



SSQ

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Commentaries

Common Defense 2011, Remarks of Mr. Brett Lambert

Finding Space in Deterrence

James P. Finch

Shawn Steene

Nuclear Lessons for Cyber Security?

Joseph S. Nye Jr.

US Policies toward Tehran: Redefining
Counterproliferation for the Twenty-First Century

Michael Kraig

Bipolarity, Proxy Wars, and the Rise of China

Lt Col Mark O. Yeisley, USAF

South Asia: Danger Ahead?

Charles E. Costanzo

The United States in Multilateral East Asia: Dealing
with the Rise of China

Chika Yamamoto

Book Essay: Gray's *Airpower for Strategic Effect* vs.
van Creveld's *The Age of Airpower*

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STRATEGIC STUDIES QUARTERLY

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VOLUME 5

WINTER 2011

NUMBER 4

Commentaries

Common Defense 2011: Remarks of Mr. Brett Lambert 3
Brett Lambert

*Finding Space in Deterrence: Toward a General Framework
for “Space Deterrence”* 10
James P. Finch
Shawn Steene

Feature Article

Nuclear Lessons for Cyber Security? 18
Joseph S. Nye Jr.

Perspectives

*US Policies toward Tehran: Redefining Counterproliferation
for the Twenty-First Century* 39
Michael Kraig

Bipolarity, Proxy Wars, and the Rise of China 75
Lt Col Mark O. Yeisley, USAF

South Asia: Danger Ahead? 92
Charles E. Costanzo

*The United States in Multilateral East Asia: Dealing with
the Rise of China* 107
Chika Yamamoto

Book Essay

Airpower: Two Centennial Appraisals 123
Karl P. Mueller
Airpower for Strategic Effect
Colin S. Gray
The Age of Airpower
Martin van Creveld

Book Reviews

- Cyber War: The Next Threat to National Security and What to Do about It* 133
Richard A. Clarke and Robert K. Knake
Reviewed by: Lt Gen David S. Fadok, USAF
- National Security Dilemmas: Challenges & Opportunities* 135
Colin S. Gray
Reviewed by: David R. Mets, PhD
- Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century* 137
Roger Cliff
Reviewed by: Capt Paul A. Stempel, USAF
- Rivals: How the Power Struggle between China, India, and Japan Will Shape Our Next Decade.* 139
Bill Emmott
Reviewed by: Capt Joe G. Biles, USAF
- Communication in China: Political Economy, Power, and Conflict* 141
Yuezhi Zhao
Reviewed by: CPT Brian Drohan, USA
- Allies of the State: China's Private Entrepreneurs and Democratic Change* 143
Jie Chen and Bruce J. Dickson
Reviewed by: Capt Paul A. Stempel, USAF
- Arms Control and Cooperative Security* 145
Edited by Jeffrey Larsen and James Wirtz
Reviewed by: Lt Col John H. Modinger, USAF, PhD
- A Contest for Supremacy: China, America, and the Struggle for Mastery in Asia* 147
Aaron L. Friedberg
Reviewed by: 2nd Lt Oriana Skylar Mastro, USAFR
- Taiwan's Statesman: Lee Teng-hui and Democracy in Asia* 149
Richard C. Kagan
Reviewed by: Richard Desjardins, Canadian Federal Civil Servant

Common Defense 2011

Remarks of Mr. Brett Lambert Deputy Secretary of Defense for Manufacturing and Industrial Base Policy

NO DISCUSSION ABOUT our nation's defense can occur without addressing head-on the fiscal environment in which we find ourselves and the reality of how the budget affects us all in the defense sector, both in industry and in the government. The effect of our nation's fiscal environment on the future of defense is not an abstract or theoretical issue. It is simply a fact.

I would also like to discuss some of the macro trends we are seeing in the industrial base. More specifically, how we in the Department of Defense are trying to better understand that base to enable us to identify the critical capabilities so vital to our continued commitment while fielding the best systems possible for our war fighters at the most affordable price to the taxpayers. This effort is especially important given the anticipated changes in the department's spending profile over the coming decade.

