the doctrine.

Uncertainty: A Concept for Our Time

There is an unavoidable level of uncertainty inherent in strategies of deterrence; as Keith Payne says, "Predicting how a foreign leadership will interpret and respond to threats

⁸³ See Raymond L. Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," *International Security*, Vol. III, No. 1, Summer 1978, p. 129, quoted in Freedman, 2003, p. 253.

is an uncertain business for the most astute observer.”⁸⁴ The question is whether uncertainty strengthens or weakens deterrence. This was hotly debated during the Cold War. The principle behind ambiguity is that deterrence works best if the adversary is confounded by uncertainties in enemy response, which frustrate attack and contingency planning. Thomas Schelling thought uncertainty did in essence strengthen deterrence: The idea is that an adversary uncertain about how their enemy might respond to a certain action will think twice about taking that action. (Uncertainty was thought to be one element of the added value of the French and British nuclear deterrents: a further layer of uncertainty brought about by third parties.) Herman Kahn believed the opposite: that deterrence works best when the opponent fully understands the unavoidable consequences of an attack. Both positions have obvious merit. However, a choice should be made between these mutually exclusive principles.

Thomas Schelling acknowledged the presence of uncertainty in the various dimensions of international relations: “Not everybody is always in his right mind. Not all the frontiers and thresholds are precisely defined, fully reliable, and known to be so beyond the least temptation to test them out, to explore for loopholes, or to take a chance that they might be disconnected this time.”⁸⁵ In *The Great American Gamble*, Keith Payne concurs that strategic decisions are often baffling.⁸⁶ Who could have guessed that Tokyo would be crazy enough to attack America in December 1941? Not Dean Acheson, who said shortly before December 7, 1941: “No rational Japanese could believe an attack on us could result in anything but disaster for his country.”⁸⁷ (Such was the intuition of the emperor as well, but General Hideki Tojo insisted that there was “no alternative but war.”⁸⁸) Why did Napoleon, one of the most impressive generals in history, decide to stay in Moscow in 1812 losing precious time, a decision that would lead him and his army to disaster?

The danger of unpredictable decision making is particularly high under stress, with unintended consequences. The power of ideology should also be taken into account: Fidel Castro urging the Soviets to his own destruction in 1962 for the triumph of socialism over capitalism, for example, or the Soviet conviction that the United States was an unremitting aggressor, one of the causes of significant misperceptions, including during the 1983 Able Archer exercise (or the idea that Washington could be successfully deceived by the Kremlin in 1962).

⁸⁴ Keith Payne, *The Great American Gamble*, Fairfax, Va.: National Institute Press, 2008, p. 20.

⁸⁵ Schelling, 1966, p. 94.

⁸⁶ Payne, 2008.

⁸⁷ Quoted in Scott Sagan, “The Origins of the Pacific War,” in Robert I. Rotberg and Theodore K. Rabb, eds., *The Origin and Prevention of Major Wars*, New York: Cambridge University Press, 1989, p. 336.

⁸⁸ Tony Palomo, “1941: Fateful and Tragic Year,” in *The Defense of Guam*, National Park Service web page, undated.

In Herman Kahn's view, uncertainty can push a gambling opponent in the direction of war. It may also push in the same direction a proud opponent, one refusing to enter into the gamble. What Schelling calls "the threat that leaves something to chance"⁸⁹ assumes that the adversary is not highly motivated and that the possibility of disaster will dissuade him from pushing his luck in the gamble of confrontation. Ambiguity does not deter universally. It may raise doubts about the resolve of the opponent. It may even incite provocation. In particular, clarity may be safer with some potential adversaries. Peter Rodman has observed that with regard to Taiwan, for example, the United States must make "its deterrent . . . as unambiguous as possible to ensure that China does not get the wrong message."⁹⁰

In a world where strategic surprises are expected to become the norm rather than the exception, uncertainty may prove more disturbing for the West than for its potential adversaries—particularly if they are convinced that Western societies are increasingly unwilling to fight. Manipulation of risk, a concept often associated with uncertainty, also appears to be better understood (and practiced) today by North Korean and Iranian leaders than by Western powers.

Game Theory: Unreal

Game theory derives from economic bargaining and has its roots in the economic literature.⁹¹ For some, game theory was the recognizable sign of serious strategists, their ability to formalize situations. For others, it was ignorance of strategy, history, and culture. The leading experts in game theory, following the path of Oskar Morgenstern,⁹² were Thomas Schelling and Anatol Rapoport. They sought strategic rules, reducing strategic problems to a form where tensions, contradictions, and emotions were sidelined. They were aware of the limitations of their tools, but they contributed to the view that the nuclear business was an unreal exercise.⁹³

The human dimension of decision making in extreme situations of tension where the question was whether to launch a nuclear attack, with the necessity of anticipating and suffering the results, was often dismissed as a theoretical approach that was neither scientific (lacking empirical data) nor strategic (lacking any correlation to the

⁸⁹ Thomas Schelling, *The Strategy of Conflict*, Cambridge, Mass.: Harvard University Press, 1980, p. 187.

⁹⁰ Quoted in Demetri Sevastopulo and Andrew Ward, "Clinton Backs 'Ambiguity' on Taiwan Policy," *Financial Times*, August 3, 2007.

⁹¹ See Duncan Luce and Howard Raiffa, *Games and Decisions: Introduction and Critical Survey*, New York: John Wiley & Sons, 1957.

⁹² John von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior*, Princeton, N.J.: Princeton University Press, 1944.

⁹³ To be fair, Thomas Schelling does dedicate important and numerous analyses to history and past events.

real world, real nations, or the real decision-making process). A frequent formula was “the problem will be reduced to one,” which had an air of unreality for practitioners. The main value of game theory as applied to nuclear weapons may be the fact that in a nuclear crisis, any move is followed by a counteraction by the opponent, and so forth, with the objective of avoiding escalation to war. What is less clear, however, is why the moves had to be formalized to be understood, and what relationship this had to actual decision-making processes.

Strategists like Kahn showed little interest in game theory, and the complexity of the contemporary world does not encourage thinkers today to show any more interest than he did. We now believe that we must learn more about regional issues and know specifically who the opponents are in order to make meaningful policy, rather than turn them into abstract “players” in some heuristic game of questionable relevance to the real world.⁹⁴

Limited Nuclear Wars: Triumph of Hope

Poison gas was not used on the battlefield in World War II as it had been in World War I, and its use in the Korean War was limited (many at the time thought it was the prelude to World War III). But awful as they were, both were conventional conflicts. To limit a nuclear war once it started appeared a more difficult task. Such was the view of the U.S. Air Force. Henry Kissinger, who was unconvinced by the military, encapsulated the problem in 1957: “We can hardly be said to possess the capability for limited war either conceptually or physically.”⁹⁵ Kissinger brought a major contribution in thinking about the middle ground between total peace and total war.⁹⁶

All-out surprise attack does not exhaust the range of our perils: although the greatest threat may, in fact, be the least likely danger. Mastery of the challenges of the nuclear age will depend on our ability to combine physical and psychological factors, to develop weapons systems which do not paralyze our will, and to devise strategies which permit us to shift the risks of counteraction to the other side.⁹⁷

⁹⁴ As Hedley Bull commented: “A great deal of argument about military strategy . . . postulates the ‘rational action’ of a kind of ‘strategic Man,’ a man who on further acquaintance reveals himself as a university professor of unusual intellectual subtlety. In my view this kind of formal theorizing is of great value in the discussion of strategic matters when it represents not a prediction of what will happen in the real world, but a deliberate and conscious abstraction of it, which must later be related back again to the world.” Quoted in Freedman, 2003, p. 174.

⁹⁵ Kissinger, 1957, p. 225.

⁹⁶ Actually, the first to develop the concept of limited war as an alternative to total war was Basil Liddell Hart at the beginning of the 1950s. Bernard Brodie adopted this view as soon as he learned that a thermonuclear weapon was about to be tested.

⁹⁷ Kissinger, 1957, p. 60.

The idea that total war was the only possible type of war between the main adversaries may have come from the experience of World War II. But limiting nuclear war was easier said than done, taking into account the effect on cities of even counterforce strikes. In his famous book *On Escalation*, Herman Kahn comes to the conclusion that limited war is not an alternative to total war.⁹⁸ With targets including industrial facilities, air bases, and ports located in or near big cities, even a counterforce strike could amount to an all-out war. And limited war could get out of hand by degrees and lead to an all-out war.

On the Soviet side, Nikita Khrushchev suggested that limited nuclear wars might escalate. The Soviets tended to believe that if a limited nuclear war was to the West's advantage, then it would necessarily be bad for Moscow, and an all-out war was better suited to a centralized system. The Soviets may not have mastered the tactics of limited nuclear war; also, they wanted to emphasize their retaliatory power, and they were frightened by what they understood the American way of using nuclear weapons to be. So the Soviet literature was mostly about all-out war. Henry Kissinger believed this reluctance to consider limited nuclear war was a form of psychological warfare and that diplomacy could serve as a substitute for the Soviet General Staff's lack of imagination. The idea that educating the Soviets was a reasonable endeavor sounds naive (if such a thing could be said of Henry Kissinger).⁹⁹

It could be argued that wars might be more restrained with nuclear weapons because leaders would be more cautious. But this proposition was never tested. As a result, wisdom would counsel nuclear powers to avoid any form of war among themselves, even conventional, as the late Michael Quinlan contended in his work.¹⁰⁰ Limited wars without escalation may look attractive, but the guarantee that they will remain so is limited as well. This may be particularly relevant with countries that are, like China, intellectually familiar with the idea that any dynamic escalation can be controlled.¹⁰¹

Old Wine in New Bottles: Five Samples from the Cold War Cellars

1. No First Use

The concept of no first use, designed to limit the mutual fear of a first strike, was championed by the Soviets, notably under Brezhnev, but has never been adopted by

⁹⁸ Kahn, 1968.

⁹⁹ And it appears patronizing to assert that "Soviet military doctrine does not seem to have reached as yet the third stage of the evolution of strategic thought with respect to nuclear weapons: that of finding subtler uses for the new technology than all out war." Kissinger, 1957, p. 389.

¹⁰⁰ Quinlan, 2009.

¹⁰¹ War games conducted in the United States in recent years have illustrated this crucial point.

the Western camp for two reasons: the need to deter a massive conventional attack in Europe and the impossibility of verifying the commitment. As it turns out, plans discovered in Eastern Germany after the end of the Cold War showed that the Soviets had first-use operational plans calling for the use of nuclear and chemical weapons on the very first day of a conflict with NATO forces.

Today, Moscow has abandoned the no-first-use commitment, but it is still the cornerstone of Beijing's nuclear doctrine. "Never initiate the use of nuclear weapons, whatever the circumstances" is a Chinese mantra. The concept suits Chinese interests because Beijing lacks second-strike capability and still holds a rather limited nuclear force. As this is changing, with China's expanding submarine and sea-launched capabilities (its Han class submarines will be equipped with JL-2 missiles) and quantitatively expanding arsenal, Beijing's no-first-use claim may linger as a mere diplomatic asset (exactly what it was for the Soviet Union during the Cold War).

A specific question is what the adequate response to a chemical or biological attack would be, at a time when chemical and biological offensive programs are no longer maintained by Western powers. This question gave rise to the concept of no first use of WMD, narrowing the scope of the commitment. In the case of the 2010 NPR, it seems that the biological threat is the main reason Washington refuses to adopt no-first-use policy.

The question has a specific relevance in the Middle East context, where a number of states continue to develop chemical and biological capabilities. Israel has produced a number of studies related to nuclear deterrence vis-à-vis chemical or biological attacks. Poorly executed chemical attacks pose a particularly tricky problem. It is worth recalling that during Operation Desert Storm, Iraq was deterred from the large-scale deployment of WMDs (the major objective of deterrence) but not from launching Scud missiles at Israel, a risky move on all counts.

India is also thought to be harboring a nuclear option against massive chemical or biological attacks.

2. Arms Control

During the Cold War, the way the Soviets used arms control was often debated. Some thought the agreements were of little use (Harold Brown is famous for having said in 1979, "When we build, they build, when we cut, they build"¹⁰²) or even dangerous: "If the quantity of weapons decreases a premium will be placed on engineering them to achieve maximum destructiveness and to use them on the largest targets. The horrors of nuclear war are not likely to be avoided by a reduction of nuclear armaments."¹⁰³ Others argued that it helped the adversaries better understand one another and limit

¹⁰² Quoted in Gregory Trevorton and Wilhelm Agrell, *National Intelligence Systems*, Cambridge, Mass.: Cambridge University Press, 2009, p. 2.

¹⁰³ Kissinger, 1957, p. 211.

the most destabilizing forces. At a time when the Soviets believed they could not compete with the United States, they may have chosen to try to cap American capabilities with negotiations. This does not mean that arms control played no role in keeping the Cold War cold.

Most experts, while agreeing that careless agreements were dangerous, understood arms control for what it was: a contribution to stability that helped the adversaries maintain contact, encouraged them to learn about one another's capabilities, kept a constituency interested in limiting the bipolar arms race, and fostered the abandonment of the most destabilizing weapon systems (those likely to favor a "surprise attack").

The major emphasis, then, turned out to be inspections: Mutual inspection schemes were supposed to build confidence and provide strategic warning. The prevention of surprise attack was the major objective. Bernard Brodie expressed it simply: "The kind of measures in which we ought to be especially interested are those which could seriously reduce on all sides the chances of achieving complete surprise in a strategic attack."¹⁰⁴ More generally, arms control was thought of in terms of its propensity to increase stability in crisis situations and to reduce the risks of fatal human errors or miscalculations.¹⁰⁵

The history of arms control provides an image of the Western obsession with the USSR that prevented any wider view of the world. A good example is provided by an article written in 1979 by Colin Gray, where he asserts that "1979 is almost certain to see the most inventive debate over strategic postural and doctrinal issues since the days of the misprojected missile gap in 1959–1960."¹⁰⁶ What was so important in 1979? The Iranian revolution? The Egypt-Israel Peace Treaty? Formal diplomatic relations between the United States and China? Saddam Hussein's accession to power? The attack on Mecca by radicals? The end of the 20-year Sino-Russian Treaty? The Soviets in Afghanistan? The north-south Yemen war? The Vietnamese entering Phnom Pehn and putting an end to the Khmer Rouge's genocide in Cambodia? The Sino-Vietnamese war that resulted? The Sverdlovsk biological accident? The answer: none of the above. The bipolar confrontation was so overwhelming in Western minds that the underwhelming answer is . . . SALT II, a treaty that was never ratified (it was blocked by Congress after five years of negotiations) because of "the state of the balance, predictions of trends, the relevance of strategic forces to superpower diplomacy, developments in high technology."¹⁰⁷

What relevance does this past history have today? Arms control remains a tool for stability, provided that adequate preparation for negotiations is made, that detection

¹⁰⁴ Brodie, 1958, p. 58.

¹⁰⁵ See Kahn, 1960, p. 238, and Kahn, 1968, p. 261.

¹⁰⁶ Colin Gray, "Nuclear Strategy: The Case for a Theory of Victory," *International Security*, Vol. 4, No. 1, Summer 1979.

¹⁰⁷ Gray, 1979.

of cheating is addressed, that response to violations is carried out, that careless agreements are avoided as dangerous, and that the negotiators are guided by *strategy* rather than launching and pursuing a “process” for its own sake. Concerning U.S.-Russian negotiations, the slowing down—or even the cessation—of the rate of nuclear reductions is the most likely scenario as of the end of 2011.

3. Surprise Attacks

Nuclear weapons brought something new to the old fear of surprise attack because they were such powerful weapons. Important thinkers like Bernard Brodie believed that the element of surprise was less important than generally assumed because “if retaliation has to be accepted, no victory is worth it.”¹⁰⁸ Fear of surprise attack was real in both camps during the Cold War, though, even after secure retaliatory capabilities were acquired by both the United States and the Soviet Union. And the main purpose of a surprise attack was precisely to destroy the means of the adversary to exert retaliation.

The fear was reciprocal but rooted in different premises. On the Western side, the Soviets were thought to be seeking superiority and building defenses *because* they were preparing for nuclear war. On the Soviet side, the capitalist alliance was thought to be intrinsically aggressive, whatever defensive plans the West may have had. The Warsaw Pact documents described how the war would be initiated by the West:

Contrary to military common sense, NATO would presumably decide to attack despite its own estimate that it was inferior in both manpower and firepower by the ratio of 3:2. Moreover, the preparations for its “surprise attack” would be so poorly concealed as to give the enemy ample warning, thus allowing the Warsaw Pact forces to meet the attack fully combat ready.¹⁰⁹

The contradictions and the implausibility could overcome Marxist Leninist ideology. All the improvement introduced in the American doctrine in the name of stability and mutual deterrence was dismissed as deceptive.¹¹⁰ The mutual fear of surprise attack was destined to reach dramatic levels in a crisis, when the calculations of the two sides could change under pressure: “A process of interacting expectations with additional motive for attack being produced by successive cycles of ‘He thinks we think he thinks we think . . . he thinks we think he will attack; so he thinks we shall; so he will; so we must.’”¹¹¹ This escalating psychological process is particularly relevant

¹⁰⁸ Quoted in Freedman, 2003.

¹⁰⁹ See Mastny, 2005, p. 23.

¹¹⁰ As a way of convincing the Soviets that America was not preparing a surprise attack, Leo Szilard suggested conferring immunity on foreign spies: They were thought to be the only means by which Moscow could obtain persuasive evidence that the United States was not making preparations for a surprise attack. See Schelling, 1980, p. 148.

¹¹¹ Schelling, 1980, p. 207.

between countries unable to minimize the risks of surprise attacks through dialogue, early warning, and arms control dealing with the most destabilizing capabilities.

A large number of predictions have proven to be too pessimistic in the nuclear realm, but as far as surprise attack is concerned, it is difficult not to be impressed by two early thoughts and their possible relevance for our time. The first is from Henry Stimson, as early as April 1945. He predicted that “the future may see a time when such a weapon may be constructed in secret and used suddenly and effectively.”¹¹² The second thought was expressed by John Foster Dulles in January 1954: “We live in a world where emergencies are always possible, and our survival may depend upon our capacity to meet emergencies.”¹¹³ Finally, there is an additional concern in the contemporary world that the Cold War world did not have to contemplate: the possibility of an anonymous strike. In the event of such an attack, all nuclear weapon states should be entirely transparent. But would they be? Experience suggests that transparency may be a difficult goal to attain. As Machiavelli said, “Nothing is easier to effect than what the enemy thinks you will never attempt to do.”¹¹⁴

4. Rationality in Deterrence

A frequent criticism of the classical nuclear deterrence literature is the excessive rationality of the reasoning (which is extravagant even if related to experience), particularly at the beginning of the nuclear era. Comforting theory was preferred to inconvenient history. These theories were not tested in real war, and nuclear crises were not studied systematically by most thinkers. Such “complications” were often swatted away to get a more elegant doctrine. But the world is not ruled by strategic rationalists or by people interested in elegance, so it is likely that all the sophistication introduced over the years to produce a more aesthetically refined deterrence doctrine was not only confusing but unnecessary: Politicians may be deterred solely by some undifferentiated prospect of nuclear war. This has been the conviction of France, for example, since its acquisition of nuclear weapons in 1960.

To be fair, even the main proponents of rational strategy recognized that war may not be the most rational situation and that rationality is not always a plus in war.

Many of the attributes of rationality . . . are strategic disabilities in certain conflict situations. . . . It is not true . . . that in the face of a threat, it is invariably an advantage to be rational. . . . It is not invariably an advantage, in the face of a threat, to

¹¹² Henry L. Stimson, “The Atomic Bomb and Peace with Russia,” *Bulletin of Atomic Scientists*, Vol. 4, No. 8, August 1948, p. 237.

¹¹³ John Foster Dulles, “The Evolution of Foreign Policy,” speech before the Council on Foreign Relations, New York, Department of State Press Release No. 81, January 12, 1954.

¹¹⁴ Niccolo Machiavelli, *The Prince*.

have a communication system in good order, to have complete information, or to be in full command of one's actions or of one's own assets.¹¹⁵

However, rationality was often described in narrow terms, without any reference to cultures other than the American culture. The Soviets were not understood. Nor were the Europeans (few apart from Kissinger made any significant reference to them). The tendency to think about deterrence in a peacetime situation was another limitation, particularly well understood by Herman Kahn:

It is difficult for us in the West, with our abhorrence of force and the widely prevalent view of automatic mutual homicide, to believe that a situation could occur in which a perfectly sane but calculating, decisive or ruthless decision maker could rationally decide that he is better off going to war than not going to war. In particular, we do not believe that any such calculation could make full allowance for uncertainties and still be correct. Yet, sober studies indicate that this widely prevalent belief could be wrong.¹¹⁶

5. Elimination

In 1997, Paul Nitze, “the man who brought us the Cold War,” as his obituary would later characterize him,¹¹⁷ wrote a famous piece in the *Washington Quarterly*. The title of the article was surprising coming from someone who contributed to NSC68, the Gaither Report, and the Committee on the Present Danger, all major documents of the Cold War. The title was, “Is It Time to Junk Our Nukes?”¹¹⁸ Nitze’s main idea was that the strategic nuclear deterrent should be converted to conventional weapons. He was joined in 2007 by Henry Kissinger, George Schultz, and William Perry, all advocating the abolition of nuclear weapons. This goal gradually became at least a rhetorical endeavor: In a major speech in Prague on April 5, 2009, President Obama expressed “America’s commitment to seek the peace and security of a world without nuclear weapons.”¹¹⁹

The reasons advanced in favor of elimination are many. First, the world has been lucky for some decades, but despite the best efforts of leaders, nuclear war (due to accident, technical malfunction, etc.) cannot be avoided for perpetuity; second, maintaining nuclear arsenals encourages proliferation; third, deterrence rests on the threat to kill innocent civilians; and, last but not least, nuclear weapons contribute more to insecurity than to security. Those are potent arguments.

¹¹⁵ Schelling, 1980, p. 18.

¹¹⁶ Kahn, 1960, p. 236.

¹¹⁷ Fred Kaplan, “Paul Nitze: The Man Who Brought Us the Cold War,” *Slate.com*, October 21, 2004.

¹¹⁸ Paul Nitze, “Is It Time to Junk Our Nukes?” *Washington Quarterly*, Vol. 20, No. 3, Summer 1997.

¹¹⁹ Obama, 2009.

However, there is as much sophistry in this argumentation as there is in the deterrence theory that is currently under attack. To start with, having nuclear weapons does not mean using them, as the long period between 1945 and 2011 shows, and threatening to use nuclear weapons ought not to carry the same moral stigma as actually using them. After all, a threat causes no death and may cause an aggressor to think twice; without the threat of use, actual use would be much more likely. Eliminating nuclear weapons would not improve nonproliferation policy, but it would give countries like North Korea and Iran a dangerous blackmailing power.

Political hostility is not induced by the unease created by nuclear weapons, but only the alleviation of political hostility could allow nuclear arsenals to be dismantled. Finally, it is far from clear that a world without nuclear weapons would be more peaceful. Two world wars were started without nuclear weapons and they were invented to end the second of them, after 60 million people had died.

With the advent of nuclear weapons, the belief was not that all wars had become unthinkable but that future wars would be less unrestrained. Those proposing elimination should explain *why* wars would be less unrestrained without nuclear weapons. They should address the question of Chinese and Russian nuclear forces, both countries having increased the salience of nuclear weapons, China as a rising power and Russia as a fading one. They should recognize that hiding nuclear stocks would be more difficult for democracies than for autocracies and that, even if current stocks were genuinely eliminated, new stocks could be produced during the course of a conflict. Finally, cities would have to be targeted again at some point in the reduction process, due to a lack of weapons dedicated to counterforce.

As a result, despite opposition to elimination and arms control such as that expressed by Alva Myrdal,¹²⁰ arms control is the only sensible way of dealing with meaningful and verifiable reductions. And as a matter of fact, for all the rhetoric on elimination, this is most probably the path Washington will follow. The 2010 NPR remained close to the conservative conclusions of the Perry-Schlesinger Strategic Posture Commission. There will be no unilateral disarmament, the U.S. deterrent will remain “safe, secure, and effective” as long as nuclear weapons remain, and extended deterrence will be strengthened.

Contemporary Nightmares

Escalation

What Lawrence Freedman calls “the growth process in warfare,”¹²¹ escalation refers to any type of conflict, where adversaries typically strive to gain a comparative advan-

¹²⁰ “I wish it were not too late to start a boycott against the use of ‘arms control’ as an overall term. It is nothing but a euphemism serving regrettably to lead thinking and action towards the acceptance as ‘arms control measures’ of compromises with scant or nil disarmament effect.” Quoted in Freedman, 2003, p. 187.

¹²¹ Freedman, 2003, p. 198.

tage. It can be an involuntary process, war being notorious for its ability to acquire a momentum of its own. In the nuclear literature, escalation management is described either as an attempt to control different stages of the conflict (i.e., keeping a war conventional or limiting a nuclear one) or as a set of “rungs” with different options at each level. Herman Kahn’s famous book *On Escalation* explores the second avenue (though with his 44 rungs—why 44?—and with nuclear use at rung 15, it is difficult to see its operational value).¹²² The terms *explosion*, *expansion*, and *eruption* are frequently used in conjunction with escalation; all of these terms are confusing.

During the Cuban missile crisis, there were two different instances of escalation, on October 24 and on October 27. The first was the result of a conscious decision by President Kennedy to order a naval blockade; the second was the result of a series of events. During the second peak, a nuclear war was almost launched on more than one occasion.

The main problem today comes from the existence of unrestrained adversaries pursuing absolute goals. A deadly escalation process could be ignited and would be difficult to stop once started. Under such circumstances a case of escalation might well lead to a different outcome than was seen in the two cases just mentioned.¹²³

Accidental War

It has always been particularly dangerous in a nuclear context to appear prone to accidents or miscalculations. Kahn asked in 1960, “Who wants to live . . . in the same world with a hostile strategic force that might inadvertently start a war? Most people are not even willing to live with a friendly strategic force that may not be reliably controlled.”¹²⁴ This is the world we live in today. With dysfunctional early warning systems, irreconcilable differences, and proliferating centers of decision, the risk of accidental nuclear war is higher today than it was during the Cold War. There are more nuclear powers in the 21st century, the discipline imposed on them by the Cold War is gone, and the new leaders are more similar to Fidel Castro than to the Soviets. Keith Payne warns against the rationale that “because deterrence ‘worked’ against the massive Soviet nuclear threat, it should easily work against the more limited threats from regional challengers.”¹²⁵ This does not mean that deterrence is an old-fashioned concept but that it does need some rethinking (see Chapter Two).

¹²² Kahn, 1968.

¹²³ In addition, China may have a very different view on escalation than the USSR did. See Forrest E. Morgan, Karl P. Mueller, Evan S. Medeiros, Kevin L. Pollpeter, and Roger Cliff, *Dangerous Thresholds: Managing Escalation in the 21st Century*, Santa Monica, Calif.: RAND Corporation, MG-614-AF, 2008, pp. 47–81.

¹²⁴ Kahn, 1960, p. 159.

¹²⁵ Keith Payne, *The Fallacies of Cold War Deterrence and a New Direction*, Lexington: University Press of Kentucky, 2001, p. 82.

Nuclear Weapons in the Hands of Nonstate Actors

Nonstate actors may not necessarily be suicidal adversaries but actors waging asymmetrical warfare, which can be manipulated by intelligence agencies. This is how World War I began. In 1914 Austria demanded access to Serbian territory to deal with the terrorist organization to which the assassin of Franz Ferdinand belonged (the Black Hand; it was later determined that the head of Serbian military intelligence was a leader of this secret terrorist organization). Serbia rejected the demand. War between Austria and Serbia resulted, and the obligations of alliances turned it into world war.

Pakistan today may offer a parallel with Serbia. First, the need to reform its intelligence agencies is commonly recognized, but nobody seems able to implement this reform:

Over the years the institutions have developed the peculiar habit of creating enemies for their enemies and then dividing them in order to rule them. Be it the jihadi or sectarian groups or the MQM, the agencies have created a series of Frankensteins whose powers they have had to limit at times by pitting them against each other without trying to eliminate them, but simply making sure that they would remain compliant enough for whatever task they were assigned. In the process, the ISI has created a culture of violence that is likely to be a lasting legacy for the country.¹²⁶

As long as Pakistan's army and Inter-Services Intelligence (ISI) tolerate jihadists on Pakistan's territory, threats of war will continue to grow, notably in India. Second, even though Pakistan's military is in control of its nuclear weapons, there are worries on this front as well, since the widely recognized risk of first use pretends to answer Islamabad's conventional inferiority to India. And third, the possibility of an incident similar to the 2008 terrorist attacks in Mumbai leading to another conflict can hardly be discounted, even though India behaves with remarkable moderation.

Adversaries Bent on Gambling

For some leaders, the societal damage inflicted by nuclear weapons is not unthinkable. In the past, at least two spoke openly about it: Mao and Castro. Mao made a number of public statements reflecting a disregard for Chinese casualties. His attitude seemed to be that hundreds of millions of Chinese lives would not be a great loss. Interestingly, China was identified by Herman Kahn as a nation of future concern as early as 1960:

A number of powers which, unlike the Soviet Union and the United States, may not be so cautious in outlook, will be getting much richer and technically more

¹²⁶ Frédéric Grare, *Reforming the Intelligence Agencies in Pakistan's Transitional Democracy*, Washington, D.C.: Carnegie Endowment for International Peace, 2009.

competent and may yet retain their non status quo outlook. For example, a nation may be wealthy and technically competent enough to have an advanced military technology and yet desperate enough to gamble all. Or some of the underdeveloped nations may become rich in the sense of gross national product, but have such a low per capita income or other social anomaly that they retain attitudes more appropriate to a desperate claimant of world's resources than a responsible "bourgeois" member of international society. The outstanding possibility in the next decade or two is China.¹²⁷

China may be as bourgeois as anyone when it comes to nuclear doctrine, but the discrepancy between this reassuring aspect and China's actual plans and actions may be as significant as the one that existed in the Soviet Union during the Cold War. Regarding a much less significant power, Iran falling into the hands of an increasingly unpredictable military clique is one of the main reasons Tehran should be prevented from acquiring nuclear weapons. And finally, the most dangerous adversary may now be al Qaeda if nuclear weapons fall into its hands, because the barriers preventing use may be the flimsiest (if they exist at all), but there is little evidence so far that the network has made progress in the direction of acquisition.

Miscalculation and Misperception

The transmission of signals between contending camps is always difficult. In the case of nuclear crises, strategic communication between adversaries is simply crucial. There are numerous examples of miscommunication in past nuclear crises. In 1962, for example, Washington conveyed a series of signals to Moscow that should have been sent by Moscow to Soviet submarines but were not actually sent until some days later—only for the information to be flatly ignored. In the contemporary world, the potential for bad communication or even lack of communication should be taken into account, and new problems must be factored in as well, including cyberattacks on command and control systems.

A world of deception might ensue from the rise of China, given the importance of this concept in the Chinese defense doctrine. Mobility and concealment are key to their nuclear development: Knowing the number of missiles will avail their enemies nothing if they do not know the location of their targets. Only maintaining fine-toothed-comb surveillance of all the land areas and the vast oceans, which is pretty impractical, might solve the problem. Some may argue that both deception and concealment give Beijing a sense of confidence that enhances their overall stability, but this is hardly the view of China's neighbors, perplexed by the continuous lack of transparency concerning both current holdings and future intentions. This is likely to increase the risk of misperception and miscalculation in the future.

¹²⁷ Kahn, 1960, p. 151.

Blackmail

Daniel Ellsberg wrote the following in *The Theory and Practice of Blackmail*:

Like it or not, the language of threat and ultimatum is today . . . the language of diplomacy. It is, for many, an unfamiliar discourse . . . a political system in which some are making threats and others are ignoring them. . . . The ability to coerce is a form of power: perhaps the most important form underlying calculations of the “balance of power.”¹²⁸

The threat to compel or to punish with blunt coercion may be the peacetime tool of diplomacy, but this kind of diplomacy is not fashionable. Situations in which a single determined threatener confronts a relatively passive subject might become more common. A blackmailer’s expectations and preferences may seem highly unreasonable, but a good deal of insane behavior may be rational if blackmailers calculate risks, take them, and win. Blackmailers can go to the brink of war, and this fact has an important bearing on the risks of deterrence.

¹²⁸ Ellsberg, 1968, p. 1.

Lessons from Crises

The light which experience gives us is a lantern on the stern, which shines only on the waves behind us.

—Samuel Taylor Coleridge¹

The role of the nuclear factor in international crises since 1946 is all too commonly underestimated, even among the community of specialists. A reexamination of the period since World War II made possible by many declassified documents, especially from the United States, shows just how mistaken that perception is. Tentative steps—sometimes cunning, sometimes blundering, now subtle and then blustering—to translate nuclear capabilities into effective deterrence, compellence, or blackmail are in fact present in a variety of crises that hold a series of lessons for international security in the 21st century.

Granted, nuclear deterrence does not operate only when crises occur. It does reinforce caution and moderation even in peacetime. The interest in crises, though, stems from the fact that they *test* deterrence in a situation of tension, since they can be described as twilight regions between peace and war,² with stakes of such magnitude in nuclear matters that mistakes in this twilight can be devastating. The aim during a crisis is to prevent not only war but also significant political losses. Both are failures of deterrence, but while the first constitutes the “unthinkable” that must be prevented at (almost) any cost, the second has the ability to modify the strategic balance in ways that could lead to crises in the future that are more damaging than the previous ones if credibility has been badly damaged.

¹ *Specimens of the Table Talk of the Late Samuel Taylor Coleridge*, London: Harper & Brothers, 1835, p. 11.

² See President Eisenhower’s closing comments in a press conference on March 4, 1959: “We are living in sort of a half world in so many things. We are not fighting a war, we are not killing each other, we are not going to the ultimate horror. On the other side of the picture, we are not living the kind of normal, what we’d like to call a normal life of thinking more of our own affairs, of thinking of the education and happiness of our children, and all that sort of thing that should occupy our minds.” Dwight D. Eisenhower, “The President’s News Conference of March 4, 1959,” *Public Papers of the Presidents of the United States: Dwight D. Eisenhower, 1959; Containing the Public Messages, Speeches, and Statements of the President, January 1 to December 31, 1959*, Washington, D.C.: Office of the Federal Register, 1960, p. 236.

During the Cold War, behavior in the course of crises varied considerably. Some politicians tried to instill cautionary uncertainty in the minds of their adversaries while operating under the same uncertainty themselves (e.g., Truman and Nixon). Others made rather blatant threats (e.g., Eisenhower and Kennedy). In all instances, politicians never followed a script or even prescriptions from strategic experts, and there is little evidence that lessons drawn from crises played a role in the development of the nuclear doctrine. Few references to crises (with the notable exception of the Cuban missile crisis³) are made in the most important documents and books on nuclear weapons written by major American nuclear strategists.⁴ This may be because decisions made in emergency situations “do not make good permanent policies.”⁵ It may also be because nuclear doctrine was developed in a rather abstract way (as Raymond Aron has contended all along).

However, almost all past crises contain interesting lessons. For example, once one crisis had concluded, the following confrontation was influenced by its outcome; the Cuban missile crisis, for example, is directly linked to the 1961 Berlin crisis, an attempt by Moscow to restore balance between the two superpowers.⁶ Some crises demonstrated how events could unravel even though leaders had agreed to contain them (e.g., Black Saturday).

Crises during the Cold War also showed that, if provoked, the United States had the capability to increase its military resources very rapidly: In June 1950, the debate concerning the U.S. defense budget centered on whether it should be \$14 billion, \$15 billion, or \$16 billion. Then came North Korea’s invasion of South Korea, and Congress authorized \$60 billion.

The U.S. domestic scene played an important role in at least one nuclear crisis, in 1973 when Richard Nixon was embroiled in the Watergate scandal. The President’s need to look tough with the Soviet Union led him to overdramatize the crisis at a time when it was not that serious. The Soviets were only asking for a joint implementation of a cease-fire that had been broken by Israel.

Finally, there is little evidence of what leaders in Moscow or Beijing were thinking during the nuclear crises (with the principal exception of the Cuban missile crisis, about which substantial information has been gathered from Moscow and Cuba since the end of the Cold War). But there are indications that the Chinese used the crises over Quemoy and Matsu to get Soviet cooperation on their nuclear military program. It also appears that the 1969 Chinese-Soviet border clashes encouraged China to decide on a rapprochement with Washington.

³ See, for example, Albert and Roberta Wohlstetter, *Controlling the Risks in Cuba*, Adelphi Paper No. 17, London: Institute for Strategic Studies, April 1965.

⁴ Some important references to crises can nevertheless be found regarding Korea and Berlin; see, for example, Kahn, 1960.

⁵ Dulles, 1954.

⁶ The Soviets knew by then that Washington had discovered that the missile gap favored the United States.