The Current Fiscal Environment: Lessons from History

Changes in the defense budget profile are not uncommon in the DoD history or in the history of the firms that have traditionally comprised our industrial base. A little over a year ago, while recognizing the importance of learning and adapting from historical experiences, then-deputy secretary of defense William Lynn began referring to the new era we are all entering as the "fifth inflection point" in post-World War II defense spending. The first three inflection points arose immediately after major wars were fought: World War II, the Korean War, and the Vietnam War. The fourth inflection point was the result of the Gramm-Rudman Act of 1985, where deficit reduction was the central tenet. The collapse of the Berlin Wall and the end of the Cold War further accelerated the decline in defense spending during that time.

When one looks back at these inflection points, several common themes emerge. First, each inflection point resulted in significant loss of

core capabilities by the department. Second, reconstitution was required in each instance, often at significant cost. Third, in different ways, the DoD managed each inflection transition poorly. So the bottom line is that we are 0-for-4 in our management of budgetary downturns.

Now, I believe it is important to acknowledge the former and current DoD leadership for recognizing our past missteps. Specifically, former secretary Robert Gates, former deputy secretary Lynn, Deputy Secretary Dr. Ashton Carter, and acting undersecretary Frank Kendall have been organizing and preparing for the new environment for a number of years. Although to many, the effort began with a speech by Secretary Gates in Abilene, Kansas, in 2010, the underpinnings were well under way long beforehand. In fact, five broad lessons that emerged from earlier inflection points have served as a road map for DoD planning for quite some time.

First, we must make difficult decisions early. The current fiscally constrained environment is not going to improve anytime soon. There will be less money than we anticipated in the future. And because even well-managed programs experience cost increases, the bottom line is that if we cannot afford it now, then we will certainly not be able to afford it in the future. It is irresponsible to embark on programs that we simply cannot afford. We need to make the hard decisions now to live within our expected resource levels. Affordability is, and will remain for the foreseeable future, at the forefront of our purchasing decisions.

Second, it is impossible to generate needed savings through pure efficiencies alone. By pure efficiencies, I am referring to the performance of the same function but doing so with less money. We can generate some savings through this method, but we are not going to find enough pure productivity gains to generate all of the necessary savings required. This means that we have to prioritize. We will eliminate programs that, while valuable, may not be valuable enough to sustain in the current budget environment. You have already seen several high-profile program terminations, not because we did not want these systems, but because we simply cannot afford them at this time.

Third, budget reductions must be evaluated in a balanced way. Reductions focusing on a single area raise costs later. For example, overly severe cuts in operational accounts hollow out the force by depriving it of essential training and maintenance. Similarly, reductions that single out investment accounts, while seemingly easy, effectively force a procurement holiday that might necessitate a future bulge in procurement to catch up the inventory.

This approach is often penny-wise and pound-foolish. Outdated equipment ultimately needs to be replaced at great expense a decade or so later. The bill that comes due is far greater than if careful consideration had been given during initial budget planning. To prevent such problems, we need to balance reductions today across force structure, O&M, and investment accounts.

Fourth, defense budgets should not be reduced too quickly or too drastically. We need to recognize that budget reductions have long-term effects. Rebuilding capabilities is both expensive and fraught with risks. We must protect our core missions, maintain our technical superiority and the quality of our force, and ensure that key elements of our industrial base which are essential to our current and future capabilities continue to remain available to our war fighters.

And fifth, we must be mindful of the state of our industrial base as we make these difficult decisions in the months and years ahead. It is important to remind ourselves that despite spending over \$1 billion a day, we in the Pentagon do not actually make anything. Our industrial partners provide much of the innovation and almost all of the production and maintenance of the systems and services our war fighters rely upon to remain a fighting force unmatched in the annals of history. We must not take this base for granted—it is not a birthright.