Preliminary Crises

Two brief crises with some reported nuclear element—as the following sections show, they can hardly be called nuclear crises—took place in 1946, before the Soviet Union had nuclear weapons. In February of that year, Stalin made a famous speech in which he asserted that “world capitalism proceeds through crisis and catastrophic wars,”⁷ an assertion that was interpreted as a threat. A month later, Winston Churchill made his equally famous speech concerning the shadow that had fallen on Eastern Europe, which was now cut off from the free world by an iron curtain. The context was tense.

The first crisis was related to the Soviet refusal to honor its commitment to leave Iran after the end of World War II; the only reason to include it in this discussion is a statement made by President Truman himself that he threatened Moscow with an ultimatum on this occasion. The second crisis was related to a Greek pro-communist movement, ELAS, which was receiving help from Yugoslavia and which was being fought by U.S. forces. The second crisis (more so than the first one, since Truman’s ultimatum to the Soviets is not documented) shows how easily nuclear threats could be issued at the time.

1946: Azerbaijan

In October 1945, the Democratic Party of Azerbaijan was formed in northern Iran, supported by the Soviet army, which had occupied the area since 1941. By 1945, the group had established an autonomous government in Tabriz, and the Soviet protection prompted fears in Tehran that Moscow intended to separate the province from Iran and unite it with the new neighboring Soviet Socialist Republic of Azerbaijan. Those fears intensified when Soviet troops declined to set a date for their withdrawal (a position incompatible with the Tripartite Treaty of Alliance of 1942, which stipulated that all foreign troops were to be withdrawn from Iran within six months of the end of World War II). After leaving office, Harry Truman claimed several times that he had threatened Moscow with an ultimatum on this occasion:

Truman is reported to have said that the way he caused the Soviet Union to withdraw her forces from Iran was to “summon” the Soviet Ambassador to the White House and tell him that unless Soviet troops were evacuated from Iran within 48 hours, the United States would use the atomic bomb. Truman is quoted as saying that the Soviet Union withdrew in 24 hours.⁸

However, the reason for the eventual withdrawal of Soviet troops remains unclear. On March 21, 1946, Truman declared at a press conference that he would meet with Soviet Deputy Foreign Minister Andrei Gromyko at 11 a.m. that day, but there is no

⁷ Joseph Stalin, speech during the Supreme Soviet elections, published by *Pravda*, February 10, 1946.

⁸ See Barry Blechman and Douglas M. Hart, “Afghanistan and the 1946 Iran Analogy,” *Survival*, Vol. 22, No. 6, November/December 1980.

record of this meeting. The U.N. Security Council was seized of the matter, but this was a moral pressure that Moscow may not have considered serious enough. Not only did the Iranian prime minister enter into negotiations with Moscow, proposing to withdraw the complaint from the U.N. if Soviet troops departed, but an oil deal was also discussed. This deal, however, was never approved by the Iranian parliament. The crisis ended soon with the departure of Soviet troops from northern Iran. The main reason for the decision in Moscow may have been to concentrate forces and purpose in Eastern Europe, leaving aside what can be called peripheral irritants.⁹

1946: Yugoslavia

In November 1946, an American military aircraft flying from a base in Germany to Greece to fight the pro-communist ELAS forces was downed over Yugoslavia by Josip Broz Tito's fighter planes (five American airmen were shot down). Five B-29s were subsequently flown across a section of Yugoslavia as an apparent nuclear threat, and Yugoslav airspace was soon reopened to the U.S. Air Force. The crisis lasted one day. The nuclear threat, even if indirect, looks reckless under the circumstances. American core interests were not at stake. What would have happened if a B-29 had been downed by Belgrade? Nuclear retaliation would have been unthinkable and would have brought worldwide condemnation. It is unknown whether the aircraft were in fact loaded with nuclear weapons, but, the B-29 having become famous after Hiroshima and Nagasaki, the question appears irrelevant: Belgrade could assume that nuclear weapons were on board.¹⁰

Crises over Berlin

1948: Berlin Blockade

The Berlin Blockade took place from June 24, 1948, to May 11, 1949, and it was the first serious opportunity for the Cold War to turn hot. At the time, the Soviets were progressing in Eastern Europe.¹¹ The Soviet Union blocked the three Western powers' railway and road access to the sector of Berlin under its control (there had never been a formal agreement guaranteeing rail and road access to Berlin through the Soviet zone, Berlin being located 100 miles inside the Soviet occupation zone). The most

⁹ Such is the view expressed by Barry Blechman and Douglas Hart: "While tightening his grip on the area most vital to Soviet interests, Stalin sought to allay Western fears and avoid Western reaction by stepping back from claims in less important regions." Blechman and Hart, 1980.

¹⁰ According to General Lauris Norstad's testimony in 1966, U.S. nuclear weapons were first introduced to Europe under NATO auspices in 1952. But whether the five B-29s were nuclear capable or not, they were meant to be seen as nuclear capable; thus, they constituted at least an indirect nuclear threat, particularly only two years after Hiroshima and Nagasaki.

¹¹ The Czech Communist coup took place in February 1948.

immediate aim of the blockade was to give the USSR control over the entire city, but the larger objective was to get Western concessions on “the German question” and, as soon as the Western Alliance was created, to prevent the Federal Republic of Germany (West Germany) from joining—or, later, after West Germany *had* joined NATO, to convince West Germans that the decision would be costly. The American, British, and French response was the Berlin Airlift (13,000 tons of food was delivered daily in an operation lasting almost a year). There was no explicit nuclear threat, but by the end of July 1948 there were three B-29 groups in Europe,¹² and tacit nuclear pressure reportedly helped to resolve the crisis. The threat was indirect and uncertain,¹³ as President Truman wanted it to be: “We would have to deal with the situation as it develops.” He also said he did not want “to have some dashing lieutenant colonel decide when would be the proper time to drop one.”¹⁴ In a year’s time, on the same issue but this time over Korea, it would not be a dashing lieutenant colonel Truman had to deal with but a gruff general, and Truman would reassert his authority, this time for real.

1958–1959: The Status of Berlin

In 1948, when the United States still had a nuclear monopoly, President Truman agonized over exploiting even the shadow of nuclear blackmail toward Moscow (which calls into question his assertion about the nuclear threat during the much less significant Azerbaijan crisis in 1946). Ten years later, Eisenhower did not. In 1955, West Germany joined NATO with the prospect of conditional access to U.S. theater nuclear weapons. In April 1957, a note from Khrushchev to Bonn threatened to turn West Germany “into a nuclear graveyard.”¹⁵ In 1958, Moscow announced its intention to conclude a separate treaty with East Germany disregarding the Four-Power rights of World War II occupiers in Berlin. On December 11, Eisenhower declared: “Khrushchev should know that when we decide to act our whole stack will be in the pot.”¹⁶ The President explicitly denied any hope of restricting a war in Europe to conventional combat. He argued that it was necessary to rely on deterrence and that the Soviets were bluffing and would back down in the face of Western resolve. Shortly before the end of the crisis, Averell Harriman met with Nikita Khrushchev. When the Soviet leader threatened action against Berlin, Harriman laughed, and Khrushchev said to him, “What

¹² President Truman agreed to deploy three bomb groups of B-29 Superfortresses to England, along with the personnel to support them. From then on, the American presence developed with speed in the East Anglian air bases.

¹³ It now appears that the bombers were conventionally equipped, but does that make any difference? They were meant to be seen as nuclear equipped, and as such they played a role in the crisis.

¹⁴ Quoted in James Forrestal, *The Forrestal Diaries*, Walter Millis, ed., New York: Viking Press, 1951.

¹⁵ Betts, 1987, p. 84.

¹⁶ Quoted in Günter Bischof and Stephen E. Ambrose, eds., *Eisenhower: A Centenary Assessment*, Baton Rouge: Louisiana State University Press, 1995, p. 220.

are you laughing about?” Harriman replied, “Well, Mr. Chairman, that would mean nuclear war and you don’t want that.” Khrushchev looked at him and said, “You are right.”¹⁷ The deadline passed and the issue remained unsettled. When the Soviets tried the same game with the next U.S. President in 1961–1962, they lost again, even though the new Democratic administration was ready to find a diplomatic compromise.

1961: The Berlin Wall

In June 1961, Khrushchev and Kennedy met in Vienna, and the Soviet leader tried to intimidate the young President. He handed Kennedy an aide-mémoire on Berlin restating the points made to Eisenhower in November 1958 and demanding the neutralization of Berlin within six months. Extended deterrence was at stake. Kennedy decided that if Khrushchev was serious, “the prospects for nuclear war were now very real.”¹⁸ Khrushchev for his part did not believe that “Kennedy would start a nuclear war over traffic controls on the autobahn.” He also said that the Western powers’ contention that they would fight to preserve the freedom of the city was “a fairy tale. There are 2,000,000 people living in West Berlin. But if a war is unleashed, hundreds of millions might perish. What sensible person would find such arguments of the imperialists convincing?” In July, he added: “It is best for those who are thinking of war not to imagine that distance will save them,” implying that Moscow now had the means to reach the American homeland (ICBMs). In addition, Khrushchev emphasized the Soviet threat to Western European nations; he highlighted the vulnerability of U.S. bases in Europe and the large Soviet force of medium-range aircraft and missiles.

Kennedy had come into office as a critic of massive retaliation and even wanted “to put the nuclear genie back into the bottle,”¹⁹ but this was hardly the time to do it, and he did not waver on the U.S. commitment to the NATO allies. This was also the first operational exercise on flexible response led by Paul Nitze. Civilian analysts believed that a counterforce strike was possible, but on what targets? In August 1961, when the East Germans began to build the Berlin Wall, Thomas Schelling proposed firing a nuclear warning shot over some isolated location in the USSR.

As for the Soviets, they made no preparations, and there were indications that they would not press the ultimatum. But they tested bombs in the megaton range. Paul Nitze reacted by underplaying the threat.²⁰ The episode shows how differently the two sides thought about nuclear weapons and how uninterested the Soviets were in any theory of limited nuclear war; massive nuclear exchanges against cities in an

¹⁷ McGeorge Bundy, “Risk and Opportunity: Can We Tell Them Apart?” in Catherine Kelleher, Frank Kerr, and George Quester, eds., *Nuclear Deterrence: New Risks, New Opportunities*, Washington, D.C.: Pergamon, 1986, p. 34.

¹⁸ Quoted in Ted Sorensen, *Kennedy: The Classic Biography*, New York: Harper & Row, 1965, p. 549.

¹⁹ Sorensen, 1965, p. 587.

²⁰ See Nitze quote in Chapter Three.

all-out war were obviously what Moscow had in mind.²¹ In September 1961, data gathered via reconnaissance satellites led U.S. intelligence experts to estimate the number of Soviet ICBMs at only a handful, and this information was conveyed to the Soviet ambassador. There was no strategic parity, and the missile gap favored America. At the end of the day, Kennedy did not have to make a decision. The Soviets backed down again and decided to content themselves with the Berlin Wall. The Wall halted East German immigration and satisfied East German leader Walter Ulbricht, who had been complaining in Moscow about the exodus through West Berlin,²² but it was a default option for the Kremlin and the wider game.

But there was a serious attempt on the American side to find a diplomatic compromise in the first half of 1962 (between January and May). In November 1961, John F. Kennedy had given an interview to *Izvestia* where he made his objectives clear:

In attempting to work out a solution of the problems which came about as a result of WWII, we don't want to increase the chances of WWIII. All we wish to do is maintain a very limited—and they are very limited—number of troops of the three powers in West Berlin and to have, for example, an international administration of the autobahn so that goods and people can move freely in and out.²³

In January 1962, Secretary of State Dean Rusk declared that Washington was prepared to defend Berlin “at whatever cost,” an expression of the U.S. readiness to risk nuclear war for a city very difficult to defend conventionally. At the same time (January 2) negotiations began between the U.S. ambassador in Moscow, Llewellyn E. Thomson, and Andrei Gromyko, then Soviet foreign minister. There were meetings in Moscow and Washington for six months, but no substantial progress was made during this period, even though nine meetings and one formal conference took place between American and Soviet diplomats. American and Soviet interests were too different: Moscow wanted to keep the issue unresolved (much in the way China often leaves some piece of contention on contested borders with neighbors) and was not interested in a compromise. The United States was convinced that some diplomatic solution could be reached because there was a common interest in avoiding war over Berlin. The

²¹ Marshal Rodion Malinovsky said the following on this subject in October 1961: “[We must] devote special attention to the initial period of a possible war. The importance of this period lies in the fact that the first massive nuclear blows can to an enormous extent determine the entire subsequent course of the war” (quoted in Freedman, 2003, p. 252). The emphasis on attacking cities was also consistent with the most important perceived weakness of democratic states, namely the reluctance to accept massive civilian casualties. Soviet operational planning uncovered after the end of the Cold War thanks to documents found in East Germany showed without any possible doubt that cities would have been targeted with chemical and nuclear weapons.

²² See Petr Lunak, “The Berlin Crisis,” in *Cold War History*, Vol. 3, No. 2, January 2003: “The only means [Ulbricht] had to influence Moscow was his country’s weakness as a result of the exodus of his citizens.”

²³ John F. Kennedy, “Transcript of Interview with the President by Aleksei Adzhubei, Editor of *Izvestia*,” November 25, 1961, online by Gerhard Peters and John T. Woolley, *The American Presidency Project*.

fact that the Kremlin (and Gromyko in particular) was more concerned about the last war's vestiges—the U.S. military presence in West Berlin, for example—than about the avoidance of the next war was not understood by the American negotiators, who were convinced that the Soviets were bluffing. They were not. The war was avoided, but the Cuban missile crisis was looming on the horizon.

1962: The Cuban Missile Crisis

The Cuban missile crisis was the most dangerous nuclear crisis so far, and many analysts see it as a follow-up to the Berlin crisis in 1961. The Soviet objectives were to restore parity (nuclear balance),²⁴ to complicate a possible U.S. first strike, and to try to extend deterrence to Cuba in the way Washington had extended deterrence to West Germany (Havana was as vulnerable as West Berlin). It was a great gamble for Khrushchev, who lost. He underestimated Kennedy and American reconnaissance: The missiles were detected prior to their installation. He thought he would be in a better position with intermediate-range ballistic missiles (IRBMs) in Cuba in a possible fourth confrontation over Berlin.²⁵ Another linkage with Berlin was made in Washington: In the event of strikes on Cuba, the main worry in Washington was retaliation on Berlin.²⁶ Dean Rusk mentioned a report in which “high Soviet officials were saying: We’ll trade Cuba for Berlin.”²⁷

The context was one in which the myth of the missile gap had been exposed:

The exposure of the “missile gap” myth in the second half of 1961 ended a four year period during which inflated beliefs in the West that the Soviet Union was rapidly acquiring a large continental strike force had tended to deprive continued and even growing U.S. strategic superiority of much of its political value. Western confidence in U.S. strategic superiority was restored; moreover, it became apparent that the Soviet leaders knew that the West had been undeceived about the strategic balance.²⁸

In this situation, Khrushchev sought a breakthrough with the Cuban missile deployment, with the idea that Washington would be obliged to accept the operation because it would not be discovered until it was completed.

²⁴ If not for the importance of U.S. nuclear superiority, why did the Soviets secretly put missiles in Cuba and lie about it?

²⁵ This new confrontation over Berlin was expected to be raised by the Soviet side after the 1962 U.S. elections.

²⁶ Arnold Horelick, *The Cuban Missile Crisis: An Analysis of Soviet Calculations and Behavior*, Santa Monica, Calif.: RAND Corporation, RM-3779-PR, September 1963, p. vii: “There was no lack of evidence available to Soviet leaders to make it appear plausible that response by the United States would be constrained by concern over possible Soviet retaliation in Berlin.”

²⁷ Quoted in Timothy P. Maga, *The 1960s*, New York: Facts on File, 2003, p. 98.

²⁸ Horelick, 1963, p. v.

Moscow did not count on Washington's prompt discovery of the plan or on the prompt response, the quarantine placing U.S. Navy ships between Cuba and Soviet ships bound for Cuban ports. Both unexpected events happened, threatening the Soviet operation to fail from the start of the crisis. This did not prevent the U.S. side from fearing the outbreak of a nuclear war. Arthur Schlesinger remembered the crisis: "One lobe of the brain had to recognize the ghastly possibility; another found it quite inconceivable."²⁹ On two occasions the crisis threatened to escalate, first with the Cuban quarantine (a de facto blockade), then with a series of unexpected incidents on Black Saturday.

What Washington was not aware of (it was discovered only after the end of the Cold War) was the presence in Cuba of nine Soviet short-range atomic weapons that a senior Soviet troop commander in Cuba was authorized to use without further approval from Moscow in case of a U.S. invasion of Cuba. If those weapons had been fired at U.S. troops, the United States would have retaliated with nuclear weapons. This new information—revealed by retired Soviet General Anatoly Grybkov during a January 1992 four-day closed-door meeting in Cuba among former U.S., Soviet, and Cuban officials—indicates that the two nations were even closer to a nuclear conflict than was previously realized.

After the crisis, President Kennedy recognized that miscalculations were made on both sides: "I don't think we expected that he would put the missiles in Cuba, because it would have seemed such an imprudent action for him to take. . . . He obviously thought he could do it in secret and that the United States would accept it."³⁰ The outcome was a clear victory for the United States (the missiles were quickly withdrawn), and Robert McNamara presented deterrence as the major element of success before Congress: "We faced that night the possibility of launching nuclear weapons and Khrushchev knew it, and that is the reason, and the only reason, why he withdrew those weapons."³¹

After 1962, Khrushchev, whose "recklessness in putting missiles in Cuba brought the world as close as it has ever been to all-out nuclear war,"³² embarked on a policy of détente. However, a coalition of his Politburo colleagues removed him from office in 1964, allowing the military to reassert its position and engage in a major military buildup. What was not noticed at the time (and was only fully discovered after the end of the Cold War) was the extremely risky game played by Fidel Castro, unknown to

²⁹ Quoted in James G. Blight, *The Shattered Crystal Ball: Fear and Learning in the Cuban Missile Crisis*, Savage, Md.: Rowman & Littlefield, 1992, p. 131.

³⁰ John F. Kennedy, "After Two Years—A Conversation with the President," television and radio interview, December 17, 1962, online by Gerhard Peters and John T. Woolley, *The American Presidency Project*.

³¹ Quoted in Sean M. Lynn-Jones, Steven E. Miller, and Stephen Van Evera, eds., *Nuclear Diplomacy and Crisis Management*, Cambridge, Mass.: MIT Press, 1990, p. 260.

³² Strobe Talbott in Khrushchev, 1970.

Kennedy, in confronting the Soviet Union directly. Castro was ready to risk a nuclear war that the Soviets wanted to avoid.³³

The widespread idea that, from this crisis onward, both superpowers became *extremely cautious about all things nuclear* is not borne out by the facts, as the 1970s amply showed.

Asian Crises

1950: Korea (Truman)

The Korean War was an atomic war, even though no atomic weapons were used. The conflict raised the question of nuclear use more forcefully than any of the previous crises. North Korea launched a surprise attack on the South on June 25, 1950, with support from the Soviet Union. The attack was extremely effective, and on the evening of the first day of the war, the possible use of the atomic bomb was brought up at a Blair House meeting. But as with Berlin, Truman did not try to exploit U.S. nuclear capability. He sent in American troops from Japan to stop the invasion, but the American troops were overwhelmed.

The nuclear issue was raised again on June 29, four days after North Korea invaded South Korea, when a questioner at a news conference asked the President whether the United States might have to use the atomic bomb. Truman answered, "No comment." A month later, in response to the same question, Truman's answer was "no."

China indicated that it would not be deterred by the specter of the American bomb and disparaged nuclear weapons as "paper tigers." The Chinese chief of staff told the Indian ambassador: "They may even drop atomic bombs on us. What then? They may kill a few million people."³⁴ China sent many signals that it would intervene during the U.S. advance to the Yalu River. Those signals were not understood. As Thomas Schelling commented later:

When communication fails, it is not easy to decide whether the transmitter is too weak for the receiver or the receiver too weak for the transmitter, whether the sender speaks the receiver's language badly or the receiver misunderstands the sender's. Between the two of us, Americans and Communist China, we appear to have suffered at least one communication failure in each direction in 1950.³⁵

³³ Castro's position fits a description in Brodie, 1958, p. 11: "To be willing to accept enormous destruction only for the sake of inflicting greater destruction on the enemy . . . argues a kind of desperation at the moment of decision which rules out reason."

³⁴ See K. M. Panikkar, *In Two Chinas: Memoirs of a Diplomat*, London: G. Allen & Unwin, 1955, p. 116.

³⁵ Schelling, 1966, p. 55.

As a matter of fact, the Chinese were convinced that they had sent a number of serious warnings. But the Americans did not believe that Mao would intervene while his conventional weapons were rudimentary and the Chinese civil war had just recently ended. That assessment was a major mistake, particularly since Beijing knew there was no credibility in any U.S. nuclear threat.

In late November 1950, a massive Chinese intervention took place by night, achieving strategic surprise and driving American forces back to Seoul. The inferiority of Chinese weaponry did not prevent this important victory. And as far as the civil war was concerned, Mao believed that passivity could encourage separatism and dissidence. The civil war therefore played in the exact opposite direction of what Washington expected. After the return to the status quo ante, the nuclear issue was brought up again, this time by General MacArthur.

On November 30, at a famous news conference, President Truman declared: "We will take whatever steps are necessary to meet the military situation." He was asked: "Will that include the atomic bomb?" The answer came: "That includes every weapon that we have."³⁶ Would the threat of use against China—before the Chinese intervention, or even after it, in November 1950—have been capable of stopping a third actor that changed the face of the Korean War, with considerable consequences? Historians will never know for sure. But it is worth at least asking the question: The Soviets had just tested their first nuclear device in August 1949, Stalin had more pressing business at home, and, when tested, Soviet extended deterrence over China never proved very strong, even when Moscow had much more powerful capabilities.³⁷

There was also serious anxiety that the Chinese intervention in Korea might be a diversion preceding a Soviet attack against Western Europe and general war, something General MacArthur did not take into account in his request. Truman's tacit threat did not work: Chinese forces did not hesitate in their offensive, perhaps because they did not regard the threat as credible (the Soviet spy Donald McLean³⁸ was privy to information about British Prime Minister Clement Attlee's meeting with Truman in which the U.S. President made clear he had no intention of using the bomb). In December 1950, General Douglas MacArthur requested 34 nuclear bombs against invasion forces and suggested taking the war directly to China. This was seen in Washington as risking the loss of America's allies, an expanded war with China, and even an all-out war with the Soviet Union. There is no way to confirm this judgment, but the Chinese might have backed down and the Soviet Union might have been hesitant to enter another major and risky war when no Russian territory was at stake. When General MacArthur insisted, Truman asserted civilian control over the military (this was

³⁶ See Harry S. Truman Library and Museum, "The President's News Conference," November 30, 1950.

³⁷ Soviet extended deterrence over China was tested in the 1954 and 1958 Quemoy and Matsu crises.

³⁸ Donald McLean (London 1913–Moscow 1983) was a British diplomat and a Soviet spy recruited by the Soviet intelligence service while he was an undergraduate at Cambridge.

no doubt a necessary assertion) and MacArthur was dismissed.³⁹ President Truman rightly saw General MacArthur's public remarks about a necessary change in strategy as a public defiance over how to fight the Chinese in Korea.⁴⁰ The nuclear option vanished, only to come back three years later with another President.

1953: Korea (Eisenhower)

The next administration rejected the limited war strategy. President Eisenhower saw merit in MacArthur's plan for using a nuclear threat to induce a settlement of the conflict (Nixon may have also had this example in mind when dealing with Vietnam). Eisenhower focused on the coercive diplomatic potential of nuclear threats. During the spring of 1953, nuclear use in one form or another dominated the planning (Paul Nitze expressed his opposition). Ten years later, Eisenhower wrote:

The lack of progress in the long-stalemated talks—they were then recessed—and the nearly stalemated war demanded, in my opinion, definite measures on our part to put an end to these intolerable conditions. One possibility was to let the Communist authorities understand that, in the absence of satisfactory progress, we intended to move decisively without inhibition in our use of weapons, and would no longer be responsible for confining hostilities to the Korean Peninsula.⁴¹

A Joint Chiefs of Staff plan was approved that included nuclear strikes against North Korea, Manchuria, and the Chinese coast. General Mark Clark was therefore authorized to “carry on the war in new ways never yet tried in Korea.”⁴² The Eisenhower strategy worked, particularly since there was a second element of uncertainty for Beijing: How would Moscow react now that Stalin was dead? The stalled negotiations were concluded with an armistice in July 1953. Mao may have considered the atom bomb a paper tiger,⁴³ but he took the new U.S. President seriously. When asked why

³⁹ After his dismissal, MacArthur remarked, “There is no substitute for victory,” expressing an opposition to restraint in the use of force in war. Quoted in Richard Rovere and Arthur Schlesinger, *General MacArthur and President Truman: The Struggle for Control of American Foreign Policy*, New Brunswick, N.J.: Transaction Books, 2003, p. 227.

⁴⁰ Harry Truman later wrote: “If there is one basic element in our Constitution, it is civilian control over the military. If I allowed him to defy the civil authorities in this manner, I myself would be violating my oath to uphold and defend the Constitution.” Quoted in Michael Foley, *Harry Truman*, New York: Chelsea House Publishers, 2004, p. 80.

⁴¹ Dwight D. Eisenhower, *Mandate for Change*, New York: Doubleday, 1963, p. 230.

⁴² Mark W. Clark, *From the Danube to the Yalu*, New York: Harper, 1961, p. 267.

⁴³ In a 1946 interview with American journalist Anna Louise Strong, Mao said, “The atom bomb is a paper tiger with which the American reactionary try to terrify the people. It looks terrible, but in fact is not. Of course, the atom bomb is a weapon of mass annihilation: the outcome of a war is decided by the people, not by one or two new weapons.” Quoted in Alice Langley Hsieh, *Communist China's Strategy in the Nuclear Age*, Englewood Cliffs, N.J.: Prentice Hall, 1962, p. 132.

the Chinese backed down, Eisenhower replied simply: “Danger of atomic war.” During the Korean War, therefore, there were three instances in which the use of nuclear weapons was considered: (1) at the beginning of the war, (2) when the Chinese intervened, and (3) before the armistice. Only the third threat can be said to have been serious and credible for Beijing. In January 1954, soon after the war ended, Dulles made his famous and controversial speech before the Council on Foreign Relations on massive retaliation in which he threatened to counter *all* aggressions with nuclear weapons, a rather extreme position that no sound lesson from the crisis could support.

1954: Indochina, Operation Vulture

Never implemented, this plan for a secret operation was meant to salvage the French garrison in Dien Bien Phu. The plan involved U.S. airstrikes and the dropping of three small tactical nuclear weapons on the Viet Minh forces.

President Eisenhower thought the position of the French forces in Dien Bien Phu was indefensible (“no military victory is possible in that kind of theatre”⁴⁴) and disapproved the plan. French Prime Minister Georges Bidault, for his part, was worried about the consequences of another nuclear use and a possible Soviet intervention. Finally, there was also reluctance in London to go in this direction. The British, like the French, were worried that any nuclear use in Indochina would result in a Soviet nuclear response on European territory.

Dien Bien Phu fell on May 8, 1954. Along with Suez, but for different reasons, this episode may have played a role in France’s decision to go nuclear.

1954–1955: First Taiwan Strait Crisis

At the beginning of September 1954, the PRC launched a bombardment on the island of Quemoy. In November the Tachen Islands were bombed as well, and they were raided again in January 1955. The motivation for the use of force in November was to prevent the signing of a defense treaty between Washington and the Chinese Nationalist forces, Chiang Kai-shek pressing the United States to do so in order to replace the executive order for Seventh Fleet protection. The result was exactly the opposite. Not only did President Eisenhower change his mind and sign the defense treaty with Chiang in December 1954, but he secured a congressional resolution, the Formosa resolution, when the PRC conducted an assault on the Taizhou Islands and seized an outpost of the Dachen in January 1955.

In fact, the Formosa resolution committed the United States only to the defense of Formosa and the Pescadores, *with no reference to the offshore islands*.⁴⁵ However, the

⁴⁴ Quoted in Lawrence S. Kaplan, Denise Artaud, and Mark R. Rubin, eds., *Dien Bien Phu and the Crisis of Franco-American Relations, 1954–1955*, Wilmington, Del.: SR Books, 1990, p. 86.

⁴⁵ It is worth noting that most Western experts declared the islands indefensible and believed that Formosa could be defended without those outposts.

resolution meant that the United States could not back down from the defense of Formosa without an intolerable loss of prestige. It was a clear support of American deterrence and a clear message to Beijing (and to Moscow) about American determination.

In his memoirs, President Eisenhower wrote about his decision: "If we defend Quemoy and Matsu, we'll have to use atomic weapons. They alone will be effective against the mainland airfields. To this I agreed."⁴⁶ Eisenhower and Dulles made a number of public statements that left little room for doubt that nuclear detonations would be part of the military resistance to a Chinese invasion. The bombing plan was made, and nuclear-armed naval and air units were brought to the area. The potential for a Soviet response was ignored this time, as were the objections of the Allies.

The PRC took notice, and Chou en Lai announced at the Bandung Conference in late April that Beijing was willing to negotiate. A month later, he said that the PRC was willing to "liberate" Taiwan "by peaceful means as far as this is possible."⁴⁷ The crisis was ended.⁴⁸

Dulles concluded: "Nobody . . . is able to prove mathematically that it was the policy of deterrence which brought the Korean War to an end and which kept the Chinese from sending their Red armies into Indochina, or that it has finally stopped them in Formosa. I think it is a pretty fair inference that it has."⁴⁹ In April 1955 the Sino-Soviet atomic cooperation treaty was signed.

1958: Second Taiwan Strait Crisis

In August 1958, at the time of the Great Leap Forward, China blockaded the islands of Quemoy and Matsu, and the Chinese artillery barrages were matched with a commitment of Chinese airpower. The bombardment was officially justified by the landing of U.S. forces in Lebanon as a show of "international solidarity." In Washington, the move was taken seriously. The American response included a large naval deployment, and Eisenhower authorized preparations "to use atomic weapons to extend deeper into Chinese Communist territory if necessary" (according to documents declassified in 2008, the services were ordered by President Eisenhower to plan for nonnuclear attacks).⁵⁰

On the Soviet side, Khrushchev looked resolute as well: "Any threat against the Chinese Communist regime would be interpreted in Moscow as a threat against the

⁴⁶ Quoted in Stanley Meisler, *The United Nations: The First Fifty Years*, New York: Atlantic Monthly Press, 1997, p. 86.

⁴⁷ Betts, 1987, p. 61.

⁴⁸ Chiang Kai-shek played an important role during this crisis, refusing a U.S. blockade of the mainland Chinese coast that could have precipitated an unnecessary war.

⁴⁹ Quoted in Richard Goold-Adams, *John Foster Dulles: A Reappraisal*, New York: Appleton-Century-Crofts, 1962.

⁵⁰ See Walter Pincus, "Eisenhower Advisers Discussed Using Nuclear Weapons in China," *Washington Post*, April 30, 2008, p. A15.

Soviet Union,”⁵¹ a declaration evidently designed to be interpreted as a clear expression of Soviet extended deterrence.

But there was no intention in Moscow to enter into a confrontation with Washington over islands that represented no vital interest for either Moscow or Beijing, particularly since a September memorandum from Eisenhower stated his decision to use nuclear weapons if necessary, with broader mission and recognition of the risks noted by Dulles: “The risk of a more extensive use of nuclear weapons and even a risk of nuclear war would have to be accepted.”⁵²

This position was criticized in Europe and America⁵³ for fear of the potential consequences, but it attained the objective. By the end of September, the Chinese blockade was broken, and on November 10, the *New York Times* printed the headline: “Victory at Quemoy.” As in previous cases, there is no clear evidence as to whether nuclear threats influenced Beijing, but the likelihood is high that they did.⁵⁴ Lack of confidence in Soviet extended deterrence could also have played a role. (Even though Moscow contended all along that the USSR would give China the necessary aid “to fight for the liberation of Formosa,”⁵⁵ the Soviet nuclear forces never went on alert.) The return to the status quo was another failure for the PRC.⁵⁶ It was humiliated by being forced to withdraw without any gain. When questioned by a vice chairman of the National Defense Commission as to why he did not seize the islands, “Mao replied that the heavy concentration of U.S. forces had to be taken seriously.”⁵⁷ China was also worried about the caution shown by the Soviet side.

The Soviet Deputy Foreign Minister for the Far East at the time, M. S. Kapitsa, tells a different story in his memoirs, asserting that Mao was willing to see the United States use nuclear weapons against Fujian province during the crisis in order to convince the Soviets that China needed nuclear weapons.⁵⁸ (As a matter of fact, the

⁵¹ Betts, 1987, p. 73.

⁵² John Lewis Gaddis, *Strategies of Containment*, New York: Oxford University Press, 2005, p. 168.

⁵³ London rejected any possible involvement in the crisis, and respected American officials like George Kennan attacked the policy.

⁵⁴ Such is the judgment of a French expert, Pierre Gallois, in his book *The Balance of Terror: Strategy for the Nuclear Age*, New York: Houghton Mifflin, 1961, p. 144: “Thanks to M. Dulles’ determination, Peking retreated. The stake of the conflict—the islands of Quemoy and Matsu—seemed to Peking out of proportion to the risk that would have to be run to test the Secretary of State’s intentions.”

⁵⁵ Betts, 1987, p. 73.

⁵⁶ It took time for Mao to understand what changes were introduced by nuclear weapons in times of crisis. In his memoirs, Nikita Khrushchev recalls the need to explain to Mao that the reference to the number of divisions was no longer relevant: “And now with the atomic bomb, the number of troops on each side makes practically no difference to the alignment of real power and the outcome of a war.” In Khrushchev, 1970, p. 470.

⁵⁷ See Allen S. Whiting, “China’s Use of Force, 1950–96, and Taiwan,” *International Security*, Vol. 26, No. 2, Fall 2001, p. 110.

⁵⁸ M. S. Kapitsa, *Memoirs*, Moscow: Kniga I Bizness, 1996.

Soviet leadership had decided by mid-1957 to pass on to China the know-how of production of nuclear weapons. On August 2, a group of Soviet designers had just left Beijing after a month and a half in China, but Mao wanted the model of a Soviet atomic bomb along with full documentation of the test benches, control panels, rigging, testing devices, etc.⁵⁹ By the time of their meeting in July 1958, relations between Khrushchev and Mao had already become tense, and the Chinese leader was starting to appear too irresponsible and possibly too assertive and even dangerous to be getting the ultimate weapon.⁶⁰ In many ways, it was already too late. The Chinese had gotten training, equipment, and more information than was necessary. Beijing decided to become less dependent on the Soviet Union; as Foreign Minister Chen Yi told the Soviet ambassador at the end of the crisis, “You have left us without pants, but we will build a bomb nevertheless.”⁶¹ In 1960, the Soviet-Chinese friendship faded away openly, and in 1964, as Khrushchev was falling from power, China detonated its first atomic bomb, with Prime Minister Zhou Enlai reportedly declaring: “Let it be our parting salute for Khrushchev.”⁶² The paper tiger rhetoric had disappeared for good.

1962: India-China War

The 1962 war over the disputed Himalayan border also had a political motivation for China: to punish India for having granted asylum to the Dalai Lama after the 1959 Tibetan uprising. The Chinese offensive, launched on October 20, coincided with the Cuban missile crisis. The war ended a month later with the Chinese decision to adopt a cease-fire and to withdraw its troops. It was not a nuclear crisis involving the United States, but it raised an interesting argument, well put by Thomas Schelling:

As far as I can tell, we had only the slightest commitment, if any, to assist India in case of attack by the Chinese or the Russians, if only because over the years the Indians did not let us incur a formal commitment. One of the lessons of November 1962 may be that, in the face of anything quite as adventuresome as an effort to take over a country the size of India, we may be virtually as committed as if we had a mutual assistance treaty. We cannot afford to let the Soviets or Communist Chinese learn by experience that they can grab large chunks of the earth and its population without a genuine risk of violent Western reaction.⁶³

⁵⁹ See Evgeny A. Negin and Yuri N. Smirnov, *Did the USSR Share Atomic Secrets with China?* trans. Vladislav M. Zubok, Zurich, Switzerland: Parallel History Project on Cooperative Security, 2002.

⁶⁰ See Kapitsa, 1996, p. 63.

⁶¹ Quoted in Lyle Goldstein, *Preventive Attack and Weapons of Mass Destruction*, Stanford, Calif.: Stanford University Press, 2006, p. 77.

⁶² Negin and Smirnov, 2002.

⁶³ Schelling, 1966, p. 51.

This is the expression of a latent or implicit policy. As a matter of fact, the Kennedy administration considered the offensive a “blatant Chinese communist aggression against India,” and in May 1963, a National Security Council meeting considered that in the event of another similar attack on India, the United States should use nuclear weapons in case of intervention.⁶⁴ Such was Robert McNamara’s advice to the President, one year before China exploded its first nuclear device.⁶⁵

1964: The First Chinese Test and Japan’s Reaction

China’s first nuclear test does not amount to a nuclear crisis, but it deserves some consideration because of the importance of the Japanese reaction. According to documents recently declassified by Japan’s foreign ministry, Japan asked the United States in 1965 to be ready to launch a nuclear attack on China if war broke out between Beijing and Tokyo.⁶⁶ The talks were held on January 13, 1965, between Japanese Prime Minister Eisaku Sato and U.S. Secretary of Defense Robert McNamara, against the backdrop of China’s first successful test of an atomic bomb. At the time, neither Japan nor the United States had diplomatic ties with China. Secretary McNamara asked Prime Minister Sato whether Japan would develop its own nuclear weapon capability. Sato responded that it had no intention of doing so, but that it would “of course be a different matter in the event of a war.” He added that the United States was expected “to retaliate immediately using nuclear weapons.” Japan would allow the United States to use Japanese waters (but not Japanese soil) to launch the attack.⁶⁷

Prime Minister Sato is the one who formulated Japan’s nonnuclear policy (*no production, no possession, and no nuclear weapons on its territory*). He won the Nobel Peace Prize in 1974 for his stance on nuclear weapons.

The documents declassified in 2008 are indicative of Japan’s lasting anxiety concerning China’s nuclear capabilities. As they expand, the anxiety grows. The 1964 message is therefore one to keep in mind in the years to come.

1969: Vietnam, Operation Duck Hook and Operation Giant Lance

When Richard Nixon assumed the presidency in January 1969, one of his top priorities was to end the Vietnam War. The Nixon Presidential Materials Project at the U.S. National Archives revealed in 2005 that two National Security Council documents

⁶⁴ Dinesh Lal, *Indo-Tibet-China Conflict*, Delhi, India: Kalpaz Publications, 2008.

⁶⁵ In May 1963, Robert McNamara gave the following advice to President Kennedy: “Any large Chinese Communist attack on any part of that area would require the use of nuclear weapons by the US, and this is preferred over the introduction of large numbers of US soldiers.” See Anand Giridharadas, “’63 Tapes Reveal Kennedy and Aides Discussed Using Nuclear Arms in a China-India Clash,” *New York Times* (International), August 26, 2005.

⁶⁶ The diplomatic documents were officially declassified in December 2008 and have been widely commented on in the Japanese press.

⁶⁷ “No-Nuke Policy Ruled Out Years Before Declaration,” *The Japan Times*, Monday, December 22, 2008.

related to the Vietnam War mentioned the option of threatening the use of nuclear weapons in order to coerce Hanoi to negotiate.

It remained unclear for some time whether President Nixon had approved these documents or even had read them. In 1985, Richard Nixon said that he had considered using nuclear weapons four times during his administration.⁶⁸ Between 1969 and 1974, apart from the 1973 Yom Kippur War, what conflict other than Vietnam was serious enough to warrant contemplating nuclear use? None.⁶⁹ And indeed, thanks to two declassified documents released by the Nixon Presidential Materials Project at the U.S. National Archives in 2005, we now know that in early July 1969, contingency military plans were developed under the code name Duck Hook that “targeted at least two sites in North Vietnam for nuclear air bursts.”⁷⁰ The objective was

to coerce Hanoi “to negotiate a compromise settlement through a series of military blows,” which would walk a fine line between inflicting “unacceptable damage to their society” and bringing about “the total destruction of the country or the regime, which would invite major outside intervention [by the USSR or the PRC].”⁷¹

The operation was supposed to be short and to “generate [a] strong psychological impact on Hanoi’s leadership.” The nuclear dimension is brought up in an attachment titled “Important Questions,” which raises the question, “Should we be prepared to use nuclear weapons?” The documents show that the use of nuclear weapons had at least been considered and examined by military planners.⁷²

Operation Giant Lance was the preparatory phase of Duck Hook. On October 10, 1969, major U.S. military commanders received a message from the Joint Chiefs of Staff informing them that U.S. military readiness should be increased in order “to respond to possible confrontation by the Soviet Union.”⁷³ On October 27, the airborne alert went far enough:

SAC launched a series of B-52 bombers, armed with thermonuclear weapons, on a “show of force” airborne alert, code-named Giant Lance. During this alert opera-

⁶⁸ Henry Kissinger disagreed with the former President in “An Interview with Henry A. Kissinger: ‘We Were Never Close to Nuclear War,’ ” *Washington Post*, August 11, 1985, p. L8. Nixon, however, may have kept his view on the subject until his death.

⁶⁹ The two other instances President Nixon had in mind may have been Jordan and Cuba in 1970.

⁷⁰ William Burr and Jeffrey Kimball, eds., “Nixon White House Considered Nuclear Options Against North Vietnam, Declassified Documents Reveal,” National Security Archive Electronic Briefing Book No. 195, July 31, 2006.

⁷¹ Burr and Kimball, 2006.

⁷² Burr and Kimball, 2006.

⁷³ William Burr and Jeffrey Kimball, eds., “Nixon’s Nuclear Ploy: The Vietnam Negotiations and the Joint Chiefs of Staff Readiness Test, October 1969,” National Security Archive Electronic Briefing Book No. 81, December 23, 2002.

tion, eighteen B-52s took off from bases in California and Washington State. The bombers crossed Alaska . . . and then flew in oval patterns toward the Soviet Union and back, on eighteen-hour “vigils” over the northern polar ice cap.⁷⁴

This was at the end of the Sino-Soviet confrontation over border clashes.

What was the purpose of this bizarre operation? Apparently the goal was to convince both the Soviets and the North Vietnamese that Washington would do anything to end the war in Vietnam—but what, exactly, did that mean? It remains an enigma. The wisdom of such a dangerous move (even if some precautionary measures were adopted) at a time of Soviet nervousness because of the crisis with China is questionable at best. In addition, it apparently failed to impress either the North Vietnamese or the Soviets but caused the Chinese to go on alert (probably because Beijing expected the Soviets to react). In April 1972, Nixon again told Kissinger about his interest in using a nuclear bomb to respond to the North Vietnamese Easter Offensive. The U.S. President then settled only on the threat of use.

1969: Soviet-Chinese Border Clashes (March–October)

In 1969 the USSR was an impressive nuclear power, while China was a relative newcomer to the nuclear scene, having tested its first atomic nuclear weapon only four years earlier. This asymmetry did not prevent Beijing from challenging Moscow and from scoring a political victory, thanks to the United States acting as a third party in the dispute. The initial situation was as follows: On a disputed island (Zhenbao Island, or Damansky Island) on the Ussuri River, between the USSR and China, Chinese troops took the initiative to attack their Soviet counterparts, driving Moscow almost hysterical in the very first days (General Grechko was in favor of a massive nuclear attack on Chinese soil). The Chinese move was reckless indeed: This is the only recorded incident of conventional combat⁷⁵ between nuclear-armed nations prior to the Kargil crisis in 1999 (with two other protagonists, India and Pakistan).

Moscow soon became concerned about the American reaction. After the initial Chinese attack, Moscow asked Washington how it would react to an attack against Chinese nuclear assets (Lop Nor, the Chinese nuclear testing site, was included as one of the targets, but the ambition was to destroy the nascent Chinese nuclear arsenal with conventional means).

A memorandum to President Nixon, now declassified, reports a Soviet démarche in Washington asking point blank what the United States would do if the Soviet Union attacked and destroyed China’s nuclear installations. The objectives mentioned were twofold: one, eliminate the Chinese nuclear threat for decades, and two, discredit

⁷⁴ See Scott Sagan and Jeremi Suri, “The Madman Nuclear Alert,” *International Security*, Vol. 27, No. 4, 2003.

⁷⁵ On March 2, 1969, 31 Soviet guards were killed and 14 were wounded; on March 15, Chinese forces numbered 2,000 men and Soviet forces used about 50 tanks and—for the first time—launched BM-21 Grad rockets.

“the Mao clique” at the time of the Cultural Revolution. Washington could have easily concluded that a confrontation between two of its adversaries would be in its interest, particularly if the conflict remained conventional, and there was little chance that Beijing would be foolish enough to escalate, taking into account the Soviet retaliatory capability. But there was apparently no hesitation in answering that Washington would view any outbreak of major hostilities between the Soviet Union and China with great concern but that the United States would want to keep out of such a conflict.⁷⁶ Be that as it may, the Soviet ambassador to the United States, Anatoly Dobrynin, reported that “the US would not be passive regarding such a blow at China.”⁷⁷

The Chinese finally backed down on October 7, but they won a major political battle with Moscow, and they saw an opportunity to use Washington against Moscow at a time when Washington was already taking initial steps in the Sino-American rapprochement, which would worry the Soviets about the prospect of Beijing exploiting the new U.S.-Chinese relationship in order to exert pressure on them.⁷⁸ China, for its part, changed its position vis-à-vis Washington in 1971.

Thomas Robinson, in a 1971 RAND study, writes the following:

The American efforts to improve relations with Peking, until July 1971 nearly a unilateral effort, suddenly received support from the Chinese leadership in agreeing to the American President’s visit to Peking. Why? It is very tempting to argue either that some as yet unknown development in Sino-Soviet relations (possibly concerning the border) caused Peking to open the door to Washington, or that Mao and his associates feared an imminent Soviet attack. Or, as a third possibility, a basic decision might have been taken to use Washington as a makeweight in the long term Chinese effort to build a world balance of power against Moscow.⁷⁹

The third possibility looks more likely than the first two, and July 1971 was the date of Kissinger’s secret trip to Beijing, which was not known at the time of the RAND study.

⁷⁶ See “Memorandum for the President from Secretary of State William Rogers, ‘The Possibility of a Soviet Strike Against Chinese Nuclear Facilities,’” September 10, 1969, in William Burr, ed., “The Sino-Soviet Border Conflict, 1969,” National Security Archive briefing book, June 12, 2001.

⁷⁷ Betts, 1987, p. 81.

⁷⁸ The Soviet ambassador, Anatoly Dobrynin, thought after Kissinger’s trip to China in July 1971 that Moscow should continue its policy toward the United States but give Washington no reason to believe that the Chinese factor could influence Moscow and lead it to make concessions. Anatoly Dobrynin, “Telegram from Ambassador Dobrynin to the Soviet Foreign Ministry, Washington, July 17, 1971,” in William Burr, ed., *The Kissinger Transcripts: The Top-Secret Talks with Beijing and Moscow*, Washington, D.C.: New Press, 2000, p. 401.

⁷⁹ Thomas Robinson, *The Border Negotiations and the Future of Sino-Soviet-American Relations*, Santa Monica, Calif.: RAND Corporation, P-4661, August 1971, p. iii.

1971: Indo-Pakistani War

In 1971 a crisis was triggered by East Pakistan's quest for independence and ended with the Indo-Pakistani War and the emergence of Bangladesh. The Soviets supported India (an Indo-Soviet treaty had been signed in August 1971 to offset the U.S.-Chinese rapprochement), while China and the United States, though they helped Pakistani forces,⁸⁰ did not prevent India from breaking up Pakistan. In light of the Vietnam entanglement, neither country wanted direct involvement in a crisis in which intervention might lead to becoming embroiled in a larger war. In addition, both countries were entering a new diplomatic era; Nixon ignored atrocities carried out by Pakistani forces, in order to avoid Islamabad's displeasure at a time when President Yahya Khan was helping Nixon prepare for a secret trip to China (1972).

The Pakistan-China relationship (and not only the fact that India was seen as a Soviet client) was therefore an important element in the U.S. decision to send military aid to Pakistan through Jordan and Iran, and even to dispatch USS *Enterprise*, America's largest aircraft carrier with 75 nuclear-armed fighter bombers on board, to the Bay of Bengal in December 1971. The decision was unwise, however, since the *Enterprise* left the region shortly after arrival, at a time when the Indo-Pakistani War had been over for five days. It was pure theater, but with nuclear weapons.

If the American aircraft carrier was intended to blackmail Moscow, the main support behind India, then the blackmail failed.⁸¹ According to the Dobrynin-Kissinger Back Channel Meetings, declassified in 2007, Moscow was surprised by the intensity of American accusations regarding its support of India's use of force against the integrity of Pakistan.⁸² For its part, India was puzzled as to the real objective of the U.S. naval task force, fearing a possible evacuation of Pakistani soldiers by U.S. ships.

Middle East Crises

Any serious crisis in the Middle East could have led to a superpower confrontation, even against the will of the two main actors, since Moscow was all along committed to Arab victories and Washington to Israeli victories. Occasions for such possible confrontation were never lacking.

⁸⁰ Nixon is thought to have been in favor of Pakistan partly because of the latter's crucial role in the rapprochement with Beijing.

⁸¹ See Louis J. Smith and Edward C. Keefer, eds., *Foreign Relations of the United States, 1969–1976*, Vol. XI: *South Asia Crisis, 1971*, Washington, D.C.: United States Government Printing Office, 2009. See also William Burr, "Nixon/Kissinger Saw India as 'Soviet Stooge' in 1971 South Asia Crisis," National Security Archive, June 29, 2005. According to the documents declassified in 2005, which contain many exchanges between Nixon and Kissinger during the crisis, Kissinger noted the problem that would arise "if our bluff is called."

⁸² Burr, William, ed., "Kissinger Conspired with Soviet Ambassador to Keep Secretary of State in the Dark," National Security Archive Electronic Briefing Book No. 233, November 2, 2007.

1956: Suez Canal Crisis

The Suez Canal crisis saw the first postwar instance of deep disagreement between the United States and Britain and France about a strategic decision. Britain had already been worried about Washington's nuclear threats (notably Eisenhower's), but the divide never went far before Suez. This was also the first instance of a Soviet nuclear threat in a crisis, but it was not directed against America but against Britain and France, whose forces had landed in Egypt after Gamal Abdel Nasser's decision on July 26 to nationalize the Suez Canal. Both nations saw the decision as the beginning of the complete loss of their colonies. Egypt's decision followed U.S. refusal on July 19 to provide funding for the dam project because of the alleged diversion of resources to buy Soviet equipment.

On November 5, 1956, Moscow demanded a cease-fire in Egypt and the withdrawal of foreign troops. Two messages to London and Paris were regarded as an ultimatum. Nikolai Bulganin's note to Antony Eden contained the following warning: "If this war is not stopped, it carries the danger of turning into a third world war."⁸³

Eisenhower pressured the Allies to withdraw from Egypt but warned Moscow that nuclear attacks on Britain and France would draw U.S. retaliation. The American Supreme Allied Commander in Europe, General Alfred Gruenther, declared that if the Soviets attacked Britain or France, Moscow would be destroyed "as surely as night follows day," a pretty clear expression of extended deterrence.⁸⁴ U.S. intelligence was convinced that the Soviets were bluffing. Eisenhower said, "If the fellows start something, we may have to hit them—and, if necessary, with everything in the bucket."⁸⁵ The President later claimed: "We just told them that this would be . . . global war if they started it, that's all."⁸⁶

In a 1985 article on the importance of nuclear deterrence in keeping international security, Richard Nixon cites this episode as a significant example along with Korea (1953), Berlin (1959), and Cuba (1962).⁸⁷

A second Suez crisis erupted in 1970 during the War of Attrition between Israel and Egypt along the Suez Canal. By then, Israel had acquired nuclear weapons and found itself fighting antiaircraft missiles supplied to Egypt by the Soviets along with Soviet crews, resulting in four F-4s downed (summer 1970). A cease-fire prevented further escalation.

1958: Lebanon

In 1958, there was a radical coup in Iraq, and the West lost an ally in the Middle East. The event spread fears that the whole Middle East might become unsettled, particu-

⁸³ Betts, 1987, p. 63.

⁸⁴ Betts, 1987, p. 64.

⁸⁵ Betts, 1987, p. 65.

⁸⁶ Betts, 1987, p. 65.

⁸⁷ Richard Nixon, "How to Live with the Bomb," *National Review*, Vol. 37, No. 18, September 1985, p. 25.

larly Jordan and Lebanon. The United States decided to send Marines to Lebanon and the Sixth Fleet received reinforcements from the Atlantic. Britain sent forces to Lebanon. The meaning was clear: The coup in Iraq was accepted, but further extension of radical influence to neighboring countries would be met with resolve. Moscow declared that it “was not remaining indifferent to events which seriously threatened a region bordering its frontiers, and that it reserved the right to take the measures which the defense of peace and the concern for its own security imposed.”⁸⁸ Eisenhower, for his part, ordered the Strategic Air Command (SAC) on alert, and 1,100 aircraft were positioned for takeoff. The American resolve impressed the Soviets. Khrushchev declared on the occasion: “Frankly, we are not ready for WWII.”⁸⁹ The resolve was also noted in China, where the PLA newspaper reported on July 17 that “the US openly threatened to carry out atomic warfare in Lebanon.”⁹⁰

1970: Jordan

This is one of the crises where President Nixon showed a surprising recklessness, as if he would have welcomed a confrontation. Seymour Hersh pretends that Nixon was “determined to have his crisis and prove his mettle, as John F. Kennedy had in the Cuban missile crisis,”⁹¹ a mere (and rather bizarre) possibility,⁹² but Nixon did make the following remark in 1970: “There is nothing better than a little confrontation now and then, a little excitement.”⁹³

The occasion for the “little excitement” then was Black September, the massive Jordanian attack on Palestinian forces based in Jordan. Syria crossed the Jordanian border, Israel wanted to secure King Hussein’s regime, and U.S. airborne units in Germany were conspicuously moved to airfields—even though there was no indication that the Soviets were backing Damascus. By September 20 and 21, five U.S. divisions had been put on full alert and the Sixth Fleet, trailed by Soviet ships equipped with cruise missiles, was significantly expanded (from two to five aircraft carriers), while Israeli forces, supported by Nixon, attacked the Syrians.

⁸⁸ Nixon, 1985.

⁸⁹ Quoted in Barry Blechman and Stephen Kaplan, *Force Without War: U.S. Armed Forces as a Political Instrument*, Washington, D.C.: The Brookings Institution, 1978, p. 251.

⁹⁰ Quoted in William Quandt, “Lebanon 1958 and Jordan 1970,” in Barry Blechman and Stephen Kaplan, *Force Without War: U.S. Armed Forces as a Political Instrument*, Washington, D.C.: The Brookings Institution, 1978, p. 257.

⁹¹ Seymour M. Hersh, *The Price of Power: Kissinger in the Nixon White House*, New York: Summit, 1983, p. 238.

⁹² Since Kennedy had conveyed the image that he was tougher on the Soviets than Nixon was during the 1960 television debate, a post-mortem revenge was not unthinkable. After all, at the time of the Jordan crisis, another crisis with Moscow loomed: Cuba was building soccer fields, and Kissinger contended that Cubans play baseball while Russians play soccer (untrue then and now), suggesting that a large Soviet base was under construction.

⁹³ Quandt, 1978, p. 272.

By then, the excitement was no longer so “little.” Fortunately, Jordanian forces later succeeded in hurting Syrian tanks badly, driving them back home; but the considerable risks accepted by Richard Nixon are almost unbelievable, all the more so since there was no serious attempt on his part to communicate with Moscow during this period. He may have thought that looking capable of “irrational action” was good for relations with the USSR, but the truth is that even Henry Kissinger reportedly had some difficulty making himself heard.

1973: Yom Kippur War⁹⁴

The Yom Kippur War erupted in the context of Israel’s overwhelming victory over Egypt, Syria, and Jordan in the 1967 Six-Day War—resulting in Jordan’s loss of Jerusalem. The Arabs “were not deterred from waging the 1973 war by the knowledge that Israel was in possession of nuclear weapons”⁹⁵ and launched a massive surprise attack against Israel on October 6, 1973. The attack did not only surprise Israel, convinced after 1967 that Egypt would not attack without strong air capabilities; it also surprised a number of Western capitals, including Washington. Henry Kissinger put it in the clearest possible fashion: “Our definition of rationality did not take seriously the notion of [Egypt and Syria] starting an unwinnable war to restore self respect.”⁹⁶ Rational or not, this war, which lasted 20 days, could have had “incalculable consequences” (the exact wording in President Nixon’s letter to the Kremlin on October 24⁹⁷). A day earlier, when a second U.N. cease-fire unraveled, Israel appeared to be threatening to collapse Egypt’s defense completely by surrounding the Egyptian Third Army and demanding its surrender. The USSR decided to exert pressure on Washington, suspected to have betrayed a jointly worded cease-fire agreement reached in Moscow by Henry Kissinger that was supposed to have been communicated to Tel Aviv with the additional pressure of U.N. resolution 338.⁹⁸ Since fighting continued on the ground, a second cease-fire resolution (339) was adopted by the Security Council on Octo-

⁹⁴ By this time, Israel was thought to have possessed nuclear weapons for five or six years already. In September 1969, when Golda Meir visited Washington in the first year of the President Nixon mandate, there was a commitment on her part not to test, not to declare possession, and not to make the weapons visible in any way. But during the Yom Kippur War, the situation was almost desperate in the very first days, and Israeli nuclear weapons reportedly went on alert.

⁹⁵ Avner Cohen, *Israel and the Bomb*, New York: Columbia University Press, 1998, p. 342.

⁹⁶ Henry Kissinger, 1982, p. 465.

⁹⁷ Richard Nixon, *RN: The Memoirs of Richard Nixon*, Vol. II, New York: Simon & Schuster, 1990, pp. 498–499.

⁹⁸ This U.N. Security Council resolution, adopted on October 22 at 12:49 a.m., called “upon all parties to the present fighting to cease all firing and terminate all military activity” within 12 hours. The resolution lacked an enforcement clause.

ber 23, urging “the parties to return to the previous lines.”⁹⁹ Shooting resumed again, however, and the Soviets warned Israel of the “greatest consequences” if it did not stop its “aggression”¹⁰⁰ (actually, the trapped Third Army was trying to break its encirclement). On October 24, Leonid Brezhnev sent an urgent and unusually tough message to Washington proposing joint superpower intervention to reinstitute the cease-fire and threatening unilateral action in case of refusal. The Soviet alert was heightened¹⁰¹ and so was the U.S. alert (SAC B-52s were recalled from Guam¹⁰²).

According to Richard Betts, “the US threat was an example of manipulation of risk, the ‘threat that leaves something to chance,’ an exploitation of the danger that the crisis could slip out of control and into mutual catastrophe.”¹⁰³ It was meant “to play in domestic politics by giving the impression that the administration was being tough on the Soviets while it was actually doing what Moscow wanted: squeezing the Israelis.”¹⁰⁴ Actually, President Nixon, being in the midst of the Watergate scandal, was thought to be in no shape to make weighty decisions, and this may have figured into Kissinger’s alert decision. The nuclear element, though, does not appear appropriate during this particular crisis: This was no threat to American territory or to any Allied territory but an invitation to interpose troops to enforce an agreed U.N. Security Council cease-fire. True, the crisis originated in Moscow with Brezhnev’s message to Nixon, but the message itself and its tough tone would not have been possible without the conviction in Moscow that it had been double-crossed, a feeling that Washington did nothing to dissipate. The message from the Kremlin seems to have been overdramatized by Washington, and the Soviets, surprised by the U.S. move and nervousness, were wise enough not to aggravate the situation by overreacting as well: Starting World War III because of Syria and Egypt appeared totally unreasonable to the Kremlin.¹⁰⁵ The Soviets actually sent 70 observers to monitor the U.N. cease-fire, and the Israelis finally complied.

⁹⁹ Of October 23, Henry Kissinger writes, “Eight impeachment resolutions had that day been submitted to the House of Representatives Judiciary Committee.” See Kissinger, 1982, p. 375. So Kissinger was almost entirely in charge of the crisis management.

¹⁰⁰ Kissinger, 1982.

¹⁰¹ By October 12, all seven Soviet airborne divisions were on alert and a special airborne command post was established in southern USSR.

¹⁰² The 82nd Airborne Division was alerted, additional aircraft carriers were ordered to the eastern Mediterranean, and all U.S. units were put at DEFCON 3.

¹⁰³ Betts, 1987, p. 126.

¹⁰⁴ Betts, 1987, p. 126.

¹⁰⁵ One Soviet plane reached Cairo on October 25 and left immediately, probably recalled home by the Kremlin. Once vindicated by the successes early in the conflict, Egypt could contemplate peace with Israel as well as leaving the Soviet sphere of influence.

It should be noted here that such compliance, far from being a concession, was in the best interest of Tel Aviv: There would have been no way to sign any peace agreement in Camp David with a humiliated Cairo in 1973.

Misperception

1983: Able Archer Exercise

Able Archer, a ten-day NATO exercise starting on November 2, 1983, took place in a deteriorating strategic environment between the United States and the USSR, with the arrival in Europe of Pershing II missiles and ground-launched cruise missiles. The exercise simulated a conflict escalation, with a nuclear release at the end. The conditions were exceptional, with the participation of heads of state and government and the use of a number of new communication systems. Moscow, although informed about and familiar with the exercise, came to believe that it was in fact a ruse of war, due to the strategic environment and the realistic features of the activity.¹⁰⁶

What Lessons Can Be Drawn from These Crises?

Superiority Is Not the Decisive Factor

At a time when the United States had a clear nuclear monopoly, it did not prevent the Soviet Union from solidifying its control over Eastern Europe.¹⁰⁷ In 1950, when Moscow had just completed its first nuclear test (RDS-1, or Joe-1, August 29, 1949¹⁰⁸) and when Beijing had no nuclear capability, the Chinese were not prevented from entering the Korean War.¹⁰⁹ During more risky times, when the Soviet Union was building its nuclear arsenal, Washington came out on top in most crises: Korea in 1953, when negotiations were concluded; Quemoy and Matsu in 1954 and 1958; Berlin in 1958–1959 and 1961; and the Cuban missile crisis in 1962. In 1969, China challenged not only Soviet interests but Soviet soil at a time when the Chinese nuclear

¹⁰⁶ The war scare of the 1980s was related to other operations besides Able Archer. See Benjamin B. Fischer, "Intelligence and Disaster Avoidance: The Soviet War Scare and US-Soviet Relations," in Stephen Cimbala, ed., *Mysteries of the Cold War*, Brookfield, Vt.: Ashgate Publishing Company, 1999, p. 89.

¹⁰⁷ Indeed, no nuclear threats were issued to prevent the Soviet Union from extending its power in Eastern Europe, not even with the Communist *coup de force* in Prague in 1948. But the demonstration made in Hiroshima and Nagasaki by the United States did not lead Moscow to exercise prudence in the years immediately following World War II.

¹⁰⁸ The bomb, designated and built at Arzamas-16, is visually almost identical to the American "Fat Man."

¹⁰⁹ Dean Acheson's controversial speech of January 12, 1950, is often read as a signal that Washington did not regard South Korea as a U.S. defense interest (Dean Acheson, "Speech on the Far East," speech given at the National Press Club, Washington, D.C., January 12, 1950). But this was evidently an incorrect assessment: The war was fought essentially by Americans and lasted three years under terrible conditions.

arsenal was nascent and the Soviet arsenal huge. Weapons were not the decisive element.¹¹⁰ They are not decisive today, either.¹¹¹

But Numbers Do Matter

That nuclear parity, or even superiority, does not *guarantee* a credible deterrent does not mean that numbers do not matter. They do, to an extent. Moscow was wrong to strive for nuclear superiority (and the USSR did not feel secure even when Moscow had more ICBMs than Washington), but the ability to survive an attack and to strike back requires dealing with numbers.

Leadership Lies at the Very Core of Deterrence

To follow up on the previous section, impressive military power cannot compensate for hesitant leaders. It appears that the personalities of leaders have played the most significant role during nuclear crises. Leadership may not be sufficient to ensure deterrence, but it is undoubtedly necessary. The Chinese, for example, took the 1953 nuclear threat seriously, but they ignored the ambiguous signal made by Washington in 1950. In 1950 they had learned from the Soviets that Washington had no intention of seriously threatening Beijing with a nuclear attack, while in 1953, Eisenhower looked credible enough for them to back down. Another example comes from the Cuban missile crisis. In 1962, after a first meeting a year earlier between Nikita Khrushchev and John F. Kennedy had revealed weaknesses of the new U.S. President in his relations with Moscow, the Soviet Union thought it could engage in gambling. It was far from expecting Kennedy to issue this clear warning to Moscow: “It shall be the policy of this nation to regard any nuclear missile launched from Cuba against any nation in the Western Hemisphere as an attack by the Soviet Union on the United States requiring a full retaliatory response upon the Soviet Union.”¹¹² As the crisis developed, the quality of the American team was recognized by the Soviet leadership, but that initial perceived lack of credibility of Kennedy was part of the Soviet equation. The importance of leadership also means that documents—for example, the conclusion of agreements to prevent nuclear war—will be less significant than determined diplomacy during a crisis.¹¹³ It finally means that it is dangerous to disregard the importance of personalities in the nuclear decision-making process.

¹¹⁰ See Albert Wohlstetter, Fred S. Hoffman, and Henry S. Rowen, *Protecting U.S. Power to Strike Back in the 1950s and the 1960s*, Santa Monica, Calif.: RAND Corporation, 1956, not available to the general public, p. 5: “The criterion of matching the Russians plane for plane, or exceeding them, is, in the strict sense, irrelevant to the problem of deterrence.”

¹¹¹ This does not mean at all that the United States and the USSR did not consider superiority to be a most important element in their nuclear relationship.

¹¹² Quoted in Graham Allison, “Deterring Kim Jong Il,” *Washington Post*, October 27, 2006, p. A23.

¹¹³ The 1973 Agreement on the Prevention of Nuclear War, concluded only some months before the 1973 crisis, played no other role in October than to allow the United States to remind the Soviet Union that it risked violating its provisions.

Deterrence Is About Behavior in Daily Life, Not in Brief Crises

While they are inherently unpredictable, crises should be expected as part of strategic relations among competitors or adversaries. Lack of preparation cannot be remedied by improvisation when difficulties arise. A reputation for firmness on principles, good judgment, and reliability does more to deter than sophisticated nuclear warheads and missiles. Once corroded by doubt, credibility is difficult to restore. As a result, subsequent crises are likely to be all the more difficult to manage, and more damaging, too. This lesson deserves some serious thought from political leadership worldwide. Some leaders who consider themselves fit and ready may discover they are badly mistaken and lack knowledge and imagination as well as steady nerves.

The Ability to Take Risks Is Part of Any Success Story

Compromises can be fine, but their substance and the way in which they are reached should avoid encouraging future challenges: A series of concessions, for example, could send a message of weakness and lead to military confrontations. The policy of deterrence (or crisis management backed by nuclear forces) was defended in these terms by John Foster Dulles in 1956, after the Korean War and the first Taiwan Strait crisis: “You have to take chances for peace, just as you take chances for war. Some say we were brought to the verge of war. Of course we were brought to the verge of war. The ability to get to the verge without getting into the war is the necessary art.”¹¹⁴ Compromises, concessions, and negotiations are not necessarily recipes for peace. In some circumstances, they can lead to war.

Different Approaches to “Rationality” Should Be Acknowledged

This is a clear lesson from at least the 1973 Yom Kippur War. As Henry Kissinger later recognized, “Our definition of rationality did not take seriously the notion of Egypt and Syria starting an unwinnable war to restore self respect.”¹¹⁵ Actually, in Anwar Sadat’s calculation, restoring Egyptian self-respect had a very high value, and this perception was correct, particularly if he had in mind a future peace treaty with Israel. On the Israeli side, the idea that Egypt would start a war to restore self-respect without a respectable air force made no sense. This is a good example of dangerous misperceptions leading to war. Since the end of the Cold War, worse examples (i.e., more difficult to explain in rational terms) have occurred: Saddam Hussein started one unwinnable war in 1991 and provoked a devastating military invasion of his territory in 2003—resulting in the end of both his regime and his own life—while Slobodan Milosevic started another unwinnable war in 1999. As strategic thinkers have acknowledged since antiquity, in matters of war and peace, passions are at least as powerful as reason and calculation.

¹¹⁴ Quoted in Albert Carnesale, et al., *Living with Nuclear Weapons*, Cambridge, Mass.: Harvard University Press, 1983, p. 254.

¹¹⁵ Kissinger, 1982, p. 465.

Prudence Should Prevent Unnecessary Risk-Taking

This is a mere corollary to the previous point. The postwar period shows a reckless pattern, with Washington issuing nuclear threats for issues that did not warrant them (Greece in 1946 is a good example). Short of extreme circumstances, it is absurd to provoke opponents with nuclear coercion and blackmail. The 1970 and 1973 nuclear crises may appear to future historians not as a skillful political use of nuclear weapons by Washington, but rather as a reckless manipulation of risk by Richard Nixon.¹¹⁶ Today, Western powers may find themselves on the opposite side of the spectrum, finding it difficult to even imagine under which circumstances it would be necessary and indeed wise to issue a nuclear threat, while other nuclear weapon states assert blunt nuclear doctrines matched by military maneuvers. One example is the September 2009 Russo-Belarusian military exercises simulating nuclear use against Poland: unnecessary and irresponsible. They should have been denounced as such by Washington, European capitals, and NATO. They have not been, even after Poland's request. Why?

Ignorance Is Blissful—but Dangerous

“The less we knew, the more hopeful we were.”¹¹⁷ Such was the judgment of one of the most brilliant nuclear strategists of the Cold War, Albert Wohlstetter, whose ideas greatly influenced nuclear strategy in the 1960s. If he was right, then this is one of the major lessons to be remembered, for the extinction of knowledge in the information age is such that many current leaders would have difficulty naming more than two past nuclear crises (probably Berlin and Cuba). They would probably have forgotten the relationship between those two crises and would be seriously challenged if asked about the main dangers encountered by the Soviets and the Americans at the time. Knowledge often brings with it undue pessimism, but it also brings indispensable prudence, notably in the case of ambiguous intelligence. Learning about past crises is a good defense against wishful thinking.

Subtleties of Deterrence Theory Play Little Role in Times of Crisis

The Soviets did not accept the concept that nuclear forces had a deterrence role before the late 1960s, and Soviet studies on deterrence never reached the level of sophistication of their American counterparts. But in the United States, where deterrence was part of the nuclear doctrine much earlier, it seems clear that politicians never followed a script during crises. As James Schlesinger once said, “Doctrines control the minds of men only

¹¹⁶ The 1973 Middle East crisis is well documented. The best account may be the one provided by Barry Blechman and Douglas Hart in “The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis,” *International Security*, Vol. 7, No. 1, Summer 1982. As far as 1970 is concerned, knowing that Jordan might trigger a crisis with Moscow, Nixon did not hesitate to open a second front because of constructions in Cuba, a move that even U.S. intelligence sources at the time said they could not understand.

¹¹⁷ Albert Wohlstetter, *The Delicate Balance of Terror*, Santa Monica, Calif.: RAND Corporation, P-1472, November 6, 1958.

in periods of non-emergency. They do not necessarily control the minds of men during periods of emergency. In the moment of truth, when the possibility of major devastation occurs, one is likely to discover sudden changes in doctrine.”¹¹⁸ In particular, in actual crises political leaders did not calculate probability, as certain theories said they should. President Kennedy, for example, said he thought the chances of war during the Cuban missile crisis were at least one in three, a belief that placed an incredibly high value on prevailing, according to Robert Jervis¹¹⁹ (and to any sensible mind, for that matter). But the important point is not whether the President was fully aware of what the theory of probability actually contained. It is that he prevailed. Game theory, Kahn’s escalation steps, and the like were not part of the picture in the Situation Room.

Strategic Thinkers Nonetheless Had a Far-Reaching Effect on Defense Policy

The remarkable work done over decades on nuclear strategy played a major role in defining Western policy. It was part of an intellectual effort to understand the new world arising from the nuclear era, and it tried to answer the most difficult questions. The work was *necessary*, and it was most probably an important element that reduced the danger of a nuclear war. Those who cared most about details (like Albert Wohlstetter) as opposed to general concepts were the most important in building the intellectual foundations of the nuclear age. Without careful analysis of missile accuracy, missile range, bomb yields, strategic bases, and targeting, there was no possibility of making a serious contribution to defense policy. Survive an attack and strike back, the two main elements of deterrence, were anything but automatic and easy. China understands this today: It protects its forces and is building a credible second-strike capability.

On the Whole, Blatant Moves or Threats, When Credible, Were More Successful Than Uncertainty

Eisenhower and Kennedy were more effective than Nixon. Uncertainty may instill caution in the opponent’s mind and lead him to ponder decisions. Blatant threats, if calibrated and credible, oblige the opponent to take sides in a gamble known to be highly dangerous. Experience shows that retreat is likely. However, it is debatable whether such a consequence would always be the case, notably in the 21st century: Blatant threats can enrage incautious minds or leaders with no experience of major wars. It is now clear from declassified documents that Soviet leaders and the Soviet military high command both understood the devastating consequences of nuclear war and, on the whole, thought the use of nuclear weapons should be avoided. Who can be sure this belief is present in the same way in Ahmadinejad’s or Kim Jong Un’s mind?