Macro Trends in the Industrial Base

Now, I would like to turn to the second topic: macro trends in the industrial base. I firmly believe that we must maintain a financially robust and technologically advanced industrial base if we are to succeed in aligning our available resources to our current and future requirements. Without a robust and vibrant base, all of our policies would be to no avail. At the end of the day, we must recognize a simple truth: we in the DoD do not actually make anything. We rely on our industrial partners to develop, build, manufacture, integrate, and maintain the products and services upon which our war fighters' lives depend, along with the lives of the citizens whom they defend.

I see three current trends changing our industrial base. Simply put, our base is more global, more commercial, and more financially complex. This reality is truer today than it was yesterday and will be even truer tomorrow than it is today. The defense industry and its suppliers are constantly

changing and constantly adapting to the department's requirements and the conditions set forth by the marketplace. This evolution in the base generates new and difficult challenges that require our attention.

Outdated constructs of a static and stale industrial base must give way to the basic fact that our base is no longer a singular, monolithic entity. Any industrial-base policy must take this fact into consideration, developing a more sophisticated and nuanced view of our base. Overall, the goods and services the DoD relies upon reach far deeper into the overall US economy than most people appreciate. While there are unique items produced solely for the department, these items often rely on a complex and integrated supply chain of manufacturers that if restricted at the subtier levels would jeopardize our ability to support the war fighter.

I will start with the first reality of our industrial base: our base is more global, and we must recognize the implications of the global marketplace in which we operate. We are finding that increasingly the advanced goods and services upon which we rely are produced by firms that were not found in the United States. Additionally, we are finding that many lower-tier and information technology companies in our supply chain are located in countries that are not our closest allies.

Buying from a global environment does offer many advantages. First, it increases competition and reduces costs. Second, it facilitates the introduction of new technologies and concepts. Third, it often supports coalition war-fighting efforts; at a minimum, it lessens the challenges of operating across coalition partners. Fourth, it allows us to benefit from the lessons learned and efficiencies gained in other nations that have faced difficult financial circumstances and were forced to implement their own "Better Buying Power" initiatives.

However, there are also associated risks with our increasingly global environment. These include, but are not limited to, the threat of counterfeit or inferior parts entering the supply chain, the potential for undue reliance on components whose origins or actual configurations might not be fully understood, and the risk of leaking intellectual property to foreign businesses and governments. We in the department are acutely aware of these risks and are aggressively working across our enterprise to address them.

The second reality of our industrial base, closely linked to what I just described, is that increasingly, many of the industrial segments vital to defense are commercial in nature or rely on commercially designed parts.

This is a trend that the department has been more willing to recognize in policy than in practice. I estimate that 25 years ago, nearly 70 percent of the goods and services the DoD procured were developed and produced exclusively for the military. Today, I estimate that the ratio has reversed, with approximately 70 percent of the goods and services procured either having been made for commercial consumption or originally developed with commercial applications in mind.

This is a difficult reality to embrace. Yet, we must adjust to this new reality if we are to successfully navigate this new industrial terrain. The DoD cannot afford to dominate or sustain every important domestic industry upon which it relies. It is simply not economically feasible or strategically desirable. The department will continue to support niche elements of the industrial base that are critical to our nation's security, but we must first improve our understanding of precisely what these critical elements are and how their absence might disrupt the supply chain. Buying from commercial firms, when warranted and prudent, allows us to save money to support the defense-unique segments.

Introducing commercial products into the defense arsenal is not without its own set of challenges. Incorporating more commercial firms will require eliminating many of the bureaucratic barriers to entry that currently exist within the defense marketplace. Top managers of commercial companies might find the complexities of working with the DoD as both a regulator and a buyer confusing and challenging. I am aware of these difficulties, and the department is working with our industry partners to explain the processes and to make the rules of market entry more transparent.

We in the department recognize the dichotomy of our approach and the hazards associated with it. On one side, the key attribute that allows for a steady, long-term supply base is the high barrier to entry that our market imposes. But at the same time, we want to lower these barriers to facilitate ease of entry and exit, provide access to the most advanced technology, and increase competition for our commercial partners. By reducing barriers to entry, we are opening ourselves up to companies that might respond to short-term pressures that are in direct conflict with the department's longer-term interests. We are taking measures to mitigate these risks while opening up the market to more commercial enterprises.