¹¹⁸ U.S. Senate Committee on Foreign Relations, *Nuclear Weapons and Foreign Policy Hearings*, Washington, D.C.: U.S. Government Printing Office, 1974, p. 160.

¹¹⁹ See Robert Jervis, “Deterrence Theory Revisited,” *World Politics*, Vol. 31, No. 2, 1979, pp. 289–324.

Participants Are Never in Full Control of Events

Clausewitz made clear that such is the case in wartime. It is also true in crises, particularly nuclear crises, because friction can have such disastrous effects. Friction can take different forms: deployed nuclear weapons at locations unknown to the adversary, wise or reckless reaction to a blockade, orders ignored or not received on time. Even small events (a message sent and not received, for example) may derail the process of deterrence in a time of crisis. Misunderstanding is also *always* part of the equation, because human beings tend to misunderstand what is said to them in situations of extreme tension. One ought to try limiting its range and frequency but should be prepared for its occurrence.

The Past Contains Significant Experience Related to Asia¹²⁰

This is indeed truer than we might think, since *eight* crises took place there, leaving aside the Middle East (also called West Asia). Whatever the differences between the Asia of the Cold War and the Asia of today, the crises concerned should be analyzed again with care: They may provide food for thought in the so-called Asian century, notably with regard to Taiwan.¹²¹ The 1969 Soviet-Chinese crisis contains food for thought in more than one area: First, it shows the ability of a nascent nuclear power to embarrass an established nuclear power. Second, it underlines a rather daring Chinese behavior that contrasts sharply with Soviet behavior after the Cuban missile crisis.¹²² Third, it includes a Soviet-American exchange that should be remembered: When asked by American diplomats whether Chinese nuclear capability could ever come

¹²⁰ China presents itself as the country most frequently threatened by nuclear attack. A senior PLA colonel, Yao Yunzhu, describes this threat as follows:

During the Korean War, General MacArthur urged the Truman administration to drop atom bombs on China. During the French-Vietnamese War, President Truman and British Prime Minister Churchill consulted on several occasions, agreeing that the Allies would support U.S. use of atom bombs on China in case the Chinese intervened on the side of Vietnamese troops. The Eisenhower administration threatened to use nuclear weapons against key areas in China (including Beijing) if it launched another offensive in 1953 during the Korean War. The Taiwan Strait crisis of 1958 once again saw China threatened by U.S. nuclear weapons; top Soviet military leaders considered launching a preemptive strike against China with a "limited number of nuclear weapons" during the Sino-Soviet border clash in 1969.

This presentation may be disputed, but this is how it is perceived by the PLA. See Yao Yunzhu, "China's Perspective on Nuclear Deterrence," *Air and Space Power Journal*, Vol. 24, No. 1, Spring 2010.

¹²¹ The nuclear crises listed in this chapter do not cover the various instances in which Washington confronted the Taiwanese government over its secret nuclear activities. The confrontations took place in 1976, 1977, 1978, and 1988. The problem was one of a vulnerable ally showing the ambition to develop nuclear weapons as an insurance policy.

¹²² As a matter of fact, Mao, who wanted to teach Moscow "a lesson," badly miscalculated. Beijing had no intention to risk a wider conflict with the Soviet Union, but only to fight a limited border conflict. The understanding in Moscow was totally different: a reckless and useless challenge that could not be left unpunished. For the Soviets, a Chinese attack under such unfavorable balance of power meant a very dangerous nuclear adversary in the future.

close to that of the Soviet Union, the Soviets answered that in the future this capability could become a serious threat to the Soviet Union. They reminded the oblivious Americans that there was a time when the United States doubted the ability of the Soviet Union to catch up with it in the nuclear field. Washington, it seems, still doubts the ability of China to seriously challenge the United States with nuclear weapons. This is a dangerous mistake. And fourth, the 1969 crisis yields an interesting question (if not a clear lesson): Had a final agreement been achieved on the Sino-Soviet border in 1969 (*as is now the case*), and had this been accompanied by an improvement in the bilateral relationship between Moscow and Beijing (*as is also now the case*), would the U.S. freedom of maneuver have been considered narrowed?¹²³

Finally, it remains true that “we live in a world where emergencies are always possible, and our survival may depend upon our capacity to meet emergencies. Let us pray we shall always have this capacity.”¹²⁴ Do we still have this capacity?

¹²³ The main difficulty with drawing definitive conclusions about these cases is not the relatively small number of crises: They are still more numerous than most nuclear experts would have thought, they are related to different regions of the world, and they contain a significant diversity of scenarios. The lack of available information on the Russian and Chinese sides has long appeared more embarrassing, even though Eastern Europe’s archives have shed some light on the Soviet management of the crises. Post–Cold War interviews with former Soviet officials, published in September 2009 by the National Security Archive, shed new light on the behavior of at least one of the two nations and have allowed the two editors, William Burr and Svetlana Savranskaya, to explore a variety of topics, including (1) the overestimation of Soviet aggressiveness, (2) the ability of the Soviet leadership to mislead U.S. decision makers about their intentions, (3) the misunderstanding in Washington of the Soviet decision-making process, (4) the Soviet willingness to strive for nuclear superiority all along, (5) the lack of Soviet interest in environmental consequences, (6) the Soviet skepticism concerning limited nuclear war, and (7) the sharp decline of the Soviet leadership during the Brezhnev period. William Burr and Svetlana Savranskaya, eds., “Previously Classified Interviews with Former Soviet Officials Reveal U.S. Strategic Intelligence Failure over Decades,” September 11, 2009.

¹²⁴ Dulles, 1954.

The Age of Small Powers

What in the name of God is strategic superiority?

—Henry Kissinger, 1974¹

Henry Kissinger reportedly regretted posing this question at a press conference following the conclusion of the SALT agreement. He explained later that he was tired and somehow lost his temper. An opponent like the Soviet Union, he acknowledged, would certainly know what to do with strategic superiority. Be that as it may, the statement, perhaps questionable during the Cold War, appears highly relevant today, in a world of asymmetric force and asymmetric attacks. Strategic superiority is all the more questioned at the beginning of the 21st century as Western nations appear to be among the first to doubt the importance of power in general and military power in particular.

In sharp contrast with the 20th century, the 21st century started as the age of small powers. This is partly because the post–Cold War world encompasses approximately 184 states—a record—and partly because some small states appear to be dangerously empowered: North Korea, Serbia, Iraq, Afghanistan, Iran, and Syria fell or still fall into this category. This does not mean that the century will end with the same denomination, since great powers may make a comeback after an interlude. But it is striking to witness the time, energy, and effort devoted in the 1990s to the Balkans or today to nations like Iran, Syria, and North Korea. It is also astonishing to consider the challenges those nations can inflict on regional and international security with their ballistic missile WMD programs—as well as, increasingly and more discreetly, with their cyber capabilities.² Equally, the attention given in the media to any statement issued in Tehran or in Pyongyang looks disproportionate. Obviously, small states can achieve a high level of international involvement and a high potential for global disturbance. Their smallness is somehow compensated for with international linkages,

¹ Quoted in Kissinger, 1982, p. 1175.

² North Korea is not only rumored to run a hacking program; it is suspected to have launched a widespread computer attack on U.S. government agencies and a massive cyberattack on Seoul government agencies, banks, and businesses in July 2009. Iran, for its part, reportedly attacked a number of Israel's government websites during the 2006 Lebanon War and again during Operation Cast Lead in Gaza in 2009.

illicit trafficking, clandestine nuclear programs, and repeated challenges to the current world order.

Even leaving aside the tricky problems posed by nonstate actors,³ which have demonstrated since September 2001 their ability to pose more than minor tactical threats to big powers (this would become far clearer in a case of nuclear terrorism), analysts acknowledge that the extraordinary situation originated in what is now called asymmetric strategies from small states. The leverage provided to states—otherwise unremarkable for their achievements—by their acquisition of antiaccess technologies and WMD programs is already a major regional problem in the Middle East and in East Asia, where neighbors anticipate the advent of new nuclear powers. Such acquisition could also complicate Western power projection whenever needed. And finally, the fear of clandestine programs in additional nations may trigger an unwelcome chain reaction. The two regions mentioned above are not easy to manage under current circumstances and risk becoming completely unmanageable with multiple nuclear centers.

Taking into account those commonly accepted comments, the poor handling of crises involving aspirant nuclear states is a matter of concern in and of itself. Is it due to lack of imagination and lack of medium-term vision? Is it power paralysis due to lack of domestic as well as international consensus? Or is it simply a wish to look the other way, hoping that the problem will simply disappear with time? Whatever the answer, the situation is even more frustrating to those who believe that great powers may again enter into some kind of confrontation in the future. If major powers cannot agree today on their common interest in preventing the dissemination of nuclear weapons and ballistic missiles, first, how will they address their possible use or threat to use if and when such a situation arises, and second, how will secondary players be used by bigger powers during their own possible future confrontation?

If some permanent members of the U.N. Security Council protect Iran and North Korea and cooperate with them, can the relationship among the five permanent members (the P5) be stable in the coming decades? China, for example, has proliferated nuclear and missile technologies to undermine Western interests, creating secondary proliferation that it no longer controls (the A. Q. Khan network is a fine example) and that may have tragic consequences in South Asia, East Asia, and the Middle East. As the United States and its allies prove unable to stop North Korea or Iran from acquiring “unacceptable” nuclear capability, what does that say about U.S. deterrence?⁴ Inconsistent policies and lack of credibility on nuclear deterrence are certainly not identical, but they are not separate issues, either. How America will deal with a serious

³ The American literature on this subject is qualitatively excellent and quantitatively large. Graham Allison’s book on the subject (*Nuclear Terrorism: The Ultimate Preventable Catastrophe*, New York: Henry Holt, 2005) may be insuperable. This is one reason nuclear terrorism is given little space in this book.

⁴ Japan and the Gulf countries have this question in mind and may someday draw conclusions that are unwelcome in Washington.

crisis involving more powerful nations in the future is another question, already present in the minds of most East Asian allies of the United States. The strategic significance of nuclear proliferation lies there.

The 2010 U.S. NPR acknowledges the problem posed by nuclear proliferation, but hardly in those terms:

We must give top priority to discouraging additional countries from acquiring nuclear weapons capabilities and stopping terrorist groups from acquiring nuclear bombs or the materials to build them. At the same time, we must continue to maintain stable strategic relationships with Russia and China.⁵

The connection between nuclear proliferation and nuclear terrorism is clear in the document and could have led to the adoption of a tougher policy—i.e., early sanctions, deadlines respected, crossed red lines met with punishment, no acceptance of gray zones for the implementation of demands, and (explicit or covert) strategy if diplomacy fails or if acts of war are committed—vis-à-vis Iran and North Korea, both officially linked to terrorist activities and organizations.⁶ Actually, strong sanctions against Tehran were only adopted in 2010, while military maneuvers were the only answer to North Korea's acts of war in 2010.

The potential connection between limits to nuclear nonproliferation policy and the attitudes of both Russia and China is left out of the NPR. As expressed previously, a major problem undermining strategic stability today is the unwillingness of Russia and China to exert serious pressure on proliferators, whether at the U.N. Security Council or on an ad hoc basis.⁷ The reason is partly related to Russian and Chinese interests (arms deals, energy, and trade). It is *also* related to the temptation of weakening America in the Middle East and in East Asia by demonstrating to U.S. allies its inability to solve crucial regional issues. And finally, it is sometimes a deliberate policy to use proxies to confront common enemies—in the case of China, such is the explanation of its nuclear aid to Pakistan extending back to the 1960s.

The new American nuclear policy is described as part of a broader effort to edge the world toward making nuclear weapons obsolete and to create incentives for countries to give up any nuclear ambitions. At the core of this vision lies the idea that the United States sets the example. For whom should it set it? Would Iran, Pakistan, Syria, and North Korea be encouraged to renounce nuclear ambitions because of the American nuclear policy or the New Start Treaty? The NPR and nuclear reductions

⁵ U.S. Department of Defense (DOD), *Nuclear Posture Review Report*, April 2010b.

⁶ This point was made on a bilateral basis by French President Nicolas Sarkozy during the April 2010 Washington Summit Meeting on Nuclear Security, Washington, D.C., April 12–13, 2010.

⁷ Granted, both countries have agreed to all U.N. Security Council resolutions on Iran and North Korea, but only after long negotiations aimed at calming them down. In addition, even when the resolutions are approved, their implementation is poor.

between the United States and Russia have little impact on nuclear proliferation. India, Pakistan, and North Korea tested nuclear weapons after Start I and II. The same states are developing with gusto precisely the nuclear delivery systems that the Intermediate-Range Nuclear Forces (INF) Treaty banned. Iran's nuclear program acquired a new impetus in the mid-1990s, and Syria built a clandestine nuclear program (including a nuclear reactor destroyed by Israel in 2007) during the same period. This does not show a clear linkage between arms control and nonproliferation. What it does show is the relevance of other factors such as regional tension, technical readiness to test, political pressure to assert status, and in some cases open defiance.

What was generally absent during the Cold War was the recognition of strategic problems in the developing countries and more generally North/South strategic issues *per se*. Thinkers were absorbed, even consumed, by East-West issues. The whole world was viewed through this lens, even when a different dynamic was at work (for example, the 1980–1988 Iran-Iraq war, which was independent from the bipolar confrontation). When the East-West issues vanished—or, rather, undertook dramatic changes—many analysts considered an era of peace to be the likely result. Then came the “return” of the South and of small or medium-sized states looking for recognition, power, and sometimes an open challenge to the existing international system (North Korea, Iran, and Venezuela, but also Brazil and Turkey, are telling examples). This phenomenon was a direct result of the end of the East-West confrontation. New space was available for small or developing states aspiring to become part of the big geopolitical game in the 21st century, or at least aspiring to gain more influence internationally.

In the nuclear realm, the contemporary strategic situation seldom factored into the speculation of past nuclear thinkers. The Iran-Iraq war could have been a wake-up call with the visibility it gave to ballistic missiles during the “war of the cities” (it was indeed a wake-up call for Israel, which started to think seriously about missile defense systems). But the vision of a world where small states would become able to threaten the stability of the international system as a whole was present in the minds of some nuclear experts, notably Herman Kahn, as early as 1965.⁸

In a book that remains famous for other characteristics, Herman Kahn writes the following:

It is difficult for some in the United States, which possesses a high grade nuclear arsenal . . . to believe today in the threat of small nation strike forces or in the power of future Nth countries. This is short-sighted in the extreme. The ultimate effect of the proliferation of nuclear weapons, if it were coupled with a tradition of nuclear use, would be, unless the Soviets and the Americans made major efforts, to reduce the United States and the Soviet Union from the rank of superpowers

⁸ Morton Halperin makes a similar case, pointing to the dangers of nuclear proliferation in a book also published in 1965 (*China and the Bomb*, New York: Frederik A. Praeger) and then in *China and Nuclear Proliferation* (University of Chicago Center for Policy Study, 1966).

to that of chiefs among “equals” in a multisided game of gingerly diplomacy and strategic war. While present Nth country arsenals may be crude, they are not likely to remain so: cheap, small fusion weapons . . . are only a case in point, very likely attainable within a decade or two. . . . Thus in a world where nuclear weapons are used, the United States will have surrendered its traditional advantages and will face the prospect of fighting wars according to the rules of a game which a dozen powers or more can learn to play with roughly equal effect and skill.⁹

Herman Kahn’s thinking is focused on the common interest of the United States and the USSR to keep deterrence working in order to avoid a world of multiple players that would degrade the status of the two superpowers. A more important idea in the book than the so-called status, though, is survival itself. Once new countries acquire nuclear weapons, they may not only challenge great powers but also adopt “new rules of the game,” leaving aside the complex doctrine of deterrence for *simpler doctrines of use*. In this respect, the numerous academic and diplomatic attacks against nuclear deterrence that followed the Cold War, at a time when nuclear proliferation began to be a major concern,¹⁰ appear dangerous. They encourage a trend in countries seeking to acquire nuclear weapons to perceive nuclear deterrence not as a responsible doctrine but as a mere justification to keep nuclear weapons in nuclear weapon states. They also tend to reduce the difference between nuclear weapons (whose use should be prevented) and conventional weapons (which are used whenever necessary), something the Cold War took decades to put in place between the two superpowers.

This chapter devotes the core of its analysis to two states, Iran and North Korea, which currently stand as the main nuclear troublemakers, in order to show how they have acquired this power, regularly testing the major states. Those states were expected to block their dangerous ambition. But they let them act as the injured parties, ratcheting up the stakes, without providing the only sensible response—“Whatever you do to us, we can do far worse”—with a large range of capabilities, military and nonmilitary. Offense dominance is not supposed to be limited to crises or, worse, to open conflict.

Pakistan and Syria are also mentioned in this chapter. Within some years, a number of other states will likely have to be included in the discussion as well.

Iran

Iran may be the subject of frequent *urgent decisions* (e.g., interception or sabotage of sensitive acquisitions abroad, adoption of U.N. Security Council resolutions, containment of its regional nuisance capability, and late support of the democratic movement), but

⁹ Kahn, 1968, p. 132.

¹⁰ The first serious wake-up call after the demise of the Soviet Union was Iraq in the aftermath of Desert Storm, which prompted the creation of the U.N. Special Commission (UNSCOM) at U.N. headquarters.

the main issue with Iran is that it represents a *long-term challenge*. In an area both prone to tension or even conflict and vital to international well-being, the appearance of a new nuclear power could challenge whatever stability still remains there. Up to 2005, Western nations, waiting and hoping for liberalization of the Islamic Republic,¹¹ seemed satisfied with their repeated errors in judgment: The belief that democracy would finally become a reality in Iran was never warranted by facts and only reflected their wishes, but it was somehow able to endure, in part because Iranian society was indeed—and is still—expecting political reforms.¹²

With the June 2005 election of Mahmoud Ahmadinejad, however, it became clear that sooner or later it would be a question of bow or break. All concerned chose first to bow, even after the repeated statements concerning the destruction of Israel. When the rigged elections of June 2009 provided another choice—i.e., to support the Iranian people and target the regime—the support to the Green Movement was minimal in the West, and a new offer was made to Tehran. When it was eventually rejected—at a time when a clandestine enrichment facility was uncovered in Fordow—it took eight months to adopt new sanctions. In June 2010 (the resolution was tabled at the end of the NPT Review Conference and adopted shortly after), there was still no blacklisting of Iran's central bank, no sanctions against Iran's energy sector, and no nonconsensual inspections on the high seas. The Revolutionary Guards were not blacklisted, and Russia made sure that no individual linked to the Bushehr nuclear power plant project was, either (unilateral American and European sanctions were later adopted to fill some of those important gaps).

Iran's internal evolution has been more dramatic than Tehran's international treatment: After the post-election political crisis, many of those who disagreed with the Green Movement became more radical, some even envisioning a "Greater Iran" that would rule over the entire Middle East.¹³ President Ahmadinejad himself, with his usual sense of moderation, said he expected the next government to be "ten times more revolutionary."¹⁴ Already, Iran's strategic presence in the Middle East (in Syria, Lebanon, and Gaza) may place it beyond containment—in that it has multiple possible ways to unleash unrest beyond its own territory—and even beyond deterrence, taking into account its radical ideology combined with its increasing disbelief concerning the validity and credibility of Western threats.

In the 2010 NPR the United States identified nuclear proliferation and nuclear terrorism as the number one threat, and Iran actually provides both problems at once.

¹¹ It is difficult to disagree with Secretary of Defense Robert Gates, who said in an interview: "I have been in this search for the elusive Iranian moderate for 30 years. I'm still looking." See Robert M. Gates, interview by David Gregory, *Meet the Press*, NBC, March 1, 2009. Mir-Hossein Mousavi himself can hardly be presented as such.

¹² As demonstrated after the 2009 presidential elections and the Green Movement.

¹³ Ayatollah Mohammad Bagher Kharrazi, for example, is a radical cleric leading the Party of God.

¹⁴ PBS Tehran Bureau, "Selected Headlines," May 13, 2010.

Without an Iranian bomb (or regime change in Pakistan), it is hard to envisage a nuclear power daring to transfer a device to a nonstate actor. With an Iranian bomb, no such assurance would stand. This is not about a possible loophole in the security of nuclear material (like those dealt with during the April 2010 Washington Summit). It is about Tehran's ties to Hezbollah, its own creature. The hope to deter or contain Iran in a classical sense reveals a misunderstanding of the situation the world will face in case of Iran's nuclear acquisition.

Moreover, Iranian ballistic missile capabilities continue to grow. The Sejil-2,¹⁵ an advanced two-stage surface-to-surface missile with a range of 2,200 km, was tested successfully in 2009 and will reportedly be ready for deployment in 2012.¹⁶ In February 2009, Iran put a homebuilt satellite, the Omid, into orbit using a two-stage rocket,¹⁷ a step in the direction of long-range ballistic missiles. Iran's nuclear and ballistic missile programs are clearly connected. The International Atomic Energy Agency (IAEA) stressed in February 2010 that it had collected information about "activities related to the development of a nuclear payload for a missile."¹⁸ Moreover, there is no record of any nation developing a missile such as the Sejil-2 without a nuclear capability. Today, Iran's ballistic missiles are already capable of reaching the Arab Gulf states, Turkey, and Israel. Iran's ability to coerce and threaten states beyond its immediate neighborhood is also increasing. To respond with more missile defenses is at least partially useful but may prove insufficient.

As stated above, Iran can count on the ambiguous policy of two permanent members of the U.N. Security Council, Russia and China, even though both nations voted for the new resolution on June 9, 2010 (U.N. Security Council Resolution 1929). The text builds on previous U.N. resolutions. What is notably absent from it is any sanction concerning energy, any binding restriction on transactions with Iran's central bank, and any prohibition of Russian S-300 sales to Iran,¹⁹ as well as the entity "Pasdaran" in the Annex. All of this can be read as necessary concessions made by Washington to both Russia and China. Moscow²⁰ and—even more—Beijing have generally prevented

¹⁵ Test-fired in November 2008. Additional (reportedly successful) tests took place in May, September, and December 2009.

¹⁶ This may be too pessimistic, but the difference is unimportant since the technology is mastered.

¹⁷ The launch was scheduled to coincide with the thirtieth anniversary of the 1979 Islamic Revolution.

¹⁸ IAEA, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran*, Report by the Director General, November 8, 2011, p. 7.

¹⁹ The S-300 missiles, highly effective against aircraft and against some missiles, reportedly were to be used to defend Iranian nuclear facilities in case of an attack on them. The bilateral Iran-Russia deal was completed in December 2007, and it was worth an estimated \$800 million. The missiles were originally supposed to be delivered in March 2009 and operational by June 2009. In 2007, Russia supplied Iran with 30 Tor-M1 anti-aircraft missile systems. Moscow finally decided unilaterally not to deliver the S-300 missiles to Tehran.

²⁰ Russia has conceded to the West's efforts to impose tougher U.N. sanctions but at the same time has renewed offers to boost its energy ties with Iran. In early May 2011 Russian Energy Minister Sergei Shmatko declared,

both the adoption of tough sanctions and the thorough implementation of agreed-upon sanctions. Some observers characterize Russia's approach as "schizophrenic," grown out of the conflict between its commercial and security interests, and Moscow does not recognize any Iranian ballistic missile threat.

The new 2010 U.N. sanctions were not serious enough (which is why they were supplemented by European and American sanctions soon afterward); Turkey and Brazil voted against them, and Lebanon abstained. While Lebanon's vote is understandable, and while Brazil may have been reacting to the failure of its recent "agreement" with Iran, Turkey poses a bigger problem. The fact that a treaty ally of the United States whose territory borders Iran could not be persuaded to cast a positive vote is worrisome. Turkey, a wing state of NATO during the Cold War, may have found with the end of the East-West confrontation the possibility of becoming a more important actor. It sees itself as a country at the center of continents. It may be seeking dominance in the Middle East at the expense of Egypt and Saudi Arabia but also of the United States. Its hope to be the big winner of the 2011 Arab revolts—whether or not delusional—is expressed openly.

Concerning Iran, the United States, notably after additional sanctions were decided by the European Union (EU) and the U.S. Congress in 2011, may still expect sanctions to "lead to the kind of good-faith negotiations that President Obama called for,"²¹ but whether it seriously believes this is doubtful. The notion that the current Iranian regime would ever negotiate in good faith looks far-fetched. The regime sees the West as being in decline, composed of "tyrant powers [who] belong to the past," in the words of Mahmoud Ahmadinejad.²² This is not the best recipe for starting negotiations in good faith. The sad truth is that political will is diminishing in the West: There is an "Iran fatigue" in Western capitals, and a mood of defeatism appears to have settled over the White House. A nuclear Iran may be said time and again to be unacceptable, but an air of resignation has taken hold in Washington, even though a nuclear chain reaction is anticipated in Saudi Arabia, Syria, Egypt, and Turkey. The November 2011 IAEA report to the Board of Governors provides significant details on the military dimension of the Iranian nuclear program.²³ Still, the incriminating text did not lead to any action at the U.N. Security Council. Washington and European capitals only adopted further unilateral sanctions.

"We are in favour of continuing cooperation with Iran in the energy sphere to the full extent, including in building light water reactors." Quoted in "Russia Says May Build Nuclear Power Plant in Syria," *International Business Times*, May 11, 2010.

²¹ Hillary Clinton, quoted in Daniel Dombey, "Clinton Raises Prospect of 'Regional Conflict' over Iran," *Financial Times*, April 19, 2010.

²² Quoted in Najmeh Bozorgmehr, "Iranian Leaders Praise Lula for Role as Mediator," *Financial Times*, May 16, 2010. This historic sentence was pronounced when the vague trilateral deal on low-enriched uranium (LEU) was concluded among Iran, Turkey, and Brazil on May 17, 2010.

²³ IAEA, 2011.

As for Egypt, where past undeclared nuclear activities have been investigated by the IAEA, some recent events are worrisome. Among them is the decision of the new foreign minister, Nabil El Araby, to reestablish diplomatic ties with Tehran after more than 30 years.²⁴ Although this may just be a signal to Washington that Cairo is now more independent, other reasons may have played a role. One is related to the very cause of the old diplomatic break, namely Anwar Sadat's assassination after the conclusion of the peace treaty with Israel. In this respect, Tel Aviv, even though there is little chance that its peace treaty with Cairo is seriously challenged, may have reason to be concerned. Another reason for the rapprochement may be the common assertion related to the right to peaceful uses of nuclear energy. Cairo has already been quite unhelpful in dealing with the Iranian nuclear program, and more difficulties should be expected at the next NPT meetings. With the restored diplomatic ties between Cairo and Tehran, there will be good reason to monitor nuclear activities in Egypt more closely as well.

Although the new rounds of international and national sanctions against Iran (in 2010 and 2011) were welcomed in Tel Aviv, Israeli officials are frustrated about the impossibility of getting clarity from Washington on where its red lines are and on what the U.S. plan is for preventing Iran from obtaining a nuclear device if sanctions fail.

Israel is not the only state to recognize that the United States is unwilling to either exert strong pressure or use force against Tehran. Iran believes that Washington has no cards to play and that it is facing major challenges in the Middle East beyond Iran, including the problem posed by corrupt and crumbling autocracies in Saudi Arabia, Yemen, and other states, fueling Islamic extremism and providing recruits to al Qaeda. The 2011 revolts in the Middle East have taken the West—Europe and America—by surprise. Diverse as the Arab nations are, all the upheavals show that popular demand for freedom, dignity, and a better life is real. What could follow the rule of the corrupt and crumbling autocracies, including in Egypt, is unclear, however, and a case-by-case approach to the different nations has been adopted, often according to the position of critical allies in the region. The effect on Tehran could be important if Syria is obliged to undertake political reforms, but the pressure on Damascus has been minimal despite a brutal and bloody repression that has been going on for months.

Another possible scenario is that Tehran will benefit from the situation, convinced that the Gulf States as well as the United States will eventually be weakened by the political crises in the region. The timid response of the Gulf States to the Iranian nuclear challenge has been due to a mixture of continued reliance on the U.S. security umbrella and diplomatic engagement with Iran. Only unrest in Bahrain woke up Saudi Arabia, Riyadh fearing any regime change favorable to Iran there. Armored Saudi vehicles were therefore sent to Manama, though there was no evidence that Tehran was behind the protests. A more decisive policy directly concerning Iran would appear more logical, since the center of power lies there. But this is not the Saudi policy so far.

²⁴ One has to admire the logic presented for the reestablishment of diplomatic ties: The Egyptian and Iranian people deserve mutual relations reflecting their civilization. Is Mahmoud Ahmadinejad a representative of the great Iranian civilization? Not even the Iranian people believe such a lie.

After having violated the NPT and rejected compromises and international offers, Tehran has warned Washington against attacking it, saying it could hit back by choking “the West’s throat” at a waterway crucial for global oil supplies (40 percent of the world’s trade oil leaves the Gulf region through the strategic straits). Iran no longer even tries to buy time with new diplomatic talks, as if the numerous vulnerabilities of the regime were not considered serious enough to put it in danger. To sum up, the only political change that could bring new thinking in Iran is a change in Syria.

If no major political change occurs in Iran in the coming years, there is still the long-standing question of a possible military strike in case sanctions fail. Whether Israel will eventually strike—as Jeffrey Goldberg believed when he wrote his article in 2010²⁵—or not (a more likely scenario for the moment) is a matter of discussion. The main point is elsewhere: If Iran acquires the bomb, the fault will lie not only in Russia’s and China’s double language, but in the inability of Washington—and the West more generally—to build international consensus since 2002 for an approach that could work (associating at an early stage diplomatic, economic, and military pressure), not one bound to fail. If Iran is allowed to write the nuclear rules for the 21st century, they are likely to be far more dangerous than those of the Cold War.

Tehran has never acknowledged its nuclear military ambition, but it has repeatedly threatened Israel with annihilation (which may be for political rather than military purposes). No one knows the substance of Iran’s nuclear doctrine or who is in charge of its nuclear planning or crisis management. And no one knows for sure the role that religious motives—less peripheral to politics than in most other states and not conducive to compromise—might play in Iran in a future nuclear crisis. But what is known is that Hezbollah and Hamas, armed with conventional missiles and good at successfully harassing their neighbors, may be used as proxies by Tehran in any serious crisis. What is also known is that in an increasingly divided, isolated, and paranoid regime, a miscalculation of the West’s will and capacity to resist rogue operations could suddenly bring the region to the brink of aggression. With such an adversary, good old Nikita Sergeyevich Khrushchev will be missed if an Iranian version of the Cuban missile crisis erupts. The North Korean narrative is an additional encouragement to Iran’s defiant mood, and its profile may appear even more reckless.²⁶

North Korea

Historians will wonder how a small nation unable to feed its own people was capable of threatening the only remaining superpower for more than 15 years (1993–2010), of building and launching at least 12 ballistic missiles and rockets between 2008 and

²⁵ See Jeffrey Goldberg, “The Point of No Return,” *The Atlantic*, Vol. 306, No. 2, September 2010.

²⁶ Actually, the two countries work together on ballistic missiles, on rocket launchpads, and, according to Japanese observers, on nuclear weapons as well.

2010, of conducting two nuclear weapon tests, of obtaining and selling sensitive technologies abroad, and, finally, of sinking a modern South Korean naval ship with a torpedo launched from a submarine (a clear act of war under international law that killed 46 sailors).²⁷ All this without being targeted with anything other than soft economic sanctions (strong ones are considered dangerous because of mercurial North Korean leaders) and increased military cooperation among the United States, South Korea, and Japan.²⁸ Any interception of missile tests or any military retaliation is thought to risk even worse responses from the North, which indeed has the capacity to strike Seoul but is no match for South Korean forces backed by Washington. Any lesser response will lead Pyongyang, which has been able to garner world attention only when it misbehaves, to conclude that it can lash out again and again without facing serious consequences.²⁹ The answer historians might get to their legitimate question (“How did North Korea gather so much power?”) lies partly in the terrifying weapons developed by this otherwise international dwarf, partly in the disguised protection provided by China, and partly in the West’s willingness to look the other way in the hope that things will eventually improve somehow. They won’t. The policy of the Obama administration toward North Korea is dubbed “strategic patience.” Whatever it means, it is being hard pressed and tested.

Pyongyang has long benefited from international skepticism regarding its ballistic and nuclear achievements. First, between 1985 (North Korea’s accession to the NPT under Soviet pressure because of suspicious nuclear activities) and 1992 (IAEA’s first inspection), only the United States and the Soviet Union had reason to be suspicious of what was going on in North Korea in Yongbyon. The rest of the world was dozing. Second, from 1992 to 2002, when Pyongyang began by calling its reprocessing plant a “radiochemical facility,” then refused special inspections in Yongbyon, and finally violated the bilateral agreement signed with the United States in 1994, there was no serious reaction.³⁰ There were still doubts about the real objective of the program.

²⁷ At 9:22 p.m. on March 26, 2010, the 1,200-ton South Korean corvette *Cheonan* was severed in two and sank in the waters off Baengnyeong Island. Forty-six crew members died and 58 were rescued. It was the worst South Korean naval disaster since 1974, when a navy landing ship capsized, killing 159 sailors. An international investigation was conducted by South Korea with assistance from the United States, Britain, and Sweden. The multinational report of investigation concluded that the *Cheonan* was sunk by a North Korean Yeono-class submarine firing a CHT-02D acoustic homing torpedo. On May 15, a ship dredging the site found propellers, motors, and the steering section of a CHT-02D torpedo that North Korea sells abroad.

²⁸ What was expected was stepping up intelligence collection, naval cooperation, and submarine detection, in addition to joint exercises.

²⁹ Such is also the opinion of Ralph Cossa, a well-respected Asian expert: “Assuming that Pyongyang is demonstrated to be culpable, turning the other cheek or a gentle slap on the wrist is sure to result in continued North Korean acts of aggression.” Ralph A. Cossa, “Choosing Appropriate Response,” *Korea Times*, May 4, 2010.

³⁰ The important year was 1993, when the Clinton administration had to decide whether it would allow North Korea to continue its work on the large reprocessing plant and refuse special inspections on two facilities targeted by the IAEA. Washington could then have made it clear that nonproliferation was a pressing American interest.

Third, from 2002 onward, the existence of a uranium program was called into question (even though Washington presented incontrovertible evidence regarding this program as early as 2002 and Pyongyang itself eventually acknowledged the fact). Fourth, in February 2010, when Pyongyang declared that it had “manufactured nuclear weapons” after two nuclear tests (2006 and 2009), some unanswered questions about the nuclear nature of these tests were sufficient to delay any response.

As a result, when it was found in violation of its NPT commitments, North Korea left the treaty in January 2003, prepared and executed its two tests, and launched No-Dong and Taepo-Dong missiles over the Sea of Japan—but it has paid no price for all of these provocations because of Washington’s belief that strategic patience will one day work,³¹ and because of China’s ambiguity regarding North Korea’s violations and challenges. Pyongyang is quietly preparing a third nuclear test that would improve North Korea’s ability to make nuclear weapons. There is no obstacle in sight to counter this endeavor.³² Pyongyang will soon be in a position to decide, after unprovoked attacks, that any response risks precipitating a nuclear conflict.³³ While the long-term U.S. strategy to prevent this from happening may seem inscrutable, the goal, at least, is clear: to prevent North Korea from threatening Japan with ballistic missile tests, from miniaturizing a nuclear weapon, and from continuing to export sensitive technology to all the possible adversaries of the West.³⁴

All of this is happening during a volatile time of leadership succession. The sinking of the *Cheonan* corvette in March 2010 and the unexpected shelling of a South Korean island in November 2010 may have been aimed at maintaining a grip on the military during the transition. It may also have been just another signal, after so many other similar moves, that the North Korean system needs tension (something Western diplomats still appear unfamiliar with). Should chaos erupt before Kim Jong Un solidifies his hold on power, there would be massive refugee flows and poorly secured WMD

³¹ The idea is reportedly that Pyongyang, plagued by political instability, food shortages, and a catastrophic economy, will eventually yield to American demands. Officials in Pyongyang love America’s strategic patience, since it allows them to produce more fissile material, build more weapons, and export more sensitive technologies.

³² Outside North Korea, nobody knows how many nuclear weapons are currently available (six? eight?) or whether they will actually work. But who would dare challenge Pyongyang on this point with an attack?

³³ Already in May 2010, when the results of the international investigation on the *Cheonan* catastrophe were published, Pyongyang declared that if South Korea made any move to retaliate, it would cancel a North-South nonaggression agreement and freeze all inter-Korean relations. It accused South Korea of creating a situation where war “may break out right now.”