The third reality of our industrial base is the growing complexity and importance of the financial sector. The financial community has a vital, and often overlooked, role in ensuring the health and viability of our

industrial base. From small technology start-ups that seek venture funding to pursue transformational products and applications, to the debt markets that support our base through access to capital as programs mature and evolve, the industrial base simply cannot survive without access to capital on a competitive basis. And, as is the case with our supply chain, the financial sector is becoming more complex and more global each day. The DoD is considering how the new sources of finance affect investment opportunities in the defense industry—and whether we need to adapt our own financing policies to ensure that investment money reaches our critical suppliers.

Sector-by-Sector, Tier-by-Tier Evaluation of the Defense Industrial Base

The common theme of these three realities is that our base is becoming increasingly complex. Consider an analogy to the Mall of America: anchor stores are the major companies in defense and aerospace, the national chains are the niche suppliers, and the hundreds of other shops and stores are the multitude of lower-tier manufacturers, suppliers, and service providers in the supply chain. When you are used to buying everything from the anchor stores, it is easier to track your spending and to know where to buy the things you needed. But in the Mall of America, you might actually spend a bit at many different stores, whose names you do not really recognize—and you might wonder as you walk past other stores, who would buy anything there? The answer is probably that the Pentagon buys something from the analogous companies in the US economy, even though the department does not know much about the companies or their long-term viability.

We in the DoD lack a systematic understanding of the companies that comprise the lower tiers of the defense supply chain. These companies often contribute some of our best innovation and critical subcomponents to our vital programs and systems, yet we have had little visibility and insight into their technological and industrial capabilities and the unique challenges they face as subcontractors and lower-tier suppliers.

For this reason, my office is spearheading multiple, concurrent efforts to map and better understand the gross anatomy of the defense industrial base. The holistic, systematic character of this effort contrasts with previous program- and product-focused assessments.

The initial phase of the sector-by-sector, tier-by-tier (S2T2) review will develop a baseline of data across a wide swath of industry (including aircraft, shipbuilding, space, ground vehicles, missiles, missile defense, services, and information and communication technology). Sustained efforts will maintain and strengthen the data over time, and in the future, the database and methodology will serve as a starting point for the department's wide variety of industrial assessments. The reservoir of knowledge will contribute to acquisition decisions, help ensure realistic program objectives, and reduce programming swings that disrupt industrial base investment. It will also contribute to the department's merger, acquisition, and divestiture reviews and other industrial base policies.

Brett Lambert

*Deputy Secretary of Defense for
Manufacturing and Industrial Base Policy*

Finding Space in Deterrence

Toward a General Framework for “Space Deterrence”

AT THE DAWN of the nuclear age, deterrence came into its own. Deterrence had existed previously, of course, but the unprecedented destructive power of atomic weapons made the price of deterrence failure unaffordable. Scholars, particularly in the United States, spent careers studying and theorizing about various aspects of the superpowers' military balance—first-strike stability, escalation ladders, and conditions for deterrence failure. By the end of the Cold War, the United States had generally accepted a theory of deterrence that sought to ensure strategic stability by assuring, in the event of deterrence failure, the total annihilation of the opponent.

During this period, the safety of space systems was maintained by their close linkage to nuclear force structures. In peacetime, space systems provided reassurance that the other party was complying with nuclear arms-control treaties. During crisis and wartime, space systems could provide early warning of an attack, enable nuclear command and control authorities to dole out the appropriate level of retaliatory devastation, and conduct battle-damage assessment to confirm weapons detonated as planned. Given these roles, decision makers in Washington presumed that an attack on space assets would prefigure a nuclear confrontation. Thus, the problem of space deterrence independent of nuclear stability was uninteresting at best. This is no longer the case.