³⁴ Intercepting the export of weapons and technologies banned by U.N. Security Council Resolution 1874 should be one of the first steps to be adopted. Next would be to deny Kim the means to pay his party officials and military and security forces.

programs.³⁵ China, South Korea, and the United States might then decide to dispatch troops to the North. China is unwilling to discuss the issue with South Korea and the United States, a position that could one day lead to confrontation on the ground. In addition, in such a scenario only China could prevent a peaceful and democratic reunification of the peninsula.

The nuclear entente between Iran seeking to acquire a bomb and North Korea ready to sell the ballistic missile capacity has been the subject of numerous comments, even though Tehran seems to have become autonomous in this area over the last few years, as illustrated by the appearance of the solid-fuel Sejil-2 ballistic missile. But the main problem may not be this bilateral entente, worrisome as it is. The problem is China's ambiguous policy of considering North Korea a problem that should be dealt with in Beijing and nowhere else.³⁶ Granted, thousands of North Koreans with links to the North Korean embassy in Tehran and Damascus do work in Iran and Syria (when Israel bombed the Al Kibar facility in Syria in 2007, for example, it was revealed that North Koreans were developing the site in cooperation with Damascus). But China's policy is considerably more perilous in the long term. Soon after Pyongyang sunk the *Cheonan*, Kim Jong Il went to Beijing to seek advice. There, he was received not as a pariah but as an interlocutor to prepare the strategy for the weeks to come. Beijing waited one month before sending any message to Seoul after the catastrophe, revealing where its sympathy lay. When the results of the international investigation were revealed,³⁷ Pyongyang called the investigation a "fabrication" and threatened "all-out war," while China was noncommittal, calling the incident only "very unfortunate" (an expression better suited to a diplomatic gaffe than the murder of 46 people) and urging "caution and restraint,"³⁸ something it would hardly contemplate if 46 Chinese sailors were killed during an attack by a third party (to replicate some of the intimately adversarial elements in the inter-Korean relationship, let's imagine Taiwan had sunk a Chinese navy vessel).

This episode should in principle force South Korea and the United States to make hard decisions, but will they? The sinking is an obvious failure of deterrence.³⁹ It is

³⁵ Securing WMD facilities and scientists would be a crucial goal in the event of a collapse of the Kim Jong Un regime.

³⁶ This was stated clearly by Chinese diplomats in New York in exactly these words in December 2010, after the unprovoked shelling of Yeonpyeong Island.

³⁷ As noted above, on May 15, propellers, motors, markings, and a steering section matching that of a CHT-02D torpedo that North Korea sells abroad were found by a South Korean ship dredging the site of the attack. The discovery was combined with intelligence indicating North Korean submarines were out of port during the attack.

³⁸ "A Guilty Verdict for North Korea: Their Number Is Up," *The Economist*, May 20, 2010.

³⁹ The attack shows that North Korea does not fear any U.S. or South Korean military retaliation. North Korean leaders only fear the people of Korea in the way Ali Khamenei fears the people of Iran.

escalation in full expectation of impunity. In principle, the response should be strong enough to restore deterrence in order to prevent any similar—or worse—action in the future. South Korean President Lee Myung-bak understands it: “If we once again tolerate North Korea’s blatant act of violence, then I believe that will not promote, but endanger, the peace and stability in the Korean Peninsula”; and Robert Gates, speaking at the same security conference in Singapore in June 2010, declared that “inaction would be an abdication of our responsibilities.”⁴⁰ Fine words. But what is going to be done beyond a U.N. Security Council presidential statement (not even a resolution) that does not even condemn North Korea as the perpetrator, because of China’s reluctance? U.S. allies in the region are watching. They will no doubt draw conclusions. The worst part of the response has been the call in some quarters (notably Beijing) for a restoration of the Six-Party Talks.⁴¹

The most negative outcome of the Six-Party Talks is not its lack of results but the elevation of China’s status by putting China in the leadership position in the nuclear talks. What is at stake is North Korea’s nuclear capability and, beyond that, “the very balance of power in North East Asia and whether or not the United States will be a Pacific power in the twenty-first century.”⁴² Some steps in the right direction would be (1) to obtain international condemnation, particularly from Beijing, of Pyongyang for the sinking of the South Korean corvette, (2) to reinforce U.S. military ties to South Korea and Japan and beef up their submarine capabilities, (3) to close the special economic Kaeson zone that essentially benefits the regime in Pyongyang, (4) to step up searches of North Korean vessels suspected of smuggling illegal goods, (5) to destroy any new missile involved in any further ballistic missile testing, and (6) to block all North Korean submarines at port before destroying them if necessary. If nothing else, that would focus North Korean and, more importantly, Chinese minds.

The United States should stop thinking that China is a U.S. ally in containing North Korea. North Korea is—contrary to Beijing’s statements, and even though the Chinese authorities do not control every move in Pyongyang—China’s puppet. If America tries to enlist China’s help against that very puppet, it is a hopeless endeavor. Beijing, openly committed to a nuclear-free peninsula, says the opposite of what it actually does: let Pyongyang off the hook.

⁴⁰ Robert M. Gates, “First Plenary Session: Strengthening Security Partnerships in the Asia-Pacific,” Shangri-La Dialogue (conference), 9th Annual Asia Security Summit, hosted by the International Institute for Strategic Studies, Singapore, June 5, 2010.

⁴¹ For some reason, nobody seriously questions the viability of the two-decades-old effort for denuclearization of North Korea and the relevance of the existing diplomatic framework to achieve this goal. Since 2009, Pyongyang has overfilled the cup of patience for everybody but China.

⁴² Balbina Hwang, “China’s Proliferation and Its Role in the North Korea Nuclear Crisis,” Testimony before the US-China Economic and Security Review Commission, Washington, D.C., May 27, 2005.

The gravity of current allegations against North Korea at home and abroad,⁴³ including regular exchanges of ballistic missile technology with Iran through China,⁴⁴ have made the relaxed U.S. attitude toward Beijing awkward until very recently.⁴⁵ While in China in May 2010, Hillary Clinton reportedly sought “to avoid open disagreements on North Korea, exchange rates and other thorny issues that divide them.”⁴⁶ The result of this policy might simply be that Japan, South Korea, and/or Taiwan will aspire to nuclear status. Who could blame them?

Pakistan

Pakistan may be a nation of 182 million people, but its importance on the international stage remains limited. The main reasons Islamabad attracts the attention of so many experts are related to its ranking among the ten most dysfunctional states in the world, its chronic political instability, its growing popular opposition to the West, its ambiguous relationship to terrorist organizations, and, last but not least, the possibility that its strategic nuclear assets could be either obtained by those terrorists or even used by radical elements of some future Pakistani government.

Islamabad has tried repeatedly in the past decade to reassure the world on this point, giving Washington—and some European powers—information related to command and control of the Pakistani arsenal as well as safety and security procedures (U.S. intelligence operations have reportedly been carried out as well to get more precise information on Pakistan’s nuclear weapons). However, governments and observers are still concerned about the security of the country’s arsenal, notably if political instability persists. Even former Prime Minister Benazir Bhutto declared in November 2007 that she feared a weakening of the control over the nuclear arsenal because of political instability.⁴⁷

⁴³ For example, in March 2010, ties between North Korea and Myanmar were disclosed. Nobody wants to see another situation like that in Syria, where North Korea assisted Damascus with covertly constructing a reactor that had the ability to produce plutonium and that was destroyed in September 2007 by Israel.

⁴⁴ See Louis Charbonneau, “Exclusive: N. Korea, Iran Trade Missile Technology—U.N.,” Reuters, May 14, 2011. According to a May 2010 report submitted to the U.N. Security Council by a U.N. panel of experts, “prohibited ballistic missile-related items are suspected to have been transferred” between North Korea and Iran on a regular basis, with “trans-shipment through a neighbouring third country” (Charbonneau, 2011). According to several diplomats, that country is China, which is blocking the publication of the report.

⁴⁵ The July 2010 meeting of the Association of Southeast Asian Nations (ASEAN) Regional Forum (ARF) in Hanoi afforded Washington the opportunity to vigorously defend the freedom of the South China Sea, raising eyebrows in Beijing.

⁴⁶ Geoff Dyer, “China and US Avoid Thorny Topics in Effort to Steady Ties,” *Financial Times*, May 25, 2010, p. 12.

⁴⁷ CNN, “Pakistan in Crisis; Interview with Benazir Bhutto,” The Situation Room, November 5, 2007.

The United States has also been prudent in its assessment. For example, Admiral Michael Mullen declared on September 22, 2008:

To the best of my ability to understand it—and that is with some ability—the weapons there are secure. And that even in the change of government, the control of those weapons haven't changed. That said, they are their weapons. They are not my weapons. And there are limits to what I know. Certainly at a worst-case scenario with respect to Pakistan, I worry a great deal about those weapons falling into the hands of terrorists and either being proliferated or potentially used. And so, control of those, stability, stable control of those weapons is a key concern.⁴⁸

Some months later, General David Petraeus looked more confident: “With respect to the nuclear weapons and site that are controlled by Pakistan . . . we have confidence in their security procedures and elements and believe that the security of those sites is adequate.”⁴⁹ In the words of President Obama, American—and, more widely, world—interests in making sure that Pakistan is stable and that it does not end up “a nuclear-armed militant state” are “huge.”⁵⁰ The same is true of nuclear technology that could be sold off during a crisis. Interestingly, Russian Deputy Prime Minister Sergei Ivanov said in a television interview that he was “very much concerned” about the security of Pakistan’s arsenal.⁵¹

In addition, since Pakistan remains obsessed with India, the possibility of another conflict with New Delhi can hardly be excluded. Full-scale war was barely avoided in 1999 (Kargil) and in 2002 (after the attack on the Indian Parliament in December 2001). The policy of harassment using terrorist attacks against India (multiple attacks in Mumbai in 2008 being the latest dramatic development) can easily escalate. And then, the risk of incidents, miscalculations, or even nuclear use is scary: A number of Pakistani officials have declared that any Indian conventional attack after a “second Mumbai” would be met with nuclear capabilities. The justification is weird: Pakistani authorities do not control nonstate actors and terrorist organizations on Pakistan’s soil. If India ignores this, it will be at its own expense. Even if there is a significant bluff in such a statement (which would be a problem in and of itself), the readiness level of Pakistan’s nuclear forces will rise in the event of another major terrorist attack against India, as it always does when tensions rise with New Delhi. The risk of a nuclear exchange will then grow, particularly in the absence of good communication and at least minimal trust, always necessary for effective deterrence.

⁴⁸ Paul Kerr and Mary Beth Nikitin, *Pakistan’s Nuclear Weapons: Proliferation and Security Issues*, Washington, D.C.: Congressional Research Service, May 15, 2009, p. 1.

⁴⁹ Fox News, “Transcript: Gen. David Petraeus on ‘FNS,’” *Fox News Sunday with Chris Wallace*, May 10, 2009.

⁵⁰ Barack Obama, 100 Days Press Conference, April 29, 2009.

⁵¹ Lyubov Pronina and Ellen Pinchuk, “Russia ‘Concerned’ About Safety of Pakistan’s Nuclear Arsenal,” Bloomberg, March 24, 2009.

The most worrisome aspect of this scenario is the fact that observers consider another attack like Mumbai almost inevitable, along with the chain reaction that would follow. If they are right, the prevention of nuclear war in South Asia should begin with deterring subconventional attacks and adopting a firmer policy concerning both the Pakistani army and Pakistani intelligence services. A good example of what should not be done was provided just after the Mumbai terrorist attacks, when Richard Holbrooke and David Miliband went—separately—to New Delhi to ask India to make some concessions to Pakistan. Far from discouraging adventurism and creating caution in the minds of Pakistani leaders, this approach may have had the opposite effect: Not only was Pakistan not paying any price for the attack, but India was the one being pressured by both the United States and the United Kingdom. In 2011, there was a golden opportunity to clarify the situation with Pakistan: The fact that Osama bin Laden had been quietly settled in Abbottabad since 2005, with a level of confidence in his own security that only substantial official assurances could have provided, was an opportunity not to be missed. A policy clarification would also have sent a message Beijing could hardly have ignored—a significant collateral advantage. Why this was not done is not easy to understand, particularly in the context of the 2014 withdrawal of troops from Afghanistan. Does Washington want Islamabad to recover its influence on Kabul after the departure of Western soldiers?⁵²

Syria

When Israel bombed Syria's clandestine nuclear reactor in 2007, Arab capitals were unusually silent. And so was Damascus, stunned by the attack and busy preparing a credible explanation for the activities developed on the site. As a matter of fact, the only capital that immediately reacted and shouted was, interestingly enough, Pyongyang.⁵³ But afterward, well trained by obstructionist Iranian tactics, the Syrian regime successfully avoided a serious IAEA investigation. Only one inspection was allowed on Al Kibar, allowing the agency to get some information (even though Damascus had demolished the remnants of the plant beforehand) but not to reach any definitive conclusion. However, environmental samples at the reactor site revealed man-made uranium particles of a type that Syria had not declared to the IAEA. Damascus's claim that the particles came from the Israeli airstrike was dismissed. In August 2008, more unexplained uranium particles were discovered at Syria's miniature neutron source reactor (MNSR) in Damascus.

⁵² See Jeffrey Goldberg and Marc Ambinder, "The Ally from Hell," *The Atlantic*, Vol. 308, No. 5, December 2011.

⁵³ The reactor was a copy of a North Korean model, and a number of North Korean experts had been on the site—and still were at the time of the bombing. Syria has maintained that the destroyed building was a nonnuclear military facility and says that it had no nuclear-related cooperation with North Korea.

Finally, access to other suspected facilities was refused, and the IAEA obtained commercial satellite imagery showing cleanup activities at those sites. According to the IAEA, the agency has made repeated requests to Syria for “information concerning the Dair Alzour [Al Kibar] site,” “access to technical documentation” related to “the construction of the destroyed building,” and access to three locations “functionally related to the Dair Alzour site,” where a North Korean reactor had been under construction.⁵⁴ Syria maintains that it has no obligation to answer. Until now, no special inspection has been demanded by the IAEA Board of Governors.

Syria should not be left under the radar, since the IAEA reported several times that “no progress” could be made, that its investigation was “severely impeded” by Syria’s noncooperation, and that it urged Damascus to provide transparency.⁵⁵ Syria is not Iran. The problem it poses is much less serious. But in a way, the fact that such a minor player can successfully provoke the IAEA and the international community is even more worrisome: If Damascus can, who else will? Burma may be next.⁵⁶

In April and May 2011, protesters were out in all the major Syrian cities. Bashar al-Assad’s response to them was meant to justify repression by a foreign “plot.” His rhetoric was so out of touch with political events that he may prove unable to deal with a national revolt. Few capitals seemed to welcome this scenario: not the Israelis, not the Americans, not even the Saudis, fearing for themselves and their survival. But a change could lead to a significant shift in the balance of regional power. A less sectarian, less ideological, and more internationally responsible Syrian government would dramatically weaken Iran and put an end to Damascus’s 30-year investment in Hezbollah. The Iranian nuclear program would look less sinister than it does today.

The reason why the West—and Washington in particular—missed a vital chance to weaken Assad when all the big Syrian cities were holding demonstrations for the first time since 1963 is unclear. Elliot Abrams cites incompetence, the view that Assad is a reformer, the unwillingness to admit that sending an ambassador to Damascus was a mistake, the idea that Israel-Syria peace talks may still be on, defeatism, and the fear of the Muslim Brotherhood.⁵⁷ Whatever the answer, and even without mentioning the political objectives of President Obama’s speech in Cairo in 2009, whose title was “A New Beginning,”⁵⁸ a major opportunity to weaken Tehran has been missed.

⁵⁴ IAEA, *Implementation of the NPT Safeguards Agreement in the Syrian Arab Republic*, Report by the Director General, February 18, 2010, p. 2. This is now formally acknowledged by the IAEA.

⁵⁵ “Essentially, no progress.” Such is the statement provided time and again by the IAEA on Syria.

⁵⁶ Myanmar is reportedly working on nuclear weapons with the help of North Korea. The actual achievements are thought to be very limited. BBC News, “Burma ‘Trying to Build Nuclear Weapon,’ ” June 4, 2010.

⁵⁷ See Elliot Abrams, *Can Anyone Explain Our Syria Policy?* New York: Council on Foreign Relations, May 11, 2011.

⁵⁸ See President Obama’s speech in Cairo, “A New Beginning,” June 4, 2009, where principles of justice, progress, and tolerance and the dignity of all human beings were promoted.

Some Thoughts Concerning Small States and International Security

The Cold War superpowers were essentially cautious: Neither wished to start a war, knowing that it could escalate into a nuclear war.⁵⁹ Post–Cold War decision makers (Slobodan Milosevic, Saddam Hussein, Kim Jong Il, Mahmoud Ahmadinejad) have often appeared insensitive to all but the most obvious shifts in probabilities. The careful and detailed manipulations that were developed during the Cold War to prevent nuclear war may become insufficient with them. Strong statements, troop maneuvers, demonstrations of resolve, signals of commitments designed to increase the perceived danger of war slightly but noticeably—all risk being ignored. This may be particularly true if poor diplomacy has convinced potential adversaries that Western powers do not implement simple threats, like transferring a dossier to the U.N. Security Council (North Korea in June 1993, Iran in November 2003), applying and implementing meaningful sanctions (North Korea after the 2006 ballistic missile tests), or asking the IAEA to challenge a nation refusing to provide information and access to suspected sites (Syria since September 2007).

The idea that some finely calculated plan will prevail in a crisis, taking into account gains and losses, has never been convincing to observers of the international scene. With small powers, it has probably become more irrelevant than ever, not only because they are not well understood in the West but because their domestic policies possess an intrinsic ability to surprise us: Governments that respect no limits in the exercise of power domestically, maintaining states of emergency for decades with extraordinary executive, legislative, and judicial powers, are not likely to act according to our views. The Soviets did surprise us more than once, and their leadership was totalitarian, but they were seldom reckless on the international scene when nuclear crises occurred. More cost-tolerant and more willing gamblers do not think along traditional Western lines, where “realism” is often biased by a sense of familiarity that has nothing to do with the world of the adversary.

The thresholds that should not be crossed to avoid confrontation are poorly known when small powers are concerned. This information is essential to prevent escalation. Who in Islamabad, Tehran, or Pyongyang—or Damascus for that matter—has a clear view concerning those thresholds is difficult to tell. Who recognizes the importance of communicating them to potential adversaries in order to avoid miscalculation is equally unknown. In the absence of such knowledge, the tendency to be overcautious is understandable. Such was the approach in New Delhi, for example, after the 2008 Mumbai attacks: absolute restraint. However, caution may be misinterpreted as a sign of weakness by military or paramilitary elite groups unable to understand the

⁵⁹ Aleksey Arbatov contends that “the Soviet empire was created and built for the arms race, confrontation, and even war with the rest of the world,” but careful analysis of Soviet behavior in times of crisis shows prudence and restraint. Aleksey Arbatov, “The National Idea and National Security,” *Mirovaya Ekonomika i Mezhdunarodnyye Otnosheniya*, Vol. 5, May 1998, p. 8.

reasoning behind a civilian democratic government whose main goals are peace and economic development.

The age of small powers also means that the nations concerned often believe they do not have a fair share in a given international system. They may do whatever they can to change it. Peaceful means—including violent diplomacy, the North Korean way—may be employed. Nonpeaceful means can hardly be excluded. Deterrence theory favors status quo powers, not powers unhappy with the limitations put on them by the existing distribution of power and superior weapons in the hands of others. In this respect, recent years have shown dangerous examples of successful asymmetric strategies (for example, the 2006 Lebanon War between Israel and Hezbollah).

Rationality may be neither necessary nor sufficient for deterrence to work. It should in principle discourage attacks on more powerful conventional and/or nuclear adversaries. To restore pride, to impose a favorable image of the military in the domestic context, to humiliate a neighbor with harassment and war of attrition, to encourage demands of revenge abroad in order to avoid challenge at home—all of these goals can be found at one time or another in past nuclear crises. More of the same can be expected with small powers. Related strategies were successfully managed to control escalation during the Cold War. Such control is likely to become harder in the future.

The Middle East, South Asia, and East Asia are equally vulnerable to military provocation or accident. North Korea, Syria, Pakistan, and Iran have defense cooperation, while capitals learn from each other on the conduct of diplomatic strategy, illicit trafficking, and underground networks. All test the resolve of their neighbors, of Washington, of European nations, and of the U.N. They know they can raise the stakes with relative impunity, and they illustrate the weakness of major powers in the face of risk-taking players. Their outsmarting of the international community when pressing ahead with nuclear programs is already having major implications for regional and international security. The potential for escalation in Gulf waters, on the Pakistan-India Line of Control, and in the troubled waters of East Asia is increasing.

The age of small powers means that U.S. allies are under increased pressure from reckless neighbors. Hence the renewal of interest in extended deterrence, conventional and nuclear. As Secretary of Defense Gates acknowledged in October 2008: “The nuclear weapons programs of North Korea and Iran have made our nuclear guarantees to allies such as Turkey, South Korea and Japan take on renewed importance.”⁶⁰ Japan is a case in point: For the time being, U.S. extended deterrence rests almost exclusively on declaratory policy. This may change since Japan and the United States began regular consultations on nuclear deterrence in 2010 that include information sharing on

⁶⁰ Robert Gates, “Nuclear Weapons and Deterrence in the 21st Century,” speech delivered to the Carnegie Endowment for International Peace, Washington, D.C., October 28, 2008.

operational details.⁶¹ U.S. encouragement of defense and strategic cooperation between Japan and South Korea and between Japan and Australia may be part of a 21st-century extended deterrence in East Asia as well. Concerning the current “neither confirm nor deny” policy on the possession and transportation of nuclear weapons by the U.S. military, it will probably be maintained.

It is counterintuitive to believe that deterring small nuclear powers is harder than deterring big ones, given the difference in offensive scale, the possibility of a disarming first strike, and the relative effectiveness of defense against small attacks. This is why London, for example, continues using the old “Moscow criteria”—with the view that no bigger nuclear challenge will emerge. The problem, though, is not one of scale but of tactics, assertiveness, the will to subvert a status quo, and resilience. In the case of Iran, the issue is complicated by the presence of a “deep” state—or rather of a “state behind the state”⁶²—the record of rogue operators, and the lack of professionalism of the Pasdaran, reportedly in charge of the missile program. Iranian nuclear capabilities may become able to deter us, whatever their (small) size. In the case of North Korea, 2010 provided a telling example of the difficulty of altering Pyongyang’s calculus: After the sinking of the *Cheonan*, followed by U.S.-South Korean maneuvers, the North Korean leadership created a further escalation with the shelling of Yeonpyeong Island, meaning that the reaction to the sinking was insufficient in prompting North Korea to reconsider its perceived benefits.

Finally, during the Cold War, regional powers were—or were thought to be—mere *proxies* playing the only game in town, which was the superpower game. Today, in a historical reversal, regional powers (Iran, North Korea, Syria, and Pakistan) and terrorist organizations (Hezbollah) seem to have conquered room for strategic maneuvers of their own. Big powers leave them a curious freedom of action even when they consider their activities “unacceptable.”⁶³ Worse, in the case of Russia and China, they protect them either from serious U.N. Security Council sanctions or from implementation of sanctions they themselves voted for. Still worse, they help them with their nuclear programs (China helping Pakistan is the most obvious case that comes to mind).

Small states are as good observers of big powers as they are of each other. In the Iranian case, between September 2009 and March 2010 Washington repeated more than ten times—in different ways—that its patience had limits. After so many warn-

⁶¹ The bilateral debate on security issues including the nuclear umbrella, the use of space, and missile defense started formally in February 2010 at a working level. The first bilateral meeting on nuclear deterrence was held in Washington in mid-February 2010.

⁶² An expression used by many Iran experts to describe the complexity of the Iranian leadership.

⁶³ The adjective was used more than ten times by Washington in 2009 and 2010 in relation to an Iranian nuclear capability, rendering it meaningless.

ings, how credible is the statement that “the United States is determined to prevent Iran from acquiring nuclear weapons, period”?⁶⁴ The same applies to North Korea, since Washington has proven unable to call an act of war (the sinking of the *Cheonan* and the shelling of Yeonpyeong Island) an act of war, preferring to call it a “military provocation.” How many dead sailors—or army personnel on Yeonpyeong Island—would it take to get the name right?

Concerning Pakistan, Washington needs it in Afghanistan—where it gets little help from Islamabad’s military—but Washington cannot afford to be wrong on the possible resumption of black market nuclear business by some of A. Q. Khan’s associates, on the security of Pakistan’s nuclear arsenal, or on the possibility of a second Mumbai. That Islamabad considers the investigation on Khan’s network now closed⁶⁵ and that it has reportedly taken all appropriate steps to safeguard its nuclear stockpile are not sufficiently reassuring. Pakistan’s nuclear personnel reliability must still improve, and since Pakistan’s fissile material and warhead stockpiles are expanding (Pakistan now being the fifth nuclear power with no intention of stopping production of fissile materials), the general trend is toward less rather than more security.

While in the 20th century it rested with great powers whether a local conflict would develop into a general war—one in which all the great powers took part—small powers are now in the process of blurring the border between regional and major wars due to their means of destruction as well as the perceived weakening of Western influence and deterrence. Their common opposition to the West, leading them to form “coalitions of the unwilling,” is a major element of the new strategic scene. Even a small arsenal of nuclear weapons—or, for that matter, of biological weapons—can give small powers a disproportionate leverage on the distribution of power in peacetime, while in wartime they may be winning the competition in risk-taking that is called *escalation* in the nuclear literature. In addition, as Henry Kissinger underlines in his most recent book, “as proliferation accelerates, the calculus of deterrence grows increasingly abstract. It becomes ever more difficult to decide who is deterring whom and by what calculations.”⁶⁶ A wise conclusion from this judgment is that a far more active nuclear nonproliferation policy is needed to prevent leaders from having to face this exceedingly dangerous conundrum.

⁶⁴ Joseph R. Biden, Jr., quoted in David E. Sanger, “Debate Grows on Nuclear Containment of Iran,” *New York Times*, March 14, 2010, p. WK3.

⁶⁵ The United States has never had personal access to A. Q. Khan, who recognized publicly in 2010 that the Pakistani military was informed all along of his dubious deals. Similarly, the IAEA has never been able to interview him.

⁶⁶ Henry Kissinger, *On China*, London: Allen Lane, 2011, p. 495.

Ahead of Us: The Big Piracy Game?

If we make a wrong prediction about ourselves, we also encourage the enemy to make a wrong prediction about us.

—Bernard Brodie¹

In international relations, like poker, you play your opponent, not your hand.

—Daniel Freedman²

In the interwar period of the 20th century, there was a feeling that great powers would play a less important role in world affairs:

After the First World War it was possible to believe that the Great Powers had lost something of their former primacy in the international system, because of the multiplication of small states on the principle of nationality and the new attempt to constitutionalize international politics through the League of Nations.³

This situation did not last: In the 1930s, the great powers came back on the world scene with renewed vigor.

There may be a lesson worth studying for those living in the second decade of the 21st century. At first sight, the empowerment of small powers, filling a void created by the end of the East-West confrontation and armed with the most destructive weapons ever available to mankind, is striking. However, the great powers may reassert their predominance. Numerous signs already point in this direction, the most ominous being China's military modernization, its assertive behavior on the world scene, and its bullying of neighbors on vital sea lanes. Another is Russia's perception that it is still in geopolitical competition with the United States in the states of the former

¹ Brodie, 1958, p. 6.

² Daniel Freedman, "Crocodile Dundee Diplomacy for North Korea," *Forbes.com*, May 24, 2010.

³ Martin Wight, "The Balance of Power," in Arnold Toynbee and Frank T. Ashton-Gwatkin, eds., *The World in March 1939*, London: Oxford University Press, 1952, p. 508.

Soviet Union, in Europe (on the question of its security architecture),⁴ and also in the Middle East.

To prepare for this possible comeback, first, the United States may have to recognize that while it remains convinced that American interests often coincide with universal interests, such is not necessarily the view of potential adversaries. Strategic engagement with them has been tried again and again since the end of the Cold War, in hopes that Russia and China would become more responsible stakeholders in the international arena, with relatively meager results. The challenges to international order are perceived differently in Beijing, Moscow, and Washington. Strategic stability does not have the same meaning in the three capitals, either. Over time, more cooperation might be secured on global issues, but this is far from being the most likely outcome, if current events provide any indication.

Second, America should overcome its current post–Cold War blues, originating in both external difficulties (endless and exhausting regional wars) and internal difficulties (economic and financial crises, social consequences, the disturbing polarization of American politics). Granted, problems are piling up, but the idea that the United States—or the entire Western world, for that matter—is in sharp decline, and that it will soon be China’s time, is a gross exaggeration. If serious competition starts, the reality check will probably show a different picture, although a “planning crisis” may be looming in the United States.⁵ There is a *relative* decline in American power as other nations rise economically, but the United States is likely to remain the most powerful power for decades to come. As Eric Edelman suggests in a 2010 report, it would be worth considering “what the world would look like if the United States was just one power among many”⁶ in the next decades. Who else wants to take international responsibilities on their shoulders? Certainly not the so-called emerging powers.

The United States’ most serious putative competitors would shape a much less open and free international system. Most Asian nations, with the exception of China and North Korea, do prefer the rather benign international environment created by America’s primacy. The need to accommodate rising powers in the interest of greater global governance is legitimate and may even be unavoidable, but it does not mean a decline. It means rather a renewal of America’s role in the world, preferably with the

⁴ The fact that President Medvedev agreed to attend the NATO Lisbon Summit (November 19–20, 2010) may prove to be a false dawn. In April 2008, Vladimir Putin attended the NATO Summit in Bucharest, raising hopes of a new era of cooperation. Russian Foreign Minister Sergei Lavrov then made the comment that “this yet again testifies that Russia is open to dialogue on any issues” (quoted in BBC News, “Russia in Ukraine Missile Threat,” February 12, 2008). The same year, however, in August 2008, the Georgian war (also called the South Ossetian war) broke out between Russia and Georgia.

⁵ Paul K. Davis and Peter A. Wilson, *Looming Discontinuities in U.S. Military Strategy and Defense Planning: Colliding RMA’s Necessitate a New Strategy*, Santa Monica, Calif.: RAND Corporation, OP-326-OSD, 2011, p. xi.

⁶ Edelman, 2010.

help of European and Asian allies, who would be wise to consider the possibility of a new confrontation among big powers as well. While they show a deep reluctance to think about this subject, particularly the Europeans, they will have to share the unpleasant consequences of any serious competition or, worse, confrontation among the big powers of the 21st century.

With China now a major rising power, considerably more difficult challenges than those posed by regional powers are starting to appear on the horizon. If experience is any guide, a gradually more powerful China is likely to become not a more responsible stakeholder but rather an increasing challenge to an international order that, in the eyes of Beijing, is unduly protective of the West's interests, including in Asia. The mood regarding Beijing has darkened after the Copenhagen Summit on climate change in December 2009, numerous cyberattacks, challenges to Internet freedom, ambiguous policy on Iran and North Korea,⁷ arms sales to Iran and to the Taliban, disregard for maritime law,⁸ and, finally, lack of common assessment on future challenges and future strategic stability. Beijing appears increasingly self-confident, arrogant, and nationalistic.⁹ With its imperial culture and its legacy of condescension, China sees itself as the only possible—and probably the only *legitimate*—successor to the United States on the international scene in the decades to come. In China's view, it deserves to become number one; it only needs time to prove the point. Its neighbors have few doubts on the subject. And, instructed by experience, Washington itself had far fewer doubts in 2011 than it did in 2009, for good reason.

Russia, a fading power, is a different matter of concern. Its rational choice should be to work with the West, with a potential nuclear-armed Islamic power on its southern flank, a collapsing demography, and a dynamic and greedy China in the southeast. But apart from reports written by some Russian experts popular in the West,¹⁰ there is no indication that Moscow has come to this conclusion. The 2010 Russian military doctrine still names NATO as the first danger to Moscow's security, 20 years after the end of the Cold War. Concerning China, there may be fear and awe in Russian minds, but there is not a single word on the subject in Russia's military doctrine. Whenever questions are raised about relations with China, Russian officials tend to answer that they

⁷ China has consistently declared that the best approach to both countries is not through the U.N. Security Council but through negotiations with Tehran and Pyongyang. And instead of strengthening its export controls, China tells Washington that imposing sanctions on Chinese firms will not help cooperation.

⁸ See Michael Richardson, "Beijing Projects Power in South China Sea," *Japan Times Online*, May 9, 2010.

⁹ The mentality of the new military generation in China is troubling in this regard. At a time when political leadership is considered to be weak, it plays an increasing role in Beijing and favor an ever more nationalistic policy.

¹⁰ See Igor Yurgens and Oksana Antonenko, *Towards a NATO-Russia Strategic Concept: Ending Cold War Legacies; Facing New Threats Together*, October 2010; and Sergei Karaganov, Timofei Bordachev, Ivan Ivanov, Fyodor Lukyanov, and Mark Entin, *Towards an Alliance of Europe*, conference report, Moscow: Valdai International Discussion Club, September 2010.

have dramatically improved. Reluctance to engage in any serious security dialogue—not to mention any initiative—that could threaten bilateral relations with Beijing is obvious.¹¹ When asked, for example, to share data with the United States on Chinese ballistic missile launches—a potential useful bilateral cooperation for both nations—Moscow refused in order to avoid hurting Russian-Chinese relations. According to an April 2010 BBC World Service survey, Russia ranks third in negative feelings toward the United States.¹² The main threats coming from Russia are its difficulty in reconciling with the loss of its empire, its resentment toward the West for that reason, the corruption of its political elites, and its current inability to face *real* threats as opposed to *imaginary* ones.

Big states seldom attempt to balance power, and even more seldom do they cooperate with each other. Most frequently, they simply seek to gain power of their own. The United States is probably a historical exception to this rule *because it appeared on the world stage in order to limit the damage brought by its European allies rather than to enlarge its own world influence and power*. History, revenge, misconceptions, and even suicidal moves can guide the policy of big powers: The 20th century has shown it in a devastating manner.¹³ An almost unthinkable series of absurdities in Vienna, Saint Petersburg, Berlin, and Paris set all of Europe ablaze as well as a large part of the rest of the world, after the assassination of the nephew of the Austrian emperor by a Serb nationalist. Once the machine had been set in motion, there was no way of holding it back.

A lucid analysis of the policy pursued by both Russia and China does not provide a rosy picture for the future. If the challenges come closer, no one will be in a position to speak about any “strategic surprise.” Retrospectively, the real surprise for historians will be our blindness: The main elements of future crises are already present for everyone to see. In the case of Russia: continuous violation of the BWC, disregard of the CFE Treaty, a policy of *fait accompli* in both Abkhazia and South Ossetia, a wish to recover as much of its former empire as possible, endemic political corruption, and ambiguity vis-à-vis Iran.¹⁴ In the case of China: a will to gain at last the position it believes it deserves in the world (namely number one), deployment of more than 1,000 missiles on mainland China facing Taiwan, cyberattacks against America and Europe, competition with the United States in outer space, development of effective

¹¹ During a 2010 meeting in Deauville among President Medvedev, Chancellor Merkel, and President Sarkozy, the issue of China came up. The Russian president reportedly said that relations were currently good but “complex,” leaving his interlocutors to wonder exactly what he meant.

¹² BBC World Service, “Global Views of United States Improve While Other Countries Decline,” poll report, London: BBC, p. 6.

¹³ Thérèse Delpech, *Savage Century: Back to Barbarism*, Washington, D.C.: Carnegie Endowment for International Peace, 2006.

¹⁴ There was some progress on this front in 2010, with Moscow cancelling the delivery of S-300 missiles to Iran five years after the contract was signed with Tehran. The Kremlin called off the deal in September 2010, citing U.N. sanctions over Iran’s nuclear program.

antiaccess capabilities, confrontation with neighbors on sea lanes and maritime law, and an unwillingness to implement sanctions against Iran and North Korea, even when Beijing agrees to vote for them.

The triangular nuclear relationship among the United States, China, and Russia took a curious shape in 2010. At the very time when Washington took literally months to decide whether the NPR would use the phrase “sole purpose” or “primary purpose” to describe the objective of U.S. nuclear weapons (and finally settled for “fundamental purpose” in order to include a possible nuclear response to a biological attack), China quietly continued increasing and improving its ballistic and nuclear arsenal as well as its space and cyber capabilities, while in February 2010 Russia adopted an aggressive nuclear doctrine that worried its neighbors (who are also U.S. allies and often EU members).

China

Western powers may be willing to diminish their reliance on nuclear weapons. China is not. The least transparent of the five acknowledged nuclear weapon states, it has released little detailed information on its nuclear facilities, the nature of its weapon systems, and its force structure. It refuses a formal moratorium on fissile material for explosive purposes, leaving the door open to a buildup. It denies possession of tactical nuclear weapons¹⁵ and of any airborne nuclear component.¹⁶ Fissile materials and weapons complexes may be capable of turning out up to 100 weapons per year if Beijing deems it necessary. And China is deploying a mobile, reliable, and survivable triad with an increasingly important submarine force, a new element when compared with the 20th century.¹⁷ The new submarine base disclosed in May 2008 by satellite imagery on Hainan Island is close to vital sea lanes in the South China Sea. The location gives China good access to deep seas and to disputed territories (the Parcel Islands and Spratley Islands, for example) as well as more leverage over Taiwan. India took notice, seeing the new base as a security concern.¹⁸ A major ballistic missile buildup is under way,

¹⁵ Open sources used to give a figure of 150 for those weapons in the 1990s, but for some reason this figure has disappeared in more recent assessments. Are the weapons thought to be obsolete? Are they simply nondeployed weapons? Or are the Chinese supposed to have abandoned tactical nuclear weapons altogether, and if so, what is the evidence that they did?

¹⁶ The modernized H-6 bomber is nuclear capable and can carry six DH-10 cruise missiles.

¹⁷ The former Xia-class submarine has never been convincing. The Type 094 second-generation nuclear ballistic missile submarine, one of which was spotted at one of the piers of an underground submarine base on China's Hainan Island in May 2008, is a serious modern submarine. More generally, the future Chinese submarine fleet, conventional and nuclear, will be both quantitatively and qualitatively credible, even by U.S. standards.

¹⁸ The first nuclear submarine base is located 25 miles from Qindao, in the Yellow Sea. The second base—the one that attracted India's attention—is located on Hainan.

both in medium-range (DF-21) and long-range (DF-31 and JL-2) missiles and cruise missiles (there may now be as many as 500 DH-10 operational cruise missiles). In 1996, at the time of the Taiwan Strait crisis, 30–50 missiles were reportedly deployed in China's coastal region. There were more than 1,200 in 2011 (mostly DF-15A, DF-15B, and DF-11A). The Pentagon contends that China has the most active land-based and cruise missile program in the world.

China's strategic posture is in flux as well. Opacity is a matter of policy on nuclear issues as long as China feels weaker. Chinese leaders keep repeating Deng Xiaoping's guidance: *Conceal our capabilities and bide our time*. It may well become clearer *only* when the current modernization process has gone far enough to give Beijing confidence vis-à-vis potential adversaries. Those are many, but the United States, its allies in the region, Russia, and India are in the first row. With that in mind, the idea that China will be satisfied with an arsenal of 200 warheads makes little sense.¹⁹ A more likely goal would be close to 600, which is consistent with Chinese fissile material stocks²⁰ as well as with the objective of parity with the United States. How far is China going in order to be consistent with what Beijing calls "minimum deterrent" without ever defining the concept?

Another factor to take into account in China's defense policy is a troubling confusion between offensive and defensive actions. As stated in a 2010 Pentagon report on China, offense is sometimes simply synonymous with defense:

The history of modern Chinese warfare provides numerous case studies in which China's leaders have claimed military pre-emption as a strategically defensive act. For example, China refers to its intervention in the Korean War (1950–1953) as the "War to Resist the United States and Aid Korea." Similarly, authoritative texts refer to border conflicts against India (1962), the Soviet Union (1969), and Vietnam (1979) as "Self-Defense Counter Attacks."²¹

The concept of "active defense," deriving from Mao's era but integrated only progressively in the overall Chinese strategy, is consistent with this narrative.

One should also recognize a different understanding of deterrence in China than in the West or Russia: In Chinese, *deterrence*, closer to *compellence*, means to coerce someone to do something rather than to dissuade them from doing something. China's neighbors are aware of this and insist on getting more transparency on China's nuclear

¹⁹ When Mao decided to get nuclear weapons (in 1956), he raised three principles: "to have," "to have a few," and "of good quality" (Bao Shixiu, "Deterrence Revisited: Outer Space," *China Security*, Issue 5, Winter 2007, p. 6). The question is *how few* would now be considered enough to face three adversaries, two of them having the biggest nuclear arsenals.

²⁰ The Perry-Schlesinger report suggested 400 warheads in 2009. Perry et al., 2009, p. 11.

²¹ Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China*, Washington, D.C., 2010, p. 24.

policy, holdings, and intentions. In the region, Tokyo, including the more recent center left government, has become the most vocal capital on the subject.

China overtook Japan as the world's second-largest economy in 2010. Many American and European observers are convinced that the priority in China is economic development, and that it will lead Beijing, wittingly or unwittingly, to political openness, domestic freedom, and international cooperation. Why do they believe this when there is little evidence supporting this view? The first beneficiary of China's growth seems to be the Chinese military. Beijing has continually increased its military spending by more than 10 percent every year for almost 20 years, beyond its annual growth during the same period. China's public explanation is related to improved welfare of the military personnel and better logistical support. However, a large part of the military spending is meant to finance more serious programs: nuclear missiles, energy weapons, space warfare, antiballistic defenses, nuclear and conventionally advanced submarines, amphibious assault ships, electronic intelligence, cyber capabilities, and antiship ballistic missiles (a critical antiaccess capability).

In addition to this impressive list, where the sky seems to be the limit, it is noteworthy that China is able to dramatically reduce its cycle of research, development, and production because of its access to Western—and in particular American—technologies, often thanks to espionage. Sometimes seen in America as the only serious interlocutor of the United States to address the world's problems (the already worn-out G-2 concept), China may become its most serious challenger in the 21st century. If China acquires a challenging military capability and decides to come out in the open with a series of technical demonstrations,²² by that time it may be too late to react.

There are still conflicting views in China concerning the future. But some Chinese experts are already sending a message of clear competition with America to the outside world. In January 2010, a Chinese PLA officer, Senior Colonel Liu Mingfu, published a Chinese-language book, *The China Dream*, in which he encourages China to move swiftly in order to displace the United States as the global "champion": "China's big goal in the 21st century is to become number one, the top power," Liu writes, adding that "if China in the 21st century cannot become number one, cannot become the top power, then inevitably it will become a straggler that is cast aside."²³ Although this does not represent government policy, still, expressed in the rhetorical "peaceful rise" formula, the 303-page book is but one of a number of Chinese voices demanding strong Chinese reaction against Washington over trade, Tibet, arms sales to Taiwan, military power in Asia, and protection of sea lanes in the South China Sea. Another PLA officer, Colonel Dai Xu, goes further and bluntly claims that "China cannot escape the

²² This move has already started with the antisatellite weapon (ASAT) test on January 11, 2007, and the exoatmospheric ABM test on January 11, 2010.

²³ Quoted in "China 'Should Sprint to Become the World's Most Powerful Country,'" *The Telegraph*, March 1, 2010.

calamity of war, and this calamity may come in the not-too-distant future, at most in 10 to 20 years.”²⁴ In a country where nothing on military matters can be published freely, this may represent an extreme view but one that cannot be discarded too quickly.

Such language may look extravagant not only because a conflict with the United States would inflict terrible costs on China, but also because the most likely point of bilateral confrontation, namely Taiwan, is considered to be less contentious since the 2008 Taiwanese elections. Those elections, won by the Chinese Nationalist Party (KMT) presidential candidate, Ma Ying-Jeou, were warmly welcomed in Beijing. Since then, both sides have even contemplated the possibility of a peace agreement to stabilize the cross-strait situation. The three Sino-U.S. Joint Communiqués (1972, 1979, 1982), as well as the Taiwan Relations Act (1979), rest on the idea that neither side of the Taiwan Strait will risk war because of probable U.S. involvement.²⁵ At a time when Ma’s victory reduces the threat of Taiwan’s claim to acquire formal independence, such strident statements appear totally out of place. They are all the more disquieting. As a matter of fact, even the cooperative current Taiwanese president pledged in April 2011 to continue the island’s military buildup to offset the perceived threat from China, as he was inaugurating new, locally manufactured missile ships.

An idea worth reconsidering is the view that China has become vastly more important to the West than Japan (an idea no longer subject to any serious challenge). Current relations between the United States and Japan are difficult, in part because of clumsy politics on both sides over U.S. military bases, in part because there is a feeling in Tokyo that the United States cannot be counted on for the long term, and lastly because Japan resents the weight of U.S.-Sino relations. Historically, American strategy has swung often between Japan and China. This was the case as early as 1853, when “Commodore Matthew Perry pulled his naval squadron out of Shanghai and set sail for Edo Bay, where he intended to carry out his orders of opening the Tokugawa Shogunate to commerce and friendly relations with the United States,”²⁶ while the U.S. commissioner to China, Marshall Humphrey, sent a report to Washington shortly before the Navy pulled out, “arguing that the United States had the ‘highest interests’ in ‘sustaining China’ ” and that “America’s destiny in Asia . . . was with China.”²⁷

In Japan, the debate about whether the future lies with Asia or with the West is also quite old, dating at least to the Meiji period. So, in a way, there is nothing new

²⁴ Quoted in “China ‘Should Sprint to Become the World’s Most Powerful Country,’ ” 2010.

²⁵ Joseph Nye, Jr., expressed the state of affairs in the following way in 1996: “The Americans do not want to give Taiwan a 100 percent guarantee that no matter what Taiwan does, the Americans will come to its defense, because that would encourage Taiwan to take actions that would be risky.” Brian Knowlton, “Q & A: Joseph S. Nye Jr.: Military’s Muscle-Flexing in a Chinese Political Game,” interview with Joseph S. Nye, Jr., *International Herald Tribune*, March 18, 1996.

²⁶ Michael J. Green, *Why Japan Is Important to the West*, policy brief, Washington, D.C.: The German Marshall Fund of the United States, February 12, 2010, p. 1.

²⁷ Green, 2010.

about the current situation, apart from one crucial difference: More and more Asian nations are feeling uncomfortable with a perceived drifting or weakening U.S.-Japanese alliance, since their own security depends on its survival. On the American side, the establishment of a Communist regime in Beijing in 1949 was at first interpreted as the beginning of an inevitable confrontation. The Korean War would soon be exactly that, not only in Korea but between China and Formosa, as the Seventh Fleet was sent to the Strait to prevent an aggression. Then the two nations were both present in Indochina and opposed during the two 1954 and 1958 Quemoy and Matsu crises. At the beginning of the 1970s came the rapprochement, at the expense of Taiwan. Nixon saw his February visit to Mao as a major change in the balance of power in Asia and even in the world as a whole.²⁸

As already stated, America's decline and China's rise is another idea to revisit.²⁹ Numerous debates over U.S. decline have surfaced since the 1950s, when the Soviet Union was often viewed as a power that would replace America (second largest economy, developing a nuclear arsenal, pioneering space exploration, etc.). Then the Soviet Union collapsed due to ideological, strategic, and economic factors. In the 1980s, Japan was poised to become number one, the new superpower, a view that no one would dare sustain in 2010. America may have great difficulties in Iraq and Afghanistan, but what would China do in both places? Can Beijing replace the dollar with the renminbi? Can China be a serious global power? Last but not least, when compared with China's internal challenges, don't America's internal challenges pale? Focusing on China's weaknesses and on America's strengths would provide a healthier and probably more accurate picture. Economic growth is not the whole story and may be more fragile than many believe.

This does not mean that tough questions about America's future in Asia should not be asked. The Obama administration was first perceived to be ambitious in the region, convinced that Asia, not Europe, would be America's important partner in the 21st century. Barack Obama even declared during the first ASEAN-U.S. summit that he was the first "Pacific President." The consequences of this statement as well as the redefinition of U.S. policy in East Asia remain unclear. What is the nature of the U.S. ambition there? U.S. allies are not always able to articulate it. Japan has no doubt that its security still lies with the U.S.-Japanese treaty. Its military cooperation with the United States on missile defense is deemed crucial. But Tokyo is unsure about American policy concerning North Korea and—beyond—concerning China. South Korea, even under a reportedly "tough" president, Lee Myung-Bak, has been leaving space to

²⁸ A view Mao typically did not share. See Margaret MacMillan, *Nixon and Mao: The Week That Changed the World*, New York: Random House, 2008. The more practical Chinese authorities were looking for access to technologies and strategic information.

²⁹ Such debate concerning the relative strength of the two nations would have—rightly—been considered absurd during the Cold War, partly because Mao's policy gravely weakened China. It was then a peripheral actor.

Beijing, wittingly or unwittingly, and would like to revert to a more assertive policy with the help of the United States. There are good reasons to worry about the future in this part of the world: China seems to have a strategy of influence. America may have been too busy in Iraq and Afghanistan in recent years to define one, even though awareness is growing in Washington that its protection is in demand.

A most significant Chinese reaction was noted in July 2010 at the meeting in Hanoi of the ARF.³⁰ When U.S. Secretary of State Hillary Clinton asked China to respect freedom of passage in the South China Sea, Yang Jiechi, Chinese minister of foreign affairs, left the room. Then he declared: “China is a big nation, others are small nations and that is a fact.”³¹ In other words, in the eyes of Chinese authorities, being big is enough reason to exert—and impose—power, regardless of international law on sea lanes. This arrogant position had a price. The pressure China has been putting on its South China Sea neighbors (by frightening oil companies, for example) led Southeast Asian nations to react together with the United States and to succeed in getting the South China Sea issue back on the international table. To bully is not always wise. Most countries in the region now worry more about China than about the United States. The statement about “big” and “small” nations also reminds us that Beijing does not share the Western tradition of formal equality between nation-states but keeps instead a hierarchical view of international relations. And the Hanoi diplomatic incident stresses that maritime issues might become more troubling for regional and international security in the coming decades than even Taiwan.

China’s belief in violence as a legitimate instrument of policy and its willingness to count on its sole strength are rooted in the experience of the Chinese Revolution and in a long imperial history.³² In 2011, an increasingly respectable military force and Beijing’s apparent success in surviving the economic downturn strengthened those sentiments. This does not necessarily mean that *hubris* is never far from China’s military mind, but that a hard-core realpolitik approach to international relations tends to prevail and that the use of force is not perceived as a dramatic threshold.³³ The idea that China should respect international rules—whether they relate to the sea, airspace (the Hainan incident in 2001), outer space (thousands of pieces of dangerous debris are still in orbit after the January 11, 2007, ASAT test), or cyberspace (Ghostnet, one of the most malicious malwares, has been traced back to Hainan)—may have made some progress in the last ten years, but room for improvement is still considerable.

³⁰ The meeting brought foreign ministers from ten Southeast Asian nations.

³¹ Bernard K. Gordon, “The Trans-Pacific Partnership and the Rise of China,” *Foreign Affairs*, November 7, 2011.

³² See Ross Terrill, *The New Chinese Empire*, New York: Basic Books, 2003.

³³ The work of Michael Pillsbury consistently emphasized this point at a time when it was much less apparent than today. See, for example, *Chinese Views of Future Warfare*, Washington, D.C.: National Defense University Press, 1998.

The Chinese military³⁴ is becoming more arrogant over time. A good example was the EP-3 incident in 2001. But an even more telling one, although much less spectacular, took place in March 2011, at a time when Japan was desperately struggling with the aftermath of the earthquake and tsunami and the nuclear consequences of both catastrophes: A Chinese helicopter closely approached a Maritime Self-Defense Force destroyer—it came as close as 90 meters to the ship at a height of 60 meters above the water. Who else would have taken advantage of such a situation and decided on such a dangerous action? The fact that there could be limits to China's power because of international law is often simply ignored. No wonder, since illegal trafficking is part of its numerous activities.³⁵ Granted, it created a serious warrior culture, including intense training, that many Western nations do not match. But it also owns and operates factories, shipping and trucking companies, and businesses both legitimate and illegitimate. They are in many ways lawless pirates that control most illegal trafficking in the region. Since there is a widespread disregard for rules in China and no real sense of limits when power is at stake, *Beijing is an excellent candidate for unrestricted warfare*. In nuclear terms, the fear of uncontrolled escalation with China, notably in a Taiwan scenario, is growing in the United States because of bad strategic communication, ignorance about respective thresholds, considerable room for mutual misperception, and finally the escalation dominance that appears to be assumed in Beijing whatever the circumstances. As a matter of fact, the so-called active strategy puts no boundaries on the limits of Chinese offensives.³⁶

To be sure, Chinese society is changing, but not in the direction expected, since Chinese youth is, according to polls, more rather than less nationalistic when compared with the previous generation. The pressure on the Chinese Communist Party to translate economic achievements into greater sway against the West is radically opposed to Western hopes that economic development will lead to more cooperation and partnership. Western nations could do what the Russians have decided to do, which is to ignore the strategic problem posed by China in public statements, but with

³⁴ The Red Army, later renamed the People's Liberation Army (PLA), was founded in 1927 as the military wing of the revolutionary party. The founding principle of the PLA is, "The Party commands the gun." Its primary mission is to keep the party in power.

³⁵ The PLA's involvement in business surged in the 1980s under Deng, and in the late 1980s, the PLA's commercial empire had 20,000 companies (oil, hotels, weapons, smuggling commodities, etc.). Business corrupted many officers. The PLA was pushed back into barracks in the 1990s, but many still operate outside the law. See Richard McGregor, *The Secret World of China's Communist Rulers*, New York: Harper, 2010, especially Chapter 4, "Why We Fight."

³⁶ See David Finkelstein, "China's National Military Strategy," in James Mulvenon and Richard Yang, *The People's Liberation Army in the Information Age*, Santa Monica, Calif.: RAND Corporation, CF-145-CAPP/AF, 1999, p. 88. See also Mark Burles and Abram N. Shulsky, *Patterns in China's Use of Force: Evidence from History and Doctrinal Writings*, Santa Monica, Calif.: RAND Corporation, MR-1160-AF, 2000, which states that the way in which China "has used force in crisis and conflict situations has often surprised and perplexed the United States, as well as other countries."

a double risk: First, it would make it difficult to coordinate Western defense policies regarding Beijing, and second, it would be difficult to justify the investments necessary to face the problem (including in the areas of intelligence, cyberdefense, space, and early warning).

Taking all of the above into account along with the significance of a possible nuclear scenario over Taiwan or maritime issues, the U.S. decision to sell arms to Taiwan (a \$6.4 billion package of arms sales in 2010) is wise but very limited, taking into account the number of Chinese ballistic missiles currently targeted at the island. This part of the world risks losing the battle before it actually starts. Arms sales should reduce the probability of a Chinese attack on the island, increase the protection against more Chinese missiles deployed on the continent against Taiwan, and reassure Japan as well, since Tokyo has every reason to fear some unpredictable Chinese action. Google's retreat to Hong Kong was another significant gesture after China stole not only a large number of email addresses but *Google's whole security system*. The July 2010 maneuvers after the sinking of the *Cheonan* were also a (weak) demonstration of force, and Hillary Clinton's statement in Hanoi on the freedom of the South China Sea was a useful reminder. Such moves could in principle convince Beijing that it has been overplaying its hand. More should be done, though, to make things clearer: protecting international waters that China claims are its exclusive economic zone, revealing the ambiguity of China's policy toward North Korea, further strengthening ties with China's neighbors (Japan, South Korea, and Taiwan), limiting technology transfers in key areas, fighting Chinese espionage more forcefully in Western nations, and denouncing the appalling Chinese human rights record.³⁷

The final version of the 2010 Quadrennial Defense Review (QDR) tells a different story. According to John T. Bennett, who reportedly compared a December 2009 draft with the final February 2010 version, "Pentagon officials deleted several passages and softened others about China's military buildup."³⁸ The changes concern the necessity for the United States to exercise "prudence" and prepare for "disruptive competition and conflict." Passages about Russian arms sales to Beijing and China's 2007 destruction of a low-orbit satellite were also altered. Also gone is a crucial paragraph:

Over the past ten years, for example, China has fielded more than one thousand short and medium range ballistic and cruise missiles, advanced attack submarines armed with wake-homing torpedoes, increasingly lethal integrated air defense systems, extensive electronic warfare and computer network attack capabilities, and counter-space systems.³⁹

³⁷ China's disproportionate reaction to the Arab revolts in 2011 (systematically barring information on them daily) is telling of a considerable sensitivity and fear in Beijing of possible protests against the CCP.

³⁸ John T. Bennett, "China Language Softened in Final Version of QDR," *Defense News*, February 7, 2010, p. 8.

³⁹ Bennett, 2010.

The estimate on the number of ballistic missiles in China's arsenal has disappeared as well.

Conversely, the sentence, "The United States welcomes a strong, prosperous, and successful China that plays a greater global role" has been maintained. Why should the United States welcome a strong China? Why is a strong China supposed to play a more cooperative global role? The following passage, stripped from the final QDR, was more lucid concerning the future:

However, that future is not fixed, and while the United States will seek to maximize positive outcomes and the common benefits that can accrue from cooperation, prudence requires that the United States balance against the possibility that cooperative approaches may fail to prevent disruptive competition and conflict.⁴⁰

An outstanding example of China's policy in the region, including the management of its relations with the United States, Japan, and South Korea, is related to North Korea. The widespread belief is that China has been playing a proactive role in the multilateral negotiation for a resolution of the nuclear equation⁴¹ (the Six-Party Talks) and that only inherent limitations independent of its goodwill have prevented a successful outcome so far. China's efforts would be congruent with its strategy of peaceful development or good neighbor policy, and Beijing was reportedly furious when Pyongyang conducted the nuclear tests. The reality is different, as the sinking of the *Cheonan* by a North Korean torpedo has shown. China refused to condemn North Korea and came out of the affair looking pusillanimous. The bond between China and North Korea, no longer cemented in the Korean War but in China's determination to delay as long as possible the unification of Korea, is as strong as it could be. In addition, North Korea is used by Beijing to test the United States. Here are the two explanations of the bilateral relations and the extravagant level of bilateral trade.⁴² Herein lies the reason for its refusal to chastise Pyongyang for its attack on the *Cheonan* as well. This dangerous and even silly attitude, which can only tempt North Korean leaders to try more outrage in the future, cannot allow China to claim any right to become a major international player.

Everyone now understands that if the choice for China is between a nuclear North Korea and the unification of the Korean Peninsula, Beijing will choose the former. China may not like North Korea's erratic conduct or its nuclear program, but there is

⁴⁰ Bennett, 2010.

⁴¹ The nuclear problem is not limited to North Korea's acquisition of nuclear weapon capability since Pyongyang does transfer ballistic and nuclear technology to third-party countries, notably in the Middle East (Iran and Syria are good examples).

⁴² Kim Jong Il visited China in May 2000, January 2001, April 2004, January 2006, and 2010. Chinese Presidents Jiang Zemin and Hu Jintao went to Pyongyang in 2001 and 2005, respectively. The bilateral trade jumped from \$329 million in 1999 to \$2.033 billion in 2008.

something much worse for China than a mercurial leader at its door: a border with a pro-Western Korea. Beijing's plan is not secret: It wants to integrate North Korea in economic networks so numerous that China and its influence will be everywhere when the time of the reunification of the Korean Peninsula finally comes. Only then will Korea be an acceptable unified neighbor—not before. Judging by the treatment of the *Cheonan* sinking, this time may be approaching. But a different future should also be contemplated, one in which China ignores that the Korean Peninsula might become the most dangerous place on earth once the fig leaf of stability is gone. As a matter of fact, the only predictable thing about Pyongyang is its unpredictability.

In the nuclear field, China does its best to hide what everybody now recognizes: It is the only nation among the P5 not only to leave open the possibility of producing more fissile materials for explosive purposes; not only to acquire new submarines, new ballistic missiles, new cruise missiles, and new warheads; but also to *increase* its ballistic and nuclear capabilities. Beijing recognized openly in April 2010 that it needs a limited second-strike capability to deter atomic threats, which is understandable. But how limited will it be, and who believes today the Chinese narrative concerning its arsenal, reportedly “the smallest” of the P5?⁴³ China does all of the above while openly supporting the goal of complete nuclear disarmament, as the Soviets did during the Cold War, precisely when they were developing their ballistic and nuclear capabilities. For example, there are reasons to suspect that multiple warheads will be put on new ICBMs and sea-launched ballistic missiles, something that would allow substantial increases in China's small nuclear force. Taking into account Chinese lack of transparency, those who believe in China's “minimum deterrent”⁴⁴ should insist on a capping of its production of fissile materials with a formal moratorium that all the other P5 would agree to sign pending a cutoff treaty.

The Chinese regularly state that U.S. national security strategy places increased importance on the role of nuclear weapons even when the opposite is obvious. However, if confronted with reality, China may be hard-pressed to explain itself. For reasons unknown, however, such open challenge from Washington never comes. The result is a relative success of China's propaganda, with its unverifiable no-first-use policy, as old as its first test in 1964; its official refusal to extend its protection over other nations (no extended deterrence⁴⁵); and its so-called minimum deterrence posture. China's lack of transparency in nuclear matters is increasingly questioned by its neighbors, including

⁴³ The commentary in the *Liberation Army Daily* came just after the Washington summit on nuclear security and nonproliferation in April and before the NPT Review Conference in May 2010.

⁴⁴ Actually, the 2005 *Science of Military Strategy* already presented three gradations of deterrence: maximum nuclear deterrence, minimum nuclear deterrence, and “nuclear deterrence of moderate intensity,” relying on sufficient and effective nuclear strike forces to threaten the opponent by incurring him an unbearable destruction. The third option is likely to be the real one in Beijing. Peng Guangqian and Yao Youzhi, *The Science of Military Strategy*, Beijing: Military Science Publishing House, 2005, p. 218.

⁴⁵ What about North Korea in case of attack against Pyongyang? Would China not intervene?

Japan, South Korea, and Taiwan, but the fact of the matter is, during the 2010 NPT Review Conference, China was the only nation among the P5 to refuse *any* transparency measure concerning its nuclear arsenal.⁴⁶ In Beijing, transparency is limited to no first use.

The U.S. 2010 NPR adopts a balanced stance concerning China:

The United States and China are increasingly interdependent and their shared responsibilities for addressing global security threats, such as weapons of mass destruction are growing. At the same time, the United States and China's Asian neighbors remain concerned about China's current military modernization efforts, including its qualitative and quantitative modernization of its nuclear arsenal. China's nuclear arsenal remains much smaller than the arsenals of Russia and the United States. But the lack of transparency surrounding its nuclear programs—their pace and scope, as well as the strategy and doctrine that guide them—raises questions about China's future strategic intentions.

In such a context, one wonders whether it is wise to insist so much in the NPR on “strategic stability with China.” Can Beijing accept “stability” in a position of inferiority? There is little evidence that it could. Therefore, does this mean that Washington tacitly accepts the building up of Chinese nuclear forces? This would be unwise and perceived as such by U.S. allies, particularly in the region but also beyond. As Robert Pfaltzgraff puts it: “The conscious perpetuation of US vulnerability in the mistaken belief that the result will be strategic stability makes no sense. It may even encourage China to attempt to exploit US vulnerability at a time of crisis and lead to undesired escalation based on miscalculation.”⁴⁷ (See below for further discussion on strategic stability.)

The strictly military aspects of China's rise may not be the most disquieting, compared with a serious cyberwar that could be launched much sooner by a nation already responsible for 50 percent of the world's cyberattacks (with Russia a close second). An electronic assault may have been behind the August 2003 power failures in the United States. In November 2008, a U.S. congressional panel warned that China is now in a position to delay or disrupt the deployment of America's military forces around the world, potentially giving it the upper hand in a conflict.⁴⁸ According to the panel's

⁴⁶ This is how China justifies opacity: “For a state adopting a no first use policy and intending not to waste too much money on unusable weapons, dependence on opaqueness to bring about greater deterrent value is a wise choice. One can achieve deterrence through the certainty of prospective costs outweighing prospective gains, as well as through the uncertainty in the cost/gain calculations. Deterrence works not only to reverse the enemy's original intention, but also to prevent him from forming such an intention for lack of information.” See Yao, 2010.

⁴⁷ Robert Pfaltzgraff, Jr., “China–U.S. Strategic Stability,” *The Nuclear Order—Build or Break*, Carnegie Endowment for International Peace conference, Washington, D.C., April 6–7, 2009.

⁴⁸ In 2007, 43,880 incidents of malicious activity were recorded targeting about five million computers in the United States. Ed Pilkington, “China Winning Cyber War, Congress Warned,” *The Guardian*, November 20, 2008.

report, China's ability to wage cyberwarfare is thought to be "so sophisticated that the United States may be unable to counteract or even detect the efforts."⁴⁹

The new *National Security Strategy* published in Washington in May 2010 may wish to "encourage China to make choices that contribute to peace, security and prosperity as its influence rises,"⁵⁰ but the Chinese policy concerning nonproliferation, climate change, its cyberattacks, and its response to evidence that North Korea sank the *Cheonan* are not going in that direction. The 2010 Chinese military doctrine and the continuous harassment of Japanese, Southeast Asian, and even American ships⁵¹ by Chinese vessels do not provide a good narrative, either. This may give Washington pause. Beijing appears to still be living in the Cold War, regularly parading old-fashioned state power combining thousands of performers, military hardware made in China, and heavy doses of propaganda. In the Pacific, the United States is facing an increasingly assertive PLA navy. China is not—or not yet—a world power carrying responsibilities. It may become a strategic headache, or worse, for the region (Taiwan, Japan, South Korea, Australia, and New Zealand) as well as for the West as a whole. Containment strategies that worked efficiently with the Soviet Union are unlikely to produce similar results with Beijing, because China is not a status quo power. But sustaining America's preeminence will also prove costly, with constant adaptation to a determined and threatening competitor.

Russia

The West tends to believe that because of the long experience of the East-West confrontation during the Cold War, it knows Russia much better than it does China. This is misleading. First, the Soviet Union may still not be that well understood, partly because the accessible archives are so limited,⁵² and second, the community of experts dedicated to the Soviet Union disbanded with the end of the Soviet world. Nothing comparable in quantity and quality has replaced it so far in the strategic field. Even though Russia continues to be a significant strategic player—sometimes because of its nuisance capability—and even though it remains a target for U.S., French, and British nuclear weapons, knowledge concerning Russia is becoming limited and scattered, while analysis is getting poorer, particularly when compared with the writings related to the USSR.

⁴⁹ It is interesting to note that the main spy agency in South Korea says North Korea is also suspected of engaging in cyberattacks targeting U.S. government sites. See CBS/AP, "North Korea Waging Cyber Warfare," CBS News, July 10, 2009.

⁵⁰ U.S. White House, *National Security Strategy*, May 2010a, p. 43.

⁵¹ For example, an incident with the U.S. surveillance ship *Impeccable* was reported in March 2009.

⁵² The Kataev archive of Soviet documents at Stanford University may be an exception.

Russia is behaving very differently than China. While China hides its achievements in order to reassure frightened neighbors or even nations beyond East Asia, Russia does the opposite: It overplays its capabilities in order to intimidate its vicinity and Europe. The Soviet mind-set (suspiciousness, imperial syndrome, desire to preserve Central and Eastern Europe as zones of possible expansion, attempts to drive a wedge between the United States and Europe⁵³) is still alive 20 years after the end of the Cold War. Russia's quest for security is all the more difficult to fulfill that, as Strobe Talbott once outlined, "the Russian word [for security] literally means 'absence of danger' . . . [Russia] has tended to feel absolutely secure only when everybody else, particularly those around its borders, feel absolutely insecure."⁵⁴ Moscow will continue to challenge the Western desire for cooperation, partnership, and shared responsibilities. Actually, the "reset" button may soon look more like an "overcharged" button⁵⁵ as the difficult negotiations on the New Start Treaty, the discussion on conventional military means, and the ambiguous policy regarding Iran have already shown.

The 2010 Russian military doctrine offers a view of Russian defense thinking, in particular concerning the West: NATO is still singled out as the first adversary, while there is no reference to China, not even at the bottom of the list.⁵⁶ Under the heading "Main External Military Dangers," one can read:

The desire to endow the force potential of the North Atlantic Treaty Organization (NATO) with global functions carried out in violation of the norms of international law and to move the military infrastructure of NATO member countries closer to the borders of the Russian Federation, including by expanding the bloc.⁵⁷

U.S. ballistic missile defense (BMD) plans are said to "undermine global stability" along with "the militarization of space and the deployment of non-nuclear high-precision weapons." Russia's demographic profile, separatist tensions, a rising China—

⁵³ Those attempts may prove that the Russians are delusional, but they nonetheless persist. After all, Moscow also believes that Arab revolts have been orchestrated by Internet networks imposed on Egypt, Tunisia, and Libya. See Interfax News, "Riots in Middle East Result of West's Subversive Information Technology—Russian Military Analyst," March 26, 2011.

⁵⁴ Strobe Talbott, *The War in Georgia: Assessing the Aftermath*, Washington, D.C.: The Brookings Institution, 2008, pp. 41–42.

⁵⁵ A reference to the mistake made in the Russian translation of *reset* (in Russian *perezagruzka* and not *per-egruzka*), underlined by the Russian press on March 7, 2009, with headlines like "Serguei Lavrov and Hillary Clinton pushed the wrong button." The misspelling, then seen as symbolic, may prove accurate as time passes.

⁵⁶ However, Ruslan Pukhov, director of the Moscow-based Center for Analysis of Strategies and Technologies (CAST), declared, "There are several states that claim part of Russian territory to be their national territory—for instance Japan." Roger McDermott, "New Russian Military Doctrine Opposes NATO Enlargement," *Eurasia Daily Monitor*, Vol. 7, No. 27, February 2010.

⁵⁷ "The Military Doctrine of the Russian Federation," approved by Russian Federation presidential edict on February 5, 2010.

to name only the three main threats Russia is facing—are downplayed in such a way that the document looks surreal. The doctrine also recommends strengthening the Collective Security Treaty Organization (CSTO), a loose military alliance among Russia, Belarus, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. (The CSTO’s secretary general, Nikolai Bordyuzha, insisted that Russia was ready to protect its allies, including with nuclear weapons.)

Concerning nuclear weapons, Moscow has concluded that it might be impossible to deal conventionally with potential aggressors, which are perceived to be all around Russia’s territory. Point 8 of the military doctrine says:

The Russian Federation retains the right to use nuclear weapons in response to the use of nuclear and other mass destruction weapons against it and/or its allies, as well as in reply to a large-scale aggression with the use of conventional weapons in situations critical to the national security of the Russian Federation.

Nuclear weapons in Russia are both a compensation for the loss of its traditional conventional superiority and a major political and psychological factor in its relations with the West.

In Moscow’s view, NATO “imperialism” after the end of the Cold War is responsible for all of Russia’s troubles.⁵⁸ According to this narrative, it seems that the Cold War never ended for a large segment of the Russian political and military elite. The choice of liberal democracy by some of its neighbors seems to affect Russia’s perception of its security more than a possible crash missile buildup by China. With this in mind, the West may come back to a less emotional and more realistic approach to Russia. What is needed, more than an illusory vision of Russia ending up in the Western camp after a period of transition, is lucidity about Moscow not seeking approval and pursuing what it considers to be its own interests. Moscow is also convinced that the West, including America and Europe,⁵⁹ will remain divided over Russia; that the growth of European investments on its soil will provide considerable influence with lobbying structures in Europe; and that the West is diverted from zones of Russian interest (the Black Sea, the Caspian Sea, and the Baltic Sea) for a while.

The worst-case scenario is not war with the West, but instability in the region separating Europe from Russia, Russia’s wish to acquire Western recognition of “zones of influence,” limited cooperation concerning Iran (even after Moscow’s acquiescence to the May 2010 1929 U.N. Security Council resolution), and the destabilizing factor of arms sales or transfer of advanced equipment to third-party countries.⁶⁰ Over the

⁵⁸ “The Military Doctrine of the Russian Federation,” 2010.

⁵⁹ President Obama views Europe with unfamiliarly cool detachment.

⁶⁰ For example, under an agreement signed in Beijing in 2008 by President Medvedev, China will receive sixth-generation gas centrifuges and a high-capacity fast breeder reactor that can have military applications.

longer term, Russia risks suffering from its weak demography, its excessive reliance on energy exports, its lack of economic diversification, and its appalling corruption. None of the above indicates that Moscow will choose to move closer to the West, whether to Europe, America, or both. The United States, for all the good words coming from Washington (including the famous “reset”), is not trusted, in particular after the military campaign over Kosovo (1999), the U.S. withdrawal from the ABM Treaty (2002), and successive NATO enlargements. Worse, it is popular in Russia to be anti-American, something to take into account as presidential elections approach. Most recently, Russia’s abstention concerning the U.N. Security Council resolution imposing a no-fly zone over Libya in March 2011 was almost immediately followed by strong criticisms on the military operation, even though it was consistent with the U.N. mandate.

Just before the signing of the New Start Treaty, a campaign was launched in Russia against START I. This treaty had expired in December 2009, but the campaign against this dead treaty was as aggressive as if it were a brand-new one. Even though some Republicans were convinced that “Obama’s negotiators” did not protect American interests seriously, which may or may not be the case, the Russian Duma did not oppose the new treaty—with the exception of members insisting on U.S. “reloading” capabilities,⁶¹ BMD,⁶² and conventional superiority.⁶³ U.S. and Russian officials continue to disagree publicly about the content of New Start, notably on missile defense.⁶⁴ But New Start’s ratification eventually took place and the treaty entered into force in February 2011. The next steps are unclear and will probably remain unclear for some time, taking into account disagreements and elections in 2012 in both countries.