The *National Security Space Strategy* notes that space is increasingly congested, contested, and competitive.¹ Following China's 2007 debris-generating antisatellite test, which demonstrated that the contest was widening, Western scholars began to explore how to deter the use of such a capability during conflict. The starting point for this analysis, naturally, was the body of work developed to support nuclear stability. While the similarities provide a good foundation for developing a theory of space deterrence, a reluctance to scrutinize the differences will set the stage for deterrence failure.

Those differences can be examined, and the logic and grammar of space weapons can be distinguished from their strategic brethren. Such an examination highlights the limits of space deterrence while also providing

critical insights to advance a strategist's thinking on the topic. This understanding will set the stage for an understanding of deterrence dynamics as they relate to space systems, and vice versa. Employing the traditional constituent elements of deterrence—impose cost, deny benefit, and encourage restraint—this commentary demonstrates how deterrence theory can enhance the space component of strategic stability.²

Deterrence in Space or Space in Deterrence

Any analysis must begin by acknowledging the differences in destructive power between nuclear and space weapons. As devastating as space weapons can be—and while debris from China's 2007 test will threaten space operations for hundreds of years—they do not threaten the extinction of mankind. This statement is simple in formulation, but the implications are far-reaching.

First, while it can be argued that nuclear forces had a dampening effect on some conventional conflicts in some parts of the world, the primary utility of nuclear weapons by the end of the Cold War was to deter the use of similar weapons by an adversary. The uses of nuclear weapons were at the top rungs of the escalation ladder, and once exchanged, the salience of weapons beneath this rung shrank. Nuclear deterrence in many respects defined the military competition, thus the significance of crisis, conflict, or the introduction of new weapons systems was measured in terms of how they affected nuclear stability.

Counterspace systems, on the other hand, are viewed as just another weapon rather than as weapons that represent the pinnacle of conflict or that define bilateral relationships. Perhaps as a result, counterspace weapons are proliferating in terms of their types, ownership, and employment; both state and nonstate actors have used them to advance their political goals.

Second, nuclear deterrence primarily operated on a symmetrical basis. In this delicate balance, there was symmetry in mutual dependence and vulnerability. There is no effective defense against a large-scale nuclear attack, and its destructive capacity intrinsically poses existential threats to nation-states (not to mention their populations). This is not true for space.

Space systems, like terrestrial targets of nuclear weapons, share a mutual vulnerability. The domain is said to be "offense dominant," in that holding space targets at risk is far easier and cheaper than defending them.

However, mutual dependence is absent. Although other states increasingly utilize space for economic and military purposes, the United States is by far the most reliant on space systems due to its global responsibilities and high-technology approach to warfare that heavily leverages space systems for communication, navigation, and intelligence, surveillance, and reconnaissance. This asymmetry creates an imbalance; the more a nation relies on space systems, the more tempted a potential adversary is to target those systems.

Third, deterrence in space is not binary. Although some theorists distinguished between tactical and strategic nuclear exchanges, most accepted the notion that once the nuclear threshold was crossed, the future of humanity was in doubt. Counterspace weapons and targets come in many different types, with differing implications for deterrence and escalation dynamics.³ Reversible counterspace weapons that are difficult to attribute and have localized effects are more difficult to deter and are likely to be employed early in a conflict. Conversely, the use of debris-generating, kinetic weapons that destroy a space asset permanently (should) have a much higher threshold for use. Similarly, space systems also come in a variety of typologies, with concomitant effects for a deterrence theory. Disrupting the operations of a commercial communications satellite has different tactical, operational, and strategic implications than interfering with strategic early-warning satellites. As such, the threshold for deterrence in a space context varies based on both weapon and target, creating a situation where deterrence holds for some targets while simultaneously failing for others.

Given these critical differences, it becomes clear that “space deterrence” must operate on two levels. First, deterrence in space should be constructed to convince an adversary that it should not disrupt, deny, degrade, or destroy the space assets on which a nation relies. This is the most widely embraced formulation and the one which draws closest upon nuclear deterrence literature. However, since space deterrence is not binary, does not contain the requisite mutual dependence of nuclear stability, and does not operate exclusively at the highest levels of conflict, space stability must also be considered in the broader deterrence relationship between potential adversaries.