In geostrategic terms, the difficulties along Russia’s southern border (Islamic radicalism, poor governance, unresolved conflicts, terrorism) are likely to get worse, while in the north, Caucasus will probably remain a troubled region for a long time. In addition, even if there is no public mention of it, no Russian analyst would exclude renewed tension with China in the coming 15–20 years, whether in Central Asia or in the Russian far east. Moscow does not ignore the possibility that when Beijing gets a serious

⁶¹ The counting rules will be controversial on both sides. On the Russian side, some weapon systems that could add to the American offensive power are thought to be discounted.

⁶² The new treaty mentions the interaction of offensive and defensive arms but does not legally limit the development of American BMD systems.

⁶³ Russia fears, for example, that part of the reductions will be implemented in the United States through conversion of strategic nuclear weapons to strategic long-range conventional weapons.

⁶⁴ The question is whether the U.S. negotiators have agreed on any restraint related to missile defense. Russian Foreign Minister Sergei Lavrov says Moscow can withdraw from the treaty if “the US’s build up of its missile defense strategic potential in numbers and quality begins to considerably affect the efficiency of Russian strategic forces,” while Secretary Clinton insists that “the treaty has no restrictions on our ability to develop and deploy our planned missile defense systems or long range conventional strike weapons now and in the future” (Kim R. Holmes, “New START Negotiations: Show Us the Records!” *Washington Times*, May 26, 2010). Only a careful review of the negotiating record can set the record straight.

and challenging military capability, it will decide to come out in the open and become more threatening. Fortunately, Russia has now resolved many of its border disputes with China. But what is Russia's objective in Asia? Is it to export energy at high prices, keep control of Central Asia, retain eastern Siberia, and contain the Chinese military buildup? Or is it simply to play a risky tactical "partnership" with Beijing, seen as the potential major adversary of the United States? Absurd as it may initially sound, the second hypothesis appears to be the more credible, especially given the 2010 Russian military doctrine.⁶⁵ Russia and China feel the limitations of their efforts to increase their own weight and influence in international affairs, and both try to consolidate negotiating positions in building "the future world order."

No one would ask Russia to give up its view of itself as a continent rather than a nation as long as it does not bully its neighbors, whose concerns should be treated seriously. Moscow is constantly seeking assurances from its neighbors that they will not join the West and try to get recognition from the West of a legitimate sphere of influence, with limited sovereignty for nations concerned. This is an idea brought back from the Cold War grave, as Ronald Asmus rightly said, one called "Finlandization," a term that does not do justice to courageous Finland, but one that a weak West may allow to come back.⁶⁶

In July 2010, Vladimir Putin went to Sevastopol, Ukraine, roaring into an international biker convention with a Russian flag in the background. Since the collapse of the Soviet Union, Sevastopol has been part of an independent Ukraine, and the 2017 expiration of the fleet lease on its Sevastopol base has significant implications for Russia, which has been reasserting its military might. Ukrainian President Viktor Yanukovich prolonged the agreement, but this decision may not be good enough for Moscow.

Any practical scenario involving nuclear weapons looks highly unrealistic except in the context of a conflict with China, the most feared neighbor, which lost part of its territory during the time of Russia's grandeur with the so-called unequal treaties. But even though Beijing is feared by lucid Russian officials and security experts, such a scenario appears remote. Russia would rather continue developing its anti-Western propaganda and trying to coerce its neighbors—a prospect that is troubling enough, particularly since many of those neighbors are NATO and/or EU members—but nuclear weapons can hardly be contemplated, even to coerce. In the south, Russian nuclear weapons can hardly be used as either a means to deter or a means of warfare. So, again, only a China scenario would make sense, particularly since with fewer nuclear capa-

⁶⁵ Sergei Karaganov notes that "the availability of the Chinese alternative strengthens Russia's position in bargaining with the West." "The Past Year and the Upcoming Decade," S. Karaganov personal website, February 15, 2010.

⁶⁶ See Ronald Asmus, "The Specter of Finlandization," GMF Blog Expert Commentary, German Marshall Fund of the United States, May 27, 2010.

bilities, China would be much more tolerant of human losses. Moscow knows it. It also knows that deep cuts in nuclear forces after New Start would encourage China's buildup.

Finally, it is worth underlining in the event of future talks with Moscow that it is hard to understand its geostrategic picture as expressed in March 2011 by Military Sciences Academy President General Makhmud Gareyev: "Regarding security, Russia has never been in such a crunch as in the early twenty-first century since perhaps, 1612."⁶⁷ Forget 1941, and forget the Cold War, particularly after 1960, when both China and the United States were considered hostile. The delusion of the Russian side will be the most dangerous element to deal with in the coming years.

An Elusive Strategic Stability

In the 21st century, there is a potential nuclear triangle among the United States, Russia, and China that may be considerably more difficult to handle than the bipolar relationship that existed in the 20th century. Triangles are inherently unstable, particularly when the nations concerned are empowered with ballistic missiles and nuclear weapons.⁶⁸ Each of the three powers has to make calculations regarding the evolution of the other two; two of the three may combine their forces against the third, and this kind of alliance may only be temporary; and in case of crisis, the uncertainty grows with the presence of a third actor. In George Orwell's novel *Nineteen Eighty-Four*, the world is divided among "the Big Three," all of them totalitarian. They combine but switch sides frequently. As Martin Wight recalls, "Triangles tend to be mobile figures of shifting alliances and negotiations."⁶⁹

In the case of the United States, Russia, and China, there would be only two dominant powers of different caliber (the United States and China) and a third force (Russia, which can no longer be called a great power). If triangles "are relationships of conflict" that "are resolved by war,"⁷⁰ what can be expected from this particular triangle? For the time being, Washington has prioritized China and Russia in the 2010 NPR, frequently associating them with "strategic stability." In the NPR, China and Russia are no longer presented as "contingencies" (even though both nations are still targeted in U.S. nuclear planning) but as partners with whom to discuss strategic

⁶⁷ Robert Bridge, "Russia Must Prepare for New 'Times of Troubles' Says Military Analyst," *RT Network*, March 28, 2011.

⁶⁸ Strategic triangles have existed in various periods of history (for example, Rome, Carthage, and Macedonia in antiquity or Prussia/Austria and France or France/Russia and Britain in the 19th century) but never with weapons as destructive as those present today in the arsenals of the United States, Russia, and China.

⁶⁹ Wight, 1977.

⁷⁰ Wight, 1977, p. 179.

stability. The Ballistic Missile Defense Review, for its part, has done its utmost to assure China and Russia of the absence of any U.S. plans to counter China's or Russia's deterrence capabilities.

Rhetoric aside, how will the United States craft strategic stability with both Russia and China? The NPR offers no answer to this legitimate question. Thinking on the subject is not easy, particularly if government officials are pressed to reach public conclusions. It appears highly probable that strategic stability will be defined by both Russia and China—if they eventually agree to engage in such discussion⁷¹—in wider terms than in terms of nuclear parity. In principle, the United States, which never equated “strategic” with “nuclear,” should have no problem accepting this. But difficulties would start just after this simple recognition. First, both Moscow and Beijing want to constrain advanced U.S. conventional capabilities, U.S. missile defenses, and alliances with the United States in their neighborhood. Washington can make some gestures (offer cooperation on missile defense to Moscow⁷² or reassure Beijing on the value of its nuclear deterrent⁷³), but those will hardly be enough. Second, on the American side, it would only be natural to enlarge the concept as well and ask Moscow to clean up its ballistic weapon archipelago for good,⁷⁴ while China might be asked to adhere to some rules in space and cyberspace.

A year from now, the different definitions of strategic stability in the three nations are likely to endanger the optimistic scenario delineated in the NPR.⁷⁵ On the Russian side, missile defense, Prompt Global Strike, and NATO's presence in Russia's periphery are going to remain contentious bilateral issues, while its own clandestine ballistic weapon activities are unlikely to be acknowledged. In addition, the primary source of instability in Moscow's mind being its own decay, U.S. military and diplomatic superiority are going to be fought with all the available means, including influence, negotiations, intimidation, and espionage. The nostalgic empire perceives any secure neighbor as a threat, as if projecting fear were the only means of ensuring security. While the historical roots of this mind-set are well known, it clashes with stability as defined by most other countries (and certainly by Russia's neighbors). For example, on the subject of missile defense, Moscow insists it is prepared to shield contiguous Eastern European

⁷¹ China has so far shown little enthusiasm for talks on strategic stability.

⁷² So far with limited success. Russia may regard Iran's nuclear capability as an unwelcome prospect, but it continues to oppose American defense capabilities against it.

⁷³ Without going too far in this direction, though. For example, there is no intention in Washington of entering into any MAD relationship with China, nor of giving Beijing any “strategic reassurance,” as was sought by Chinese authorities while the 2010 NPR was being drafted.

⁷⁴ Concern about Russian violation of the BWC persists, notably with regard to facilities under the control of the Russian military.

⁷⁵ Let's not forget that even during the Cold War, the United States and the Soviet Union never agreed on what strategic stability exactly meant. For a comprehensive discussion on strategic stability, see David S. Yost, *Strategic Stability in the Cold War*, IFRI Security Studies Center, Winter 2011.

states from missile threats: “Naturally, Russia should be in charge of the eastern sector encompassing the territories of the contiguous states and seas,” declared Russian Space Forces Commander Lt. Gen. Oleg Ostapenko on April 29 in Moscow.⁷⁶ Would the Baltic states or Poland consider such a possibility? Unlikely. And Washington will not swallow any of this, either.

As for China, stability is satisfactory as long as China’s status, meaning the “Middle Kingdom” under new guise, is restored. More than projecting fear, Beijing wants recognition of its superiority. The bottom line is “China is big” and deserves respect as such. Such was the motivation for Beijing’s totally disproportionate reaction to Tokyo’s decision to detain and charge the captain of a Chinese fishing trawler in September 2010. China needs to learn the measure of a great power, but it may never get there. It apparently enjoys looking like a bully. Beijing may therefore be exploiting the U.S. desire for partnership only to the extent that it buys it an additional decade of breathing room to become *really* big. Is it in the interest of the United States to endorse this line of thought and conduct? Hardly. In addition, the primary source of instability for China being the United States (in decline in China’s mind but still the big hegemon in China’s speeches), it is hard to imagine what kind of strategic stability can be crafted with Beijing.

Sino-Russian relations have improved largely because both nations wish to constrain American power. The border dispute was resolved in 2004, some joint military exercises have been conducted, and China has benefited enormously from Russia’s willingness to export modern weapon systems (aircraft, submarines, cruise missiles, and air defense systems) and advanced technologies (notably in the field of uranium enrichment). In essence, China views the rapprochement as bringing more stability because it increases China’s power and influence. Russian policy is less clear and sometimes debated by Russian experts who worry about China’s military rise. In Central Asia, the two nations are in competition: Their only common goal is related to U.S. withdrawal. What will happen next? In the Middle East and in East Asia, there is some Sino-Russian coordination to constrain Western efforts toward sanctions on Iran and North Korea. From this perspective, both countries bear some responsibility in the advance of both Iran’s and North Korea’s ballistic and nuclear programs, even when technological cooperation between them and the two nuclear aspirants is set aside.

With this in mind, how can strategic stability be crafted among the United States, China, and Russia? At the simplest level, strategic stability could mean securing the nuclear peace and preventing escalation in times of crisis. In principle, the Russians could be a satisfactory partner because of historic experience, competence, and a genuine desire to avoid worst-case scenarios. Less is known about the Chinese: Would they reject or favor deliberate escalation in wartime? One thing that is clear is that

⁷⁶ Global Security Newswire, “Russia Set for ‘Intensive’ Missile Shield Talks with U.S.,” Washington, D.C.: Nuclear Threat Initiative, May 3, 2011.

interest in this topic is growing in the PLA.⁷⁷ Chinese writings continually emphasize the need to secure and maintain the political and military initiative, highlighting how difficult it is to regain once lost. This is probably the area where escalation with China is a concern.

Russia used to state in its doctrine that it would not hesitate to resort to nuclear weapons when faced with possible defeat in a limited conventional conflict. The most recent Russian military doctrine states a more moderate position:

The Russian Federation reserves the right to utilize nuclear weapons in response to the utilization of nuclear and other types of weapons of mass destruction against it and (or) its allies, and also in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under threat.⁷⁸

The contradiction between the declared Russian doctrine and Russia's military exercises may provide a different insight, but in practice, nuclear escalation in a limited conventional conflict can be considered unlikely. China, on the contrary, repeatedly states a no-first-use policy in the Second Artillery's publications. However, first, such a policy may be useful mainly in the diplomatic arena, and second, one wonders whether a probable conventional defeat against Taiwan, China's most important territorial dispute linked to the legitimacy of the Chinese Communist Party, could be politically acceptable for Beijing. In other terms, on the ground the two nations might behave in ways that contradict their doctrines. This would be consistent with their patterns of behavior, Russia overplaying its hand and China underplaying it.

In case of a U.S.-China confrontation over Taiwan, what would Russia do? The most likely answer is nothing. With no clear stake in the conflict, Moscow would not risk becoming a target of either Beijing or Washington. Some would argue, though, that Russia *may have a stake in this conflict*. A Chinese victory over Taiwan might be followed by the wish in Beijing to recover territories in the eastern part of Siberia. Would this possibility lead Russia to openly challenge China during such a conflict? Most probably not. But the United States may count on a neutral Russia, forgetting any strategic partnership with China.

Any serious Russia-China confrontation, on the other hand, may raise questions in Washington about the possibility of intervening on the Russian side because of wider interests. The least that can be said is that Moscow does not facilitate thinking in the direction of such a scenario, which would imply an extraordinary level of rapprochement with Washington. But the reality is there and it is troubling: As President Kennedy understood at a very early stage, China is fundamentally more dangerous

⁷⁷ See "China's Thinking on Escalation: Evidence from Chinese Military Writings," in Morgan et al., 2008, pp. 47–81.

⁷⁸ See paragraph 22 of the 2010 Russian military doctrine.

than Russia.⁷⁹ This should be the perception in the West after decades of interaction. We can only imagine what China would be capable of doing if it perceived the United States having serious difficulties accessing the region, starting with the contested Senkaku Islands. From this viewpoint, Richard Nixon may have lost his bet.

There is a widening divide between two categories of big nations: those convinced that the main challenge of the 21st century is to prevent major crises from emerging, fight nuclear and biological proliferation, and jointly manage the global commons, and those that continue to engage in power politics and competition.

In the latter category, China is the most daring. Russia may continue to harass its neighbors, particularly if Moscow's reading of the 2008 Georgian war is that it provides a telling example of the West's lack of reaction, but it will probably pose no major challenge in the foreseeable future. In the former category, one finds European nations, America, and—a good surprise—increasingly India, which is progressively displaying the intent to rise as a responsible global power.

These two worlds are hardly reconcilable, and they may collide. More substantial thinking on power politics may be required in the first group of nations, regardless of their preference for a more cooperative and stable world where most states increasingly share the same interests. Stability itself may require such thinking. If strategic engagement integrates a competitive dimension, it may work considerably better *because it will be in tune with reality on the ground*. A good example is the improvement of U.S.-Chinese relations in 2010, coinciding with a more sober view of China in the Obama administration.

A last point is related to priorities. The 2010 NPR gives top priority to nuclear terrorism and nuclear proliferation.⁸⁰ Then the goal of “reducing the role of US nuclear weapons in US nuclear security strategy” is asserted.⁸¹ Maintaining strategic deterrence is third on the list. This order is weird.

First, *Washington's fixation on nonstate terrorism tends to obscure more dangerous possibilities*. Nonstate terrorism would not be so prominent if all nuclear states acted responsibly and protected their nuclear assets in an effective fashion. (From this perspective, the acceptance of Pakistan's lack of commitment at the 2010 Washington Nuclear Security Summit is hard to understand.)

⁷⁹ Declassified documents from the U.S. National Archives show that John F. Kennedy seriously contemplated a military strike against the nascent Chinese nuclear capability in the early 1960s—before the first Chinese nuclear test—because of this belief. Soviet officials, who had been approached, rebuffed any coordinated action. The debate resurfaced in 1964, the Soviets were approached again, and Washington's proposal was again rebuffed. See Karl P. Mueller, Jasen J. Castillo, Forrest E. Morgan, Negeen Pegahi, and Brian Rosen, *Striking First: Preemptive and Preventive Attack in U.S. National Security Policy*, Santa Monica, Calif.: RAND Corporation, MG-403-AF, 2006, pp. 152–170.

⁸⁰ As stated by Robert Gates on the opening page: “This NPR places the prevention of nuclear terrorism and proliferation at the top of the US policy agenda.” DoD, 2010b.

⁸¹ DoD, 2010b.

Second, nuclear proliferation would be much easier to contain with the decisive help of both Russia and China. If both states have decided that such cooperation is not in their national interest, then a troubling conclusion may be that competition with the United States and the West overall is a higher priority. This should put strategic deterrence in the first row, not in the third.

Third, it is even harder to understand why “reducing the role of US nuclear weapons in US nuclear security strategy” comes *before* maintaining strategic deterrence and extended deterrence. The right formulation would rather have been: “to maintain central and extended deterrence at reduced levels as long as nuclear weapons exist.”

Fourth, maintaining deterrence with both Russia and China, two states with a mix of cooperation and competition—and a kind of cooperation that shines when competition with the United States is at stake—will be hard. It may succeed, but it may also fail. Though failure may be unlikely, it would pose formidable risks, particularly if one takes into account the ambiguous ties both states have with Iran and North Korea. Therefore, the possibility of failure warrants hard work to prevent it, including transatlantic work.⁸²

Finally, we should never forget that “a world resting on mutual vulnerability not by chance but willingly is and will remain extraordinary. Experts can use it for smart presentations, but public opinions will never buy it for long.”⁸³ It remains unclear whether the USSR ever adopted this mostly Western view. And even though Beijing might wish to reach nuclear parity with the United States if it would not mean engaging in a costly nuclear arms race,⁸⁴ it appears even more questionable in Beijing than it was in Moscow whether this kind of nuclear stability is of any interest. Actually, China’s nuclear buildup should be viewed in the context of other military activities, including cyberattacks, antisatellite tests, and growing maritime capabilities. All of this is *not* meant to promote stability.

⁸² In its 2008 Defense White Paper, France devoted some thinking to East Asia for the first time, including the consequences for Europe of a clash over Taiwan.

⁸³ Thérèse Delpech, “Ballistic Missile Defense and Strategic Stability,” in Paolo Cotta-Ramusino and Maurizio Martellini, eds., *Missile Threats and Ballistic Missile Defense: Technology, Strategic Stability, and Impact on Global Security*, Como, Italy: Landau Network-Centro Volta, 2001, p. 56.

⁸⁴ For example, if in the future Washington contemplated reducing the American nuclear arsenal to the level of 1,000 warheads.

Space and Cyberdeterrence

It's politically sensitive, but it's going to happen. . . . We're going to fight in space. We're going to fight from space and we're going to fight into space.

—General Joseph Ashy, former commander in chief, U.S. Space Command¹

Cyber security risks pose some of the most serious economic and national security challenges of the 21st Century.

—*Cyberspace Policy Review* 2010²

Since the late 1940s, most works on deterrence have been dedicated to nuclear weapons associated with conventional means such as aircraft, ships, and tanks (conventional deterrence having been part of the overall deterrence doctrine all along, particularly in the United States). Today, deterrence faces a broader spectrum of challenges, and space and cyberspace are among them. Both domains have gained a new prominence and deserve serious attention. To mention only two recent examples, China demonstrated its ability to destroy satellites in January 2007,³ and in October 2010 the Stuxnet cyberworm affair inaugurated the era of major sabotage operations directed at industrial sites' command and control systems.⁴

In other words, to write a book on deterrence in this day and age without mentioning those two contested global commons, as different as one may be from the

¹ Quoted in William B. Scott, "USSC Prepares for Future Combat Missions in Space," *Aviation Week and Space Technology*, Vol. 145, No. 6, August 5, 1996, p. 51.

² U.S. White House, *Cyberspace Policy Review: Assuring a Trusted and Resilient Information and Communications Infrastructure*, Washington, D.C.: Government Printing Office, May 2009.

³ This was followed exactly three years later, in January 2010, by the destruction of a ballistic missile using hit-to-kill technology.

⁴ Stuxnet, tailored for Siemens supervisory control and data acquisition (SCADA), was able to recognize a specific facility's control network and then modify it or destroy it. Stuxnet's targets are suspected to be Iranian nuclear facilities. This complex computer worm has affected industrial sites in Russia, Indonesia, India, China, and Iran. The computer worm is the first one specifically created to take over industrial control systems rather than steal or manipulate data.

other, would be exceedingly narrow. Security scholars are now paying more and more attention to space and cyberdeterrence,⁵ analyses are becoming available,⁶ and government officials, particularly in nations that rely heavily on computer networks, express growing concern about their ability to prevent and resist attacks, identify them, and respond to them. Both domains present obvious—some would say nightmarishly obvious—challenges to classic deterrence theory (notably concerning certainty, severity, and celerity).

This judgment may be exaggerated, but it deserves discussion: What are the main differences among space, cyberspace, and nuclear weapons in terms of deterrence? What are the main threats posed by cyber or space attacks? How are they evolving? How difficult is it to predict them, to prevent them, and to discourage them? Could passive defense be effective? What are the criteria for space deterrence that is deemed effective? And what are they for effective cyberdeterrence?

There are many differences between space and cyberspace, including in their relationship to deterrence. Therefore, they are discussed in separate sections below. They do share some common characteristics, however, which may be described as follows:

- Space and cyberspace, not unlike the high seas, are stateless. They are the most globalized areas.
- Attribution is hard, though not impossible. It is more difficult with attacks on computers than it is with attacks on satellites.
- Attacks can occur without any warning. There can be short-term and even undetected attacks.
- Cyber or space attacks may not involve direct loss of human life.
- The ability to estimate the consequences of such attacks is questionable.

⁵ The term *cyberdeterrence* appeared in 1994 in an issue of *Wired* magazine. James Der Derian, professor of international relations at Brown University, wrote an article whose subtitle, “Wired visits the digital battlefield of Desert Hammer VI to see whether the US Army can win the next war without firing another shot,” is in itself full of irony. James Der Derian, “Cyber-Deterrence,” *Wired*, Vol. 2, No. 9, September 1994.

⁶ On cyberdeterrence, see Martin Libicki, *Cyberdeterrence and Cyberwar*, Santa Monica, Calif.: RAND Corporation, MG-877-AF, 2009; Stephen Blank, “Can Information Warfare Be Deterred?” in David S. Alberts and Daniel S. Papp, eds., *Information Age Anthology, Volume III: The Information Age Military*, Washington, D.C.: Command and Control Research Program, 2001; Richard Kugler, “Deterrence of Cyber Attacks,” in Franklin D. Kramer, Stuart H. Starr, and Larry K. Wentz, eds., *Cyberpower and National Security*, Washington, D.C.: NDU Press, 2009; and K. A. Taipale, “Cyber-Deterrence,” in Pauline C. Reich and Eduardo Gelbstein, eds., *Law, Policy and Technology: Cyberterrorism, Information Warfare and Internet Immobilization*, Hershey, Pa.: IGI Global, 2012. On space deterrence, see Bill Sweetman, “Debating Space Deterrence,” blog post, *Ares: A Defense Technology Blog*, AviationWeek.com, August 12, 2010; Secure World Foundation, *Space Deterrence Concept of Increasing Relevance to Security of U.S. Space Assets*, Broomfield, Colo., April 2009; Robert Butterworth and John Sheldon, *Deterrence in Space: Responding to Challenges to the US in Outer Space*, Washington, D.C.: The George Marshall Institute, November 2008; Roger G. Harrison, Colin G. Shackelford, and Deron R. Jackson, *Space Deterrence: The Delicate Balance of Risk*, Colorado Springs, Colo.: Eisenhower Center for Space and Defense Studies, 2009; and Forrest E. Morgan, *Deterrence and First-Strike Stability in Space: A Preliminary Assessment*, Santa Monica, Calif.: RAND Corporation, MG-916-AF, 2010.

- The offense-dominant nature of space and cyberspace warfare in the foreseeable future ensures that an attacker will have the initiative.
- Cyber and space weapons may be used not only in wartime but in peacetime as well, without any apparent international crisis; in case of conflict, the attacker can simply scale the attacks upward.
- The potential use of proxies, notably in cyberspace, is considerable and limits the probability of attribution to the true attacker and hence that of effective response.
- Few international laws or even norms define unacceptable behavior in either space or cyberspace.⁷
- First strike, escalation, and extended deterrence all have to be reinvented in such contexts.

Do such characteristics really make deterrence in both areas “nightmarishly” difficult? Or do most current analyses evoking “strategic” space and cyber threats, including space and cyber Pearl Harbor, overestimate the likelihood of such massive attacks and the difficulty of preventing them? The lack of concrete cases in many analyses, the consequent overreliance on abstract schemes and data, the constant and dynamic change affecting cyberspace, and the diversity of threats make an authoritative answer difficult. But the most dramatic cyberattack so far—in 2007 against Estonia, a country that depends heavily on its cyber infrastructure—greatly affected the Estonian government, banking, and media websites . . . for 22 days. During this period, the nation was almost paralyzed. Afterward, however, Estonia responded effectively, and as a result, its cyberdefense strategy and capabilities—as well as NATO’s—have improved.⁸

More threatening than a massive attack of this kind, which allows government authorities to react and ask for help from allies, may be the ability of an attacker to insert malicious codes in peacetime that can steal sensitive information and/or be activated in wartime to cripple the military command and control systems. This is an area where protection, defense, and deterrence should concentrate major efforts and become more effective over time. As a matter of fact, this type of attack could mean not a tactical but an *existential* threat—i.e., a threat to vital or core interests. The best defense in this case should be coordinated with some offensive actions in order to hamper the adversary’s offensive activity.⁹

⁷ This means in particular that there are currently no precise norms of acceptable behavior in space. It also means that states refraining from attacking others cannot be assured that they will not be attacked themselves. That being said, the laws of war contain a number of elements with at least indirect implications in both domains.

⁸ In addition, the Cooperative Cyber Defense Centre of Excellence in Tallin has a high-security laboratory where some of NATO’s best cyber experts are trying to predict the evolution of cyberwarfare. The center contains dozens of experts gazing into the fifth battlespace.

⁹ Dangerous adversaries know the weaknesses of the defenses and they only need to find a single vulnerability, while defenses can never be 100 percent secure. The same dilemma exists in the relationship of missile defenses versus nuclear weapons. The former are a complement to nuclear deterrence, not a substitute.

Advanced countries are obviously exposed to space and cyberattacks to a greater degree because of their dependence on space assets and computers. There is a growing awareness among them concerning the new threats¹⁰—even if the threats still appear to be growing more rapidly than advanced countries’ understanding of them. *The United States is in a unique position* because of its intensive and extensive use of space-based systems and computer networks. It possesses known asymmetrical advantages in space and information technologies, but its superiority is associated with a major weakness: the vulnerability of its space and cyber assets to attacks. In the whole world, the United States is *the* nation-state that has the most to lose in both space and cyberspace. *How it can secure its space and cyberspace advantage for its own sake and that of its allies is one of the most important security questions at the beginning of the 21st century.*

This is all the more necessary because America’s adversaries have a keen interest in developing capabilities to attack U.S. space and cyber assets. They—notably China and Russia, but North Korea and Iran as well—have already demonstrated this interest as well as their rapidly evolving capabilities. As the United States contemplates potential responses to space or cyberattacks, it must not only find effective responses in those domains but also identify an adversary’s assets to hold at risk other than space and cyber capabilities, since escalation restricted to space and cyberspace would be detrimental to U.S. security interests when confronting able adversaries. This widens the scope of possible responses, but it does not make the problem any easier: As a cyberdeterrence analyst pointed out, some limits should be adopted in the choice of the response, since it may not be either proportionate or legitimate “to kill people who kill bits.”¹¹

Finally, as the whole world becomes more dependent on space and cyber technologies over time, more countries are becoming vulnerable to attacks in a world where state boundaries are increasingly meaningless. Russia, China, India, Israel, and Iran have all, in various degrees and forms, incorporated the capabilities provided by the new technology. Sharing information among allies concerning the evolution of the threat, ways to counter it, best practices, and the messages to convey to attackers is becoming indispensable in both defending against and deterring attacks. NATO seems to have reached this conclusion. In a February 2010 speech to the Atlantic Council, Secretary of State Hillary Clinton declared that “in the twenty-first century, the spirit of collective defense must also include non-traditional threats.”¹² The new strategic concept contains cautious language to this effect.

¹⁰ For example, the 2008 French Defense White Paper (French Government, *Livre Blanc sur la Défense et la Sécurité*, Paris: Editions Odile Jacob, June 2008) explicitly recommends active defense (offensive capabilities complementing defense measures) and the UK Ministry of Defence published a “green paper” in February 2010 (Government of the United Kingdom, *The Defence Green Paper: Adaptability and Partnership: Issues for the Strategic Defence Review*, London: Ministry of Defence, February 2010). As far as the United States is concerned, it reviewed its cyberstrategy in 2009–2010 and created U.S. Cyber Command (USCYBERCOM).

¹¹ See Taipale, 2012.

¹² Hillary R. Clinton, “Remarks at the NATO Strategic Concept Seminar,” speech, Ritz-Carlton Hotel, Washington, D.C., February 22, 2010. The Group of Experts, convened by the NATO secretary general and chaired

To sum up, the following questions should be considered. First, what do we want to deter? Certainly not every cyber or space attack, since most do not pose serious civilian or military threats. What need to be deterred are *only the most significant attacks* for both national security and the protection of our societies' way of life. The level of threat should therefore be identified, preferably in cooperation with allies. Second, is attribution a lost cause, or is it still possible to make progress in this area? Progress is in fact probable; signatures are already easier to identify than they were some years ago. Mapping infected facilities, for example, may provide clues to the identity of cyberattackers. Third, can passive defense (for example, identifying vulnerabilities of computer networks and taking steps to remedy them) be a successful strategy in the cyber domain, or is it some 21st-century version of the medieval walls, at a time when cruise missiles have already been deployed? This author tends to believe that the latter is closer to the truth. Fourth, if meaningful arms control looks nightmarishly remote (here the expression may be pertinent), there could at least be some generally accepted international norms concerning unacceptable behavior. For example, some of the most disruptive types of attacks could be prohibited, and when suspected of an attack in peacetime, a country should not be allowed to refuse to contribute to the investigation.

Space

For 50 years we have succeeded in not shooting at each other in space, which is quite an accomplishment. As space gets much more crowded and space assets become more critical to national economies and militaries, will this peace last, or will space war become increasingly difficult to prevent? In 30–40 years, the space landscape will have been deeply transformed by new orbital management techniques, more diverse players, and space applications increasingly devoted to societal security issues. This transformation should be anticipated.

There are a number of important differences between the situation in the 20th century surrounding space assets and the current situation. First, during the Cold War, counterspace capabilities may have existed in large numbers, but there was no need to deter attacks on space-based systems: Both superpowers had a shared interest in preventing them.¹³ Space systems were somehow off-limits. Second, if satellites

by Madeleine Albright, concluded in its report that “the next significant attack on the Alliance may well come down a fibre optic cable. Already, cyberattacks against NATO systems occur frequently, but most often below the threshold of political concern. However, the risk of a large-scale attack on NATO’s command and control systems or energy grids could readily warrant consultations under article 4 and could possibly lead to collective defense measures under article 5.” North Atlantic Treaty Organization, *NATO 2020: Assured Security; Dynamic Engagement*, May 17, 2010.

¹³ Even though, for example, there was never any bilateral Soviet-U.S. agreement on ASAT arms control negotiations back in 1978 and 1979.

provided significant means of surveillance, they were essentially military satellites. Today, commercial systems like Skybird provide good surveillance capabilities, be they for the observation of military maneuvers, suspected clandestine WMD sites, missile launches, or previously unknown military bases.¹⁴ Third, space systems have considerably enhanced conventional war-fighting capabilities, making military operations more discriminate and precise but also acting as a force multiplier; they also play a decisive role in securing economic prosperity. Fourth, the temptation to disrupt or destroy space systems has become stronger for potential adversaries, and ground station assaults or cyberattacks on space assets could be contemplated even by nonstate actors.¹⁵ Finally, access to space is no longer limited to a select club of major powers, as was the case during the 20th century: There are more than 50 countries that own and operate satellites, in addition to various private operators.¹⁶ To sum up, attacks on space assets today can cripple vital military capabilities, degrade crucial civilian infrastructures, create massive debris fields,¹⁷ and prevent effective use of the space environment. In addition, as already mentioned, space capabilities are proliferating.

In July 2000, over ten years ago, the Xinhua news agency reported that the Chinese military was preparing to defeat the United States in a high-tech, space-based war: "For countries that could never win a war by using the method of tanks and planes, attacking the US space system may be an irresistible and most tempting choice."¹⁸ China has made significant progress since then and is becoming a serious space actor. But China is far from being alone in this respect. First, Russia is still highly suspicious concerning America's space policy, convinced that the ultimate goal of any U.S. administration is exclusive military superiority over other space nations;¹⁹ and second, even regional powers are acquiring space capabilities. Tehran successfully launched a

¹⁴ The Al Kibar reactor in Syria, the Qom clandestine centrifuge facility in Iran, and the Chinese submarine base in Hainan were all discovered thanks to satellite imagery.

¹⁵ After all, satellites follow predictable orbits, making an attack on unprotected assets relatively easy.

¹⁶ In principle, avoiding conflict in space is an issue of concern to all of these space users.

¹⁷ The Chinese ASAT test in January 2007 generated the release of an estimated 35,000 pieces of orbital debris, putting all spacecraft in this region of space at risk. The test provoked international outrage, particularly from the commercial space community.

¹⁸ Al Santoli, "Beijing Describes How to Defeat US in High-Tech War," *China Reform Monitor*, No. 331, September 12, 2000, cited in Tom Wilson, "Threats to United States Space Capabilities," Washington, D.C., prepared for the Commission to Assess United States National Security Space Management and Organization, 2001, p. 5.

¹⁹ On December 3, 2010, for example, when the X-37B landed at the Vandenberg air base in California after having taken off on April 22, Moscow interpreted the successful flight of the unmanned spaceship as an important phase in space militarization. The flight tested navigation and targeting systems, maneuverability in orbit, the stability of thermal insulation, and the reliability of spaceship units and experimental technologies. This project must have seemed like the beginning of U.S. positioning of powerful armament systems in space and the creation of high-precision offensive space systems.

domestically built satellite (Omid) in February 2009²⁰ and announced its intention to put a man in orbit by 2025. After the satellite launch, Iran offered to help any Muslim country wishing to establish its own space program, raising proliferation concerns.

These new developments mean that Western powers may find themselves threatened in the future by numerous ASATs able to ruin any unhardened spacecraft. They also mean that space assets, which are inherently vulnerable,²¹ may be irresistible and tempting targets for adversaries unable to compete on more classical grounds. First-strike stability in space is therefore eroding. Surprise attacks could occur in a matter of minutes,²² and countering this trend will not be easy, particularly since a reliable deterrence strategy has not been publicly articulated by the leading space power, namely America. One reason for this may be the fear that a clear deterrence strategy to protect critical space assets may carry the risk of a crisis over satellites escalating out of control. The risk of escalation has always been present in the past, but in the case of space attacks, disproportionate retaliation is a different kind of risk. This downside of deterrence is well known and needs to be addressed, since deterrence by threat of punishment remains the best available strategy for the most serious threats.

What can be done to prevent the most dangerous attacks? Can deterrence play a role? Would it be a stabilizing factor? The diversity of potential attacks, some of them nondestructive,²³ makes a general answer difficult. Forrest E. Morgan of the RAND Corporation proposes a deterrence strategy coupling deterrence by punishment with deterrence by denial: A national space policy would declare that the United States would punish space aggressors but also diminish expected gains from any space attack.²⁴ The second part of the proposal would be easier to put in place than the first: It is possible to make space assets more resilient, but it is more difficult to find credible threats of punishment, particularly if escalation in space warfare would be most detrimental to the United States and its allies. Morgan also suggests prohibiting the use of force in space,²⁵ which looks pretty reasonable. But diplomatic experience in this

²⁰ The launch took place on February 2, 2009. Omid is a store and forward communications satellite, lifted by an indigenous launcher. On February 13, 2010, Iran revealed the development of a new space booster and three new satellites. They may provide Iran with some reconnaissance capability. In addition, Tehran made reference to rudimentary antisatellite capability.

²¹ This high degree of vulnerability may be the result of the past, when attacks were not seriously contemplated because they were unlikely.