An adversary contemplating a terrestrial conflict will assess the overarching stability of the situation, including the relative balance of forces at different levels of conflict. Such an adversary may assess that the balance

of military power is against it and, therefore, decide not to undertake an action of aggression. However, if that same adversary foresees a chance to alter that balance by preemptively undercutting a critical source of the target's power—for example, by denying vital space or cyber capabilities—its conclusion may be different. As such, strategists must seek to ensure that deterrence is balanced across domains and elements of national power. The alternative is to risk that vulnerability in one narrow area, such as space, can collapse the threshold for deterrence failure more broadly. Simply put, strategic stability must be sought in space, and space stability must help maintain the overarching deterrence posture here on Earth.

Having acknowledged these differences, we now turn to construct an approach to space deterrence that deters attacks against space systems while bolstering the overarching deterrence posture. This approach—utilizing the familiar typology of impose cost, deny benefit, and encourage restraint—ensures that, should deterrence fail in space, national leaders have options and capabilities that allow them to prevail in the broader terrestrial conflict. This is imminently preferable to the options that would have been presented to leaders of the United States or the Soviet Union following the failure of nuclear deterrence.

Impose Cost

Deterrence by cost imposition involves a credible implicit or explicit threat of retaliation in response to an action by an adversary. The Cold War nuclear deterrence dynamic of mutual assured destruction is perhaps the best and most extreme example of deterrence by the threat of imposed costs. In the context of today's space domain, deterrence by cost imposition has three components: norms of behavior, the ability to attribute activity, and a credible ability to impose punishment using all elements of national power.

International norms of responsible behavior help condition potential adversaries about which actions are acceptable and which are not. Unacceptable actions risk generating proportional, though not necessarily symmetrical, responses that run from public rebuke through progressively more serious diplomatic, political, economic, and military actions. The particular response would depend largely on the terrestrial situation at the time. An understanding of what behavior is considered unacceptable and an appreciation of the potential consequences contribute to deterrence by complicating an adversary's decision-making calculus.

In addition to informing potential adversaries about activities that might prompt retaliation, norms of responsible behavior build international support for retaliatory responses. This enhances the credibility of the threat to impose costs because a potential adversary risks retaliation from an international coalition rather than just the victim. Iraq's invasion and annexation of Kuwait in the summer of 1990 is a good example. Since the aggression was a flagrant disregard of the established international order, the task of assembling an extensive coalition to liberate Kuwait and punish Iraq was comparatively easier. While reversing aggression in space is more difficult, the prospect of this dynamic bolsters space deterrence by improving the linkage between aggression and a credible response.

A critical aspect of credibility is the ability to attribute malicious activity in space. One must know that a satellite has been attacked or that a norm has been violated, whether deliberately or through gross negligence, and by whom. Attribution is particularly difficult in space because the space domain is an exceptionally harsh environment and on-orbit assets are operated from great distances. Nondestructive interference is often the result of natural phenomena (e.g., solar flares) or inadvertent interference (e.g., operator error or equipment malfunction). Even catastrophic losses can be accidental—in February 2009 an Iridium spacecraft was destroyed by a dead Russian satellite (*Cosmos 2251*). The ability to know who has taken what actions is critical to the retaliatory threat.

The final component of the cost imposition element is the credible ability to carry out retaliation. This includes all elements of national power in any domain. It need not, and should not, be limited to military actions in the space domain.

Deny Benefit

In a dynamic primarily defined by nuclear arms, the ability to impose cost was generally thought a sufficient deterrence strategy since there were no viable means of defending against, or mitigating the effects of, a nuclear conflagration. In other domains a more balanced approach is warranted. A space deterrence framework must include defensive or coping mechanisms which either raise the inherent costs of conducting the attack and/or minimize the benefit