²² The time factor is of the essence: One reason offense is much easier than defense in space is that attack is so quick while defense cannot be automated.

²³ For example, the momentary degradation of U.S.-based assets during a crisis in order to deny access to space-based intelligence, reconnaissance, and communications. Though less serious than destructive attacks, such actions could still have a decisive effect on the outcome of a crisis.

²⁴ Morgan, 2010.

²⁵ See Morgan, 2010. The author, without dismissing arms control possibilities, is more interested in condemning attacks on space assets in order to strengthen international norms and support the credibility of deterrence threats.

domain tends to show that potential space opponents, such as China and Russia, are interested in agreements or treaties on space only as long as the United States resists or even opposes them. This is at least the experience of the Conference on Disarmament in Geneva. This should not prevent efforts to define unacceptable behavior in the years to come while developing situational awareness to identify possible violations.

Another expert, Brian Weeden from the Secure World Foundation, suggests a deterrence strategy by denial, the key goal being to limit the possible extent of damage caused by an attack on satellites.²⁶ This would involve replacing existing large satellites with constellations of redundant smaller satellites.²⁷ A physical attack would then have only limited—or at least more limited—consequences. This looks like an attractive policy if it is economically viable, and if smaller satellites would offer sufficient high-resolution capabilities. A third option, presented by Simon Worden and Martin France, would take advantage of the United States' asymmetrical capabilities and threaten the adversary's economic well-being through control and denial of global space, a move similar to a blockade on earth.²⁸

China has been the most vocal nation denouncing U.S. policy in outer space.²⁹ According to Beijing, U.S. space policy grants Washington the right to use any necessary means to ensure American security while denying others access to space for hostile purposes. As a consequence, China is not going to restrain itself in seeking to restrict America's use of space or in developing space capabilities that can challenge the United States. China's destruction of one of its satellites in January 2007³⁰ and of one of its ballistic missiles in January 2010 are a clear indication of the Chinese strategy: American supremacy in outer space will not be tolerated, China will not accept what it has called "the monopolization of outer space,"³¹ and it will acquire asymmetric means to challenge the United States in space whenever necessary. Washington understands the challenge. In 2007, Bao Shixiu, a well-known Chinese strategic expert, produced a paper presented as an official message to the United States. He stated that no nation

²⁶ See Brian Weeden, "Space Architecture Choices and Physical Dependencies," briefing slides, Washington, D.C.: National Defense University, April 14, 2009.

²⁷ If microsatellites are going to be an asset in the future, it is worth recalling that the University of Surrey Space Centre has been teaching other nations how to develop, produce, and operate their own microsatellites. Current customers include China.

²⁸ Simon P. Worden and Martin E. B. France, "Towards an Evolving Deterrence Strategy: Space and Information Dominance," *Comparative Strategy*, Vol. 20, No. 5, 2001.

A blockade is generally interpreted as an act of war, though; President Kennedy prudently termed the October 1962 de facto naval blockade a "quarantine" to leave space for negotiations with Moscow.

²⁹ The attacks essentially target a policy of supremacy in space that may now be attributed to the Bush administration, but whatever the efforts made by the Obama administration since 2009, it remains unclear whether Beijing sees any real change in U.S. space policy.

³⁰ To be noted: The debris from China's ASAT test constitutes as much as 30–40 percent of current low-earth space debris. The test violated the protocol on debris prevention signed by China.

³¹ Bao, 2007, p. 3.

“should be led into thinking that China does not have the ability to acquire a fully effective deterrent in space or the determination to use it in its own defense.”³² In essence, China will follow “the same principles for space deterrence and space weapons as it did with nuclear weapons.”³³ The idea is that *in principle* China will maintain a defensive position and not attack first but will acquire second-strike capabilities. *In practice*, though, while China maintains a public stance on second strike, the possibility of a first Chinese strike in outer space cannot be excluded. The question, then, is how to deter major attacks without massive deployments.

Few Chinese experts believe that space weapons—like nuclear weapons before them—will alter the nature of war. They do not recognize the apparition of new weapons *fundamentally* modifying the conditions of war-fighting: Weapons that change the future of war have not emerged in the past and will not emerge in the future, and space weapons will not become the ultimate weapons, nor will they decide the outcome of conflicts. But they still need to be countered in an effective way, particularly since the threshold of their use will be lower than that of nuclear weapons. Such is the explanation for defense preparations in China against possible space attacks—including “active defense”³⁴—and for Chinese space programs related to reconnaissance, tracking, monitoring space systems, and antisatellite capabilities³⁵ in order to retaliate against such attacks.

In Chinese diplomatic language, this is called “hedging for peace in space.” Taking out some U.S. satellites in low earth orbit in a scenario like the Taiwan Strait crisis may be the actual result of this “hedging” policy if a serious crisis erupts there. It would, in Beijing’s view, probably sufficiently confuse and delay any U.S. intervention, allowing China to win the battle. An even worse situation would be the use of a nuclear detonation against space assets, resulting in electromagnetic pulse (EMP) effects on earth. This may seem far-fetched, but not to all experts. According to Robert Pfaltzgraff, for example,

the ultimate asymmetrical strategy against the United States lies in the possibility of nuclear detonation at an altitude between 40 and 400 km designed to both disable and destroy US satellites and to have devastating EMP effects against infrastructure on earth, including electronic systems essential to the operation of hospitals, air traffic control, ground transportation, and food distribution.³⁶

³² Bao, 2007, p. 10.

³³ Bao, 2007, p. 9.

³⁴ By *active defense*, China means the ability to launch counterattacks, including through the development of space weapons.

³⁵ China does not acknowledge the incompatibility of such development with the Chinese proposal to ban space weapons and the use of weapons for hostile attacks on space assets. Testing ground-based weapons for attacks on satellites is consistent with Chinese policy.

³⁶ Robert Pfaltzgraff, Jr., *Space and U.S. Security: A Net Assessment*, Cambridge, Mass.: Institute for Foreign Policy Analysis, January 2009.

Facing such developments along with growing WMD and ballistic missile proliferation and the expanding number of spacefaring nations,³⁷ space capabilities will play an increasing role in defense planning and military operations. Concerning space deterrence, the United States and its allies can do the following:

- First, develop intelligence capabilities involving ASAT developments and locations. This will take time, but having a comprehensive picture of the space environment will make it possible to differentiate attacks from accidents and provide some indication of the origin of an attack.
- Second, encourage restraint by convincing potential adversaries that restraint would be beneficial. The U.S. space review lays out a concept for influencing actor choices and underlines the benefits of restraint.³⁸
- Third, protect assets in space with redundant capabilities.³⁹ There should also be passive defenses on satellites and spare satellites in storage ready for rapid launch. But according to most experts, a defense strategy will always fall short of expectations, because successfully defending orbiting assets against a determined adversary is still very hard and very expensive.
- Fourth, replace the most vulnerable satellites in low orbit with unmanned aerial vehicles (UAVs) for tactical reconnaissance missions.
- Fifth, make clear that *there are red lines*; i.e., that unacceptable outcomes for attackers—at a time and in a manner that do not need to be publicly defined—would follow aggressive actions in space.
- Sixth, work with allies and partners who develop significant space capabilities.
- Finally, concerning arms control, little can be expected realistically, *but it would be worth trying to define space debris guidelines and space traffic management and prohibit the most dangerous types of attacks*. Nuclear detonation of space assets with EMP effects on earth would certainly be among them. More thinking in this area will provide additional space security concepts as the threat continues to evolve.

³⁷ The proliferation of technologies exploited for commercial purposes will also be available for military applications.

³⁸ *Benefits of restraint* means increasing the perceived benefits of restraint without having to rely on strategies of a kinetic kind. See DoD, *National Security Space Strategy: Unclassified Summary*, January 2011.

³⁹ Secretary of Defense Robert Gates exposed this perspective in October 2008:

As we know from recent experience, attacks on our communications systems and infrastructure will be part of future war. Our policy goal is obviously to prevent anyone from being able to take down our systems. Deterrence here might entail figuring out how to make our systems redundant, as with the old Nuclear Triad. Imagine easily deployable, replacement satellites that could be launched from high altitude planes—or high altitude UAVs that could operate as mobile data links. The point is to make the effort to attack us seem pointless in the first place. (Gates, 2008)

Cyberspace

Today's physical world is heavily integrated with the virtual world of information in cyberspace. Cyberspace touches practically every facet of modern society: the economy, transportation, healthcare, civil infrastructure, public safety, and national security. In particular, military capabilities are fast becoming highly dependent on the innovations created by cyber technology. Computer technology is therefore emerging as a force dominating warfare in the 21st century. Cyberweapons may become the weapons of choice, and vulnerability to offensive exploitation by potential adversaries may become a strategic, not a tactical, weakness. This vulnerability may be the primary impediment to victory in the future. Challenges to IT infrastructures are growing across the spectrum (cybercrime and state-sponsored intrusions and operations). There is no longer any need to underscore that cyberspace poses serious challenges.⁴⁰ Hundreds of millions of dollars have already been stolen, as well as a considerable amount of intellectual property and sensitive military information. Defense against this threat is thought to be so critical that the new U.S. Cyber Command (USCYBERCOM) was activated in October 2010 to address it,⁴¹ with the priority of developing "the rules of engagement of cyberwarfare," and coordinated with a complementary initiative by NATO. It is worth noting that in this critical area, as in some others (such as space capabilities, ballistic missiles, and nuclear assets), Washington is increasingly worried by the lack of information provided by Beijing—even after the formation of a specific Sino-American Joint Liaison Group. So far it has not improved communication between Beijing and Washington on cyberattacks and cybersecurity.

In May 2011, the DoD concluded that the United States may respond to cyberattacks with military force, particularly if they produce massive disruption. The response will then be proportionate according to the Laws of Armed Conflict. The debate mentioned above concerning killing people "who kill bits" is therefore evolving with the increasing awareness of the possible serious consequences of cyberattacks.⁴²

The threat itself is multidimensional, encompassing the following activities:

- *Cyber espionage.* A large number of cyber espionage cases are already public knowledge, although the details are not. Some examples are nonetheless telling.

⁴⁰ In the UK alone, there are over 20,000 malicious emails on government networks, 1,000 of which are deliberately targeting them.

⁴¹ The first commander of USCYBERCOM, General Keith Alexander, is simultaneously head of DoD's National Security Agency.

⁴² According to an October 2011 report on cyberspace, China and Russia appear to be chiefly responsible for cyberattacks on U.S. research and development activities, but attribution in these cases is difficult. See Office of the National Counterintelligence Executive, *Foreign Spies Stealing US Economic Secrets in Cyberspace: Report to Congress on Foreign Economic Collection and Industrial Espionage, 2009–2011*, Washington, D.C., October 2011.

Deputy Secretary of Defense William Lynn publicly confirmed in 2010 that the Pentagon had suffered a massive computer attack in 2008. The attacks on classified and unclassified military computer networks started with an infected flash drive that was inserted by a foreign intelligence service into a U.S. military laptop in the Middle East. The flash drive's malicious code uploaded itself onto a network run by U.S. Central Command. The program operated silently and delivered operational plans to an adversary. It was not the only successful penetration, but it served as a wake-up call. The United States and a number of European nations have been the targets of similar attacks aimed at stealing sensitive information such as research, contracts, and war plans. In some cases, traces left behind by the attacker have allowed the victim to reroute network traffic through the attacker's sites. In other cases, evidence has been deliberately wiped away. Two big countries, Russia and China, have developed significant capabilities in a number of areas, cyber espionage being one of them—and, in the case of Russian networks, cybercrime as well.⁴³ When asked, however, Moscow and Beijing have both treated suspicions with contempt and have refused to cooperate with investigations. Some retaliatory measures would be disproportionate to cyber espionage, but the nature, focus, and gravity of the thefts may provide indications of intentions. If the stolen information is really sensitive, or if it can be used against the victim in a crucial way in wartime, the need to retaliate may prove vital to discourage further acts of espionage.

- *Cyber sabotage.* A new chapter of cyberwarfare may have started with the Stuxnet affair, which became public in October 2010. The Stuxnet worm has been infecting thousands of computers around the world since 2009. It penetrated the SCADA systems used by Siemens to operate large infrastructure projects.⁴⁴ It can issue (undetected) new commands to processes embedded throughout critical infrastructure. The target was apparently the Iranian nuclear program (not so much the Bushehr reactor, which at first got the largest amount of attention in the press, as the Natanz enrichment plant).⁴⁵ This attack, the first large cyber sabotage operation, may lay the groundwork for future campaigns, possibly against the United States and its allies and partners. The lesson is clear: It is increasingly feasible to disrupt critical infrastructure by attacking command and control systems. In May 2011, cyber sabotage was the main justification put forward by the Penta-

⁴³ They also promote a tightly controlled Internet.

⁴⁴ It is interesting to note that a large and strategic infrastructure like the Three Gorges Dam in China, the world's largest hydropower project, also uses SCADA systems from Siemens, a point Beijing could not have missed.

⁴⁵ Apparently, the attack was first launched through an infected flash drive, which may have been inadvertently inserted into the system by an individual with access to the Iranian command and control network. This may never be confirmed, but the map of Stuxnet's infections points in that direction.

gon for a new U.S. policy: A cyberattack could, in some circumstances, be an act of war, for example, if there were a significant threat to nuclear reactors, subways, or pipelines, and the United States could respond using traditional military force, a warning to potential adversaries.

- *Cyber interstate conflicts.* Cyberattacks took place against Estonia in 2007 (a war that took place only in cyberspace) and against Georgia in 2008 (as part of its war with Russia). In Estonia, the attack appeared to be an attempt to punish the Estonian government for the relocation of a statue representing a Soviet soldier. It was not followed by any attack on other domains. In Georgia, cyberattacks were most probably an element of Russian harassment prior to the war. The attack may have been an attempt to influence Georgia or to degrade its ability to command and control its military forces. In both cases, Russia, which has apparently made cyberspace attack a factor in its military strategy in order to coerce “near abroad” nations to align with Russian policy, became the most plausible suspect. Subsequent investigations, with no participation from Moscow, remained inconclusive. Much less significant nations have now joined the cyber arms race. In North Korea, which boasts that it is “fully ready for any form of high tech war,” the Ministry of People’s Armed Forces reportedly received an order in 2009 to be able to “destroy the South Korean puppet communications networks in an instant.”⁴⁶ One institute, known only as Lab 110, specializes in hacking and spreading malicious programs.
- *Cybercrime.* The growth of cybercrime is disturbing. It is estimated that businesses lose \$1 trillion annually to cybercrime—as much as the economic impact of organized crime.⁴⁷ Huge numbers of stolen credit card accounts are available for sale online. Sinowal, the super-Trojan described in an October 2008 article in the *Washington Post*, is blamed for the theft of a huge number of bank-account passwords, credit card numbers, and other sensitive financial information worldwide.⁴⁸ It is suspected of having stolen banking details from up to 12.7 million victims. Granted, crooks are easier to understand than hackers or foreign invaders—they look for financial gains—but they are becoming extremely well organized and technically capable, and cybercrooks may operate in conjunction with national governments. This is reportedly the case in Russia and in North Korea, where a group of about a thousand people is thought to be dedicated to conducting cyberattacks (different goals have been identified by South Korean

⁴⁶ Associated Press, “North Korean Army Suspected in Cyber Attacks,” *msnbc.com*, July 11, 2009.

⁴⁷ The FBI estimates illegal profits from organized crime at around \$1 trillion per year. Federal Bureau of Investigation, “Organized Crime: Overview,” web page, undated.

⁴⁸ See Brian Krebs, “Virtual Heist Nets 500,000+ Bank, Credit Accounts,” blog post, *Security Fix: Brian Krebs on Computer Security*, *washingtonpost.com*, October 31, 2008.

intelligence: gathering information, generating social unrest, working to paralyze a country in wartime, but also illegally accessing financial resources).⁴⁹

What are the possible responses to this rapidly evolving threat? Here are some ideas:

- It is now widely acknowledged that the best way to operate in the cyber battlefield is to conduct both defensive and offensive cyber operations. As Ed Granstedt and Troy Nolan observed in a 2010 article, “No amount of castle wall construction (firewall) or moat building (virus scanning) is going to protect them (i.e., the castles).”⁵⁰ There will always be back doors and, once inside, the ability to build more of them.⁵¹ In addition, the cyber era having already reached the stage of cruise missiles, walls can often be ignored, particularly if they lack sophistication.
- Defenses can provide significant security, under some conditions. They should be layered. Successful attacks will occur, but they may penetrate only the first layers of defense before reaching critical systems and then be defeated by the following layers. Layered defenses are a must for the most sensitive government networks and critical infrastructures.
- Vulnerabilities can be identified⁵² and redundancy (backup systems, failover network paths) can help prompt recovery. Some commercial best practices on security may be useful to follow.
- Defenses should be coupled with intrusion detection systems, providing an increasing ability to detect serious intruders and serious intrusions. These systems employ sensors positioned throughout the infrastructure to identify intrusions. The main challenge, however, is distinguishing a significant attack from a false alarm. Early warning indicators of cyberattacks can be identified when vulnerabilities and emerging threat vectors are discovered.
- Defenses should include efficient forensic systems. The problem of attribution is one of the biggest challenges in deterring acts of aggression and responding to them whenever they occur. The objective of forensic systems is to aid in investigation after an attack. In many cases, attribution is possible, but early warning

⁴⁹ In the case of Sinowal, the main suspect is an Internet-organized crime syndicate, the Russian Business Network, with ties to Russian authorities. It may be considered a cyberspace conflict proxy. Concerning North Korea, its established cyberwarfare capabilities were demonstrated in July 2009 against South Korea and the United States, and an October 2010 hearing of the South Korean Assembly’s Intelligence Committee concluded that North Korea’s capacity for cyberattacks was worth focusing on.

⁵⁰ Ed Granstedt and Troy Nolan, “Securing the Info Advantage,” *Armed Forces Journal*, June 2010.

⁵¹ In his book on cyberdeterrence, Martin Libicki may be a bit complacent concerning the ease with which one can build effective defenses; see Libicki, 2009, pp. 134 and 144.

⁵² Martin Libicki points out that “there is no forced entry in cyberspace,” but is this not a more general situation in warfare than he acknowledges? Libicki, 2009, p. 16.

indicators and a good understanding of an adversary's capabilities are essential in making significant improvements in this area. To some extent, predictive analysis may even become possible.

- Incident reporting should be shared with allies in order to improve international cooperation on cyber security. Allied communications and economic networks are too interdependent not to develop a unified strategy involving at least the sharing of cyberthreat assessments, assistance and exchange capabilities, and integrated cyberdefense for key allied infrastructures.
- Governments should be held accountable. Not all malicious behavior can be prevented, but international cybercrime can be outlawed, state penetration into civilian systems can be limited, and requests for assistance in case of attacks should be honored.⁵³
- Disinformation can help thwart information theft. Cyber spies gather huge quantities of low-quality information. They also learn how to discriminate what is interesting from what is not. Saturating networks with false information is not an option, since the same networks are used by the potential victim for its own ends. Deterrence by denial achieved through increasingly sophisticated defenses is a better strategy and can, in many cases of cyber espionage, be considered efficient. This might not be what a government, a government agency, a defense industry, or a think tank working on classified data would consider an acceptable deterrence strategy *if 20 percent of the total amount of information stolen were sensitive*. But when an attack is detected, the adversary can be led to disinformation.
- Consider deterring effects rather than actions. War is intrinsically unpredictable, but the effects of cyberweapons may be even more unpredictable than those of, say, tanks or aircraft. For example, a wide spectrum of effects can be achieved with an infected flash drive (Stuxnet comes to mind, if indeed a flash drive was the origin of the attack). Hidden viruses may remain after the intrusions are concluded. What should be deterred are actions that have catastrophic effects. In some cases, however, increasingly robust systems can achieve deterrence by denial.
- Avoid escalation. One of the most dramatic effects of cyber espionage, beyond the ability to steal sensitive information, is the ability to harm the network: "Hackers could graduate from stealing information to harming the network itself."⁵⁴ Adversaries able to infiltrate, hide, and maintain access to an organization's data over a long period of time may acquire this ability. The problem of escalation should be assessed in those terms, since "the theft of information from confidential networks

⁵³ Estonia made a formal investigation assistance request to Russia, but Moscow refused to help, despite the fact that this type of cooperation is enumerated in the Mutual Legal Assistance Treaty between the two countries.

⁵⁴ Will Goodman, "Cyber Deterrence: Tougher in Theory Than in Practice?" *Strategic Studies Quarterly*, Fall 2010, p. 123.

may be a harbinger of much worse things to come.”⁵⁵ Hackers may leave codes in computer systems that lie dormant in peacetime “but could cripple military, intelligence, and command and control networks if activated during times of war.”⁵⁶ In the case of intrusions within nuclear command and control systems, the threat could be severe, and even existential, if, for example, C2 networks were penetrated and targets were modified.

- A second-strike capability in other areas should be protected. States should maintain retaliatory capabilities that cannot be targeted by cyberattacks. In the case of China, commercial responses are available: Decisions to purchase fewer Chinese goods and to impose taxes on a number of Chinese imported goods could have enormous social consequences in China.

We may well be, as John Chipman declared in 2010, “in relation to the problem of cyber-warfare, at the same stage of intellectual development as we were in the 1950s in relation to possible nuclear war.”⁵⁷ But we have already gained countless useful experiences from cyberattacks, which are, unlike nuclear attacks, happening *every day*. In addition, among the concepts that were developed to deal with possible nuclear war, some are relevant to cyberwarfare, including surprise attack, first strike, and escalation. They only need to be adapted. However, one major challenge is the way in which cyber and space warfare could allow state militaries and nonstate groups to escalate and expand conflicts beyond the traditional battlefield; another is the threatening quality of violent change in both space and cyberspace, with new capabilities appearing suddenly on the radar screen, or with unexpected massive attacks that cannot be prevented because they have not been anticipated. During the Cold War, the West was able to prevent the most threatening kind of violent change. Will this remain true in the 21st century? Whatever the answer, the ability to master space warfare and cyberwarfare and to prevent the most catastrophic attacks will be vital to Western security. All the U.S. allies expect Washington to be prepared to defend the commons in the future as it did in the past, not only in the maritime domain, but also in the areas of cyberspace and outer space. The QDR recognizes the scope of the challenge.⁵⁸

A wider question is whether the United States still has the economic capacity or the political will to sustain “the kind of grand strategy it maintained after the end of the Cold War.”⁵⁹ Eric Edelman suggests in a 2010 Center for Strategic and Budgetary Assessments report that “ideas about American decline can cut two ways. They can predispose policymakers to pursue policies that actually accelerate decline or they can

⁵⁵ Goodman, 2010, p. 122.

⁵⁶ Goodman, 2010, p. 122.

⁵⁷ Quoted in Simon Tisdall, “Cyber-Warfare ‘Is Growing Threat,’ ” *The Guardian*, February 3, 2010.

⁵⁸ DoD, *Quadrennial Defense Review Report*, February 2010a, pp. 36, 87, and 126.

⁵⁹ Robert Pape, “Empire Falls,” *The National Interest*, Jan.–Feb. 2009, pp. 21–23.

spark leaders to pursue courses of action that renew American economic vitality in order to reverse decline.”⁶⁰ The United States has traditionally found the vitality necessary to reverse decline when it has threatened the nation. On this subject, Washington, along with its European, East Asian, South Asian, and Middle Eastern allies, will need to expand its thinking to make sure it protects space and cyberspace at a time when both commons have been identified as major targets by its potential adversaries. Those adversaries seem capable of learning quickly, investing huge sums in nonconventional warfare, and constantly changing space and cyberspace environments. As a result, they are becoming increasingly sophisticated in their ability to further their objectives.

Finally, Major Richard Davenport writes that the virtual war being waged every day in cyberspace “leans more towards an Eastern philosophy” than toward the classic principles of war espoused in the West, where physical force is essential in winning wars.⁶¹ If he is right, *then the virtual front is probably going to move to more and more sophisticated forms in China*, which already employs some of its more talented students in performing cyberattacks, and the United States and its allies will have some catching up to do in relation to their potential Eastern adversaries in order to maintain their dominance in cyberspace.

⁶⁰ Edelman, 2010, p. 18.

⁶¹ See Richard Davenport, “Know Thy Enemy,” *Armed Forces Journal*, September 2009, p. 21.

Conclusion

In 1956, Paul Nitze made an interesting analogy between a nuclear world and a chessboard.¹ He wrote that even though the atomic queens may never be brought into play, their position may still have a decisive bearing on which side can safely advance a limited-war bishop or a Cold War pawn. More than 50 years later, this may still be true. But while he had in mind *mainly* U.S. and Soviet atomic queens, with an advantage on the American side, the reality in the 21st century may be essentially about the shadow of America's adversaries' atomic queens.

In the United States, expenditures related to the nuclear enterprise are under increasing scrutiny, making it difficult to modernize the nuclear arsenal.² Today's entire Air Force bomber fleet—nuclear and nonnuclear—is 90 percent smaller than it was in 1959, a decline justified in great part *first* by the deployment of ICBMs, the advent of precision-guided munitions, and the rise in the per-unit cost of combat aircraft, and *second* by the end of the Cold War. Still, all the remaining bombers are in need of costly upgrades, since the air-launched leg is apparently going to be retained for the foreseeable future.³ The remaining ICBMs are also aging rapidly, with underground silos in need of cost-prohibitive replacement. Among U.S. nuclear allies, the United Kingdom is far from having a clear nuclear policy for both political and financial reasons (in April 2011, for example, part of the UK coalition—LibDem—questioned the need for continuous submarine patrols at sea).

Meanwhile in China, where the military budget has been unconstrained for 20 years, nuclear weapons are playing an increasing role. New air, sea, and ground systems are beginning to be deployed there, with great opacity denounced in the region

¹ Paul Nitze, "Atoms, Strategy and Policy," *Foreign Affairs*, Vol. 34, No. 2, January 1956.

² The Obama administration plans to boost spending on maintaining the U.S. nuclear arsenal and related laboratories by \$85 billion over ten years, including a \$7 billion transfer from DoD to the National Nuclear Security Administration (U.S. White House, "Fact Sheet: An Enduring Commitment to the U.S. Nuclear Deterrent," November 17, 2010b). But the President has also directed that \$400 billion be removed from the overall ten-year defense plan and has stated that everything is on the table. As a result, a complex process is under way to frame choices.

³ Taking into account defense cuts, current and forthcoming, a new bomber may no longer be affordable.

and beyond. The future nuclear force that China has in mind is unknown. Even the number of new ICBMs, dual-capable aircraft, and nuclear submarines is anyone's guess, though it is probable that the JL-2 will be made capable of carrying three warheads instead of one. At the same time, Beijing is developing space and cyberspace capabilities and testing them in disturbing ways. With significantly fewer financial resources than China, Russia also gives priority to its nuclear holdings because of perceived large conventional imbalances with both NATO and China. The New Start treaty has not led to any reductions in Russia, because its current holdings are already below the ceilings.

In South Asia, Pakistan may well be the main strategic beneficiary of the 1998 nuclear tests, since Islamabad's needs are much more limited than those of New Delhi. When American troops leave Afghanistan, China will have more freedom of maneuver to achieve its overriding regional objective: keeping India down. This has always been the basic tenet of the Sino-Pakistani relationship. Finally, the likelihood of additional nuclear players in the Middle East and in East Asia 20 years from now can hardly be discarded. Some official statements have now been made public. All of these factors will play a role in constraining the United States in the safe advance of what Paul Nitze called a limited-war bishop.

At the same time, nuclear deterrence has receded in American minds as well as in European capitals. More urgent business—yesterday in the Balkans and Iraq, today in Afghanistan and Libya—is focusing intellectual and operational efforts. Paradoxically, a fortunate turn of events occurred with two serious nuclear incidents in 2006 and 2007 in the United States. In August 2006, nuclear fuses were mistakenly shipped to Taiwan, and a year later, in August 2007, six air-launched missiles armed with nuclear warheads were mistakenly flown from Minot Air Force Base to Barksdale Air Force Base. Both events led to the creation of Global Strike Command and to a reexamination of the nuclear enterprise. Since the revelations concerning the probable existence of additional clandestine military activities in Iran (beyond Qom) and the advancement in Pyongyang's enrichment program, troubling questions have surfaced concerning Western intelligence, key challenges to international verification, and export control limits.

In stimulating a renaissance of thought on nuclear deterrence, this reexamination should take into account the development of thinking in potentially adversarial nations. In many parts of the world, nuclear weapons are not seen as old-fashioned. The West will not change this perception by reducing its nuclear arsenals. Newcomers carefully follow the nuclear debates that are developing mostly in the West. They take part in them, they react to them, they read nuclear doctrines (including NATO's new nuclear posture), and they occasionally learn from past nuclear crises. An important lesson of the Cold War stems from the high level of professionalism exhibited by those dealing with nuclear weapons on both sides. As General Larry Welch declared at the 2010 U.S. Strategic Command Deterrence Symposium in Omaha, referring to the

Western and Eastern nuclear communities, “they kept peace” in part because each side recognized the competence on the other side and respected it.⁴ Deterrence greatly benefited from this competence and respect. It is worth noting that during the Cold War, such competence was not recognized in Mao and the Chinese. Nikita Khrushchev worried about Mao’s recklessness and his lack of understanding in nuclear matters. Things have changed a great deal in the last 40 years, but there is no doubt in the mind of this author that Beijing remains a risk-taking partner when compared with the USSR. This factor should be taken into account in the West as it already is in the East.

Improving mutual understanding among potential nuclear adversaries is an important part of deterrence. Such is the purpose of a number of current bilateral strategic dialogues. Such dialogues with Russia and China have been disappointing so far. Russia, a revisionist state unlike the Soviet Union, is essentially trying to get Western military technology and is not really interested in any substantial dialogue on the most divisive issues—for example, missile defenses, a subject on which the same line of argument is presented over and over again, whatever the systems contemplated to protect Europe and America or the technical explanations provided by Washington to reassure Moscow. China, with increasingly sophisticated and well-read experts, appears reluctant to discuss with Washington its perceived conditions for strategic stability in the 21st century, a crucial topic for deterrence in both America and Europe.

Track two meetings may provide different opportunities. The strategic community is now more internationalized than it used to be. American, European, Russian, and—increasingly—Asian experts exchange ideas on a daily basis. These meetings improve mutual understanding on key questions: ambitions, interests, sovereignty, stability, and regional crises, as well as prevention of escalation. Although they are not meant to replace official bilateral or multilateral meetings, they should be able to deal with part of the “thinking crisis”: With so many questions now open, shaping the intellectual framework of things to come on nuclear matters is not a minor business, especially since the real nuclear debate could well become less about nuclear abolition and more about whether there will even be any rules at all in the nuclear future. For almost a decade the NPT has proved unable to address any concrete case of violation during review conferences. The IAEA lacks funding and skilled inspectors, and its investigative power is in retreat in Iran, North Korea, and Syria. At the same time, poor knowledge of the nuclear doctrines and chain of command of new players makes crisis management difficult to anticipate, much less regulate, while misperception among potential nuclear adversaries is encouraged by distrust. To sum up, we may have little previous experience of the future nuclear order of the globe.

This is how strategic surprise and nuclear blackmail could become the only remaining “rule” in an age of piracy. The prospect is worrisome even with small nuclear

⁴ Larry Welch, keynote speech, U.S. Strategic Command Deterrence Symposium, Omaha, Neb., August 12, 2010.

players, particularly when a very restricted group of leaders will make crucial decisions. However, if current experience provides any guidance, the champion in this respect—the country that uses strategic surprise and nuclear blackmail to best effect—in the decades to come is likely to be a very large nation, namely China, which is already keen to test the much more powerful United States in a number of significant fields (notably space and cyberspace). The future regional security order in East Asia is not written yet, but it is unlikely to be anticipated in the same fashion by Washington and Beijing. An additional matter of concern is of a political nature: What China does with its military and nuclear power in the future will be determined without the influence of counter-vailing institutions. We are too quick to assert that we already went through this situation with the USSR. China is not a small Soviet Union. The much-announced U.S. rebalancing toward the Asia-Pacific is indispensable. Europe should also begin defining a role in the Asia-Pacific that transcends trade.

In an interesting analysis of U.S.-Japanese cooperation on counterpiracy, Tetsuo Kotani contends that “piracy thrives when the power of a hegemon declines, and continues to flourish until addressed by firm measures,” recalling that “there were no pirates running wild in the Mediterranean during the Pax Romana, but (that) this Roman inland sea became a piracy hotspot after the fall of the Roman Empire.”⁵ He considers that the current outbreak of piracy in Southeast Asia and in the Horn of Africa “indicates the relative decline of the US sea power,” even though “the United States still maintains the strongest navy in the world.”⁶ As indicated in the introduction, the word *piracy* is used in this book to describe the growing disrespect for international law and accepted rules of behavior. One spectacular manifestation of this trend is the use of large-scale terrorism, while the lack of enforcement of U.N. resolutions concerning Iran’s and North Korea’s nuclear and ballistic missile programs shows the resilience and increasing military power of outlawed regimes, with regional and global consequences. Numerous violations of the law of the sea on vital sea lanes by major powers like China; illicit trafficking of sensitive technologies; brutal disregard for basic human rights; sophisticated cyberattacks testing transportation, banking, and energy systems in peacetime; and the absence of rules of conduct in space are also part of the picture. Such is the problematic environment in which deterrence should operate in the first decades of the 21st century. After the demise of the Roman Empire, the so-called barbaric states were able to impose their policy in the Mediterranean Sea, while chaos was the rule on most of the European continent. This is not the situation the West and its allies face today, but the warning signs are too numerous to ignore. Regional and international peace are currently threatened by a very small number of obnoxious

⁵ Tetsuo Kotani, “Japan’s Counter-Piracy Policy and the U.S.-Japan Partnership,” in *The Global Maritime Security and the Japan-U.S. Alliance*, Tokyo: Japan Forum on International Relations, May 2010.

⁶ Kotani, 2010.

actors with unconventional programs growing over time. Unless they are addressed with firm measures, disorder will grow, deterrence will recede, and the risk of major conflict may come back without much warning. In the view of this author, the emerging cool war with China deserves the utmost attention in this respect, beyond the current nuclear proliferation crises.

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About the Author

Thérèse Delpéch (1948–2012) was one of France’s foremost policy analysts and historians and a leading global authority on international nuclear security. From 1997, she was director of strategic studies at the French Atomic Energy and Alternative Energies Commission (CEA). She advised French Prime Minister Alain Juppé from 1995 to 1997; served as French commissioner on the United Nations Monitoring, Verification and Inspection Commission for the disarmament of Iraq; and was associate researcher at the Center for International Studies and Research in Paris. She served on several prestigious boards, including as advisor to the International Committee of the Red Cross, member of the Council of the International Institute for Strategic Studies, member of the Strategic Advisory Board of Institut Français des Relations Internationales, and founding member of the Monterey Nonproliferation Strategy Group. She was part of the commission that crafted the French White Paper on Defense and National Security (2007–2008) and served on RAND Europe’s Advisory Board (2001–2005).

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Advance Praise for *Nuclear Deterrence in the 21st Century*

The emergence of new nuclear weapons states is one of the most important national security challenges for the United States in the coming years. Unfortunately the serious study of nuclear strategy and deterrence has atrophied since the end of the Cold War. How fortunate, as a result, that the late Thérèse Delpech, one of the most thorough and tough-minded thinkers on the subject, has bequeathed us this wonderful monograph. Thérèse's laser-like logic is applied to the founding fathers of nuclear strategy, the concepts they developed and their relevance to today's world where many of the rules of the international game are changing and global politics (as she has written elsewhere) have become more "savage." Delpech, whose untimely passing was a great loss to the transatlantic strategic studies community, has left this book as her legacy and a powerful one it is.

—*Ambassador Eric S. Edelman, Hertog Distinguished Practitioner-in-Residence at the School of Advanced International Studies at Johns Hopkins University; Under Secretary of Defense for Policy (2005–2009); and former U.S. Ambassador to the Republics of Finland and Turkey*

This posthumous publication is a fitting exclamation point to a career defined by intellectual courage, policy vision, and deep conviction about the requirements of a democratic peace in the nuclear era. In particularly compelling terms, Thérèse Delpech conveys a sense of urgency about nuclear deterrence and nuclear order in the 21st century not felt by most Americans. That urgency follows from her assessment that a second nuclear era is now upon us, one characterized by mounting violence worldwide, a growing disrespect for accepted rules of behavior and for international law, and the rising salience of nuclear weapons in many parts of the world. In contrast, she notes "nuclear deterrence has receded in American minds as well as in European capitals." She prescribes a dose of realism and offers it in the form of a careful sifting of the theories and practices of the first nuclear age for their relevance to the second. The result is a powerful picture of the mismatch between emergent challenges and the universe of ideas that inform policy. This work invites a new discussion about how best to secure nuclear order in a changed and changing world.

—*Dr. Brad Roberts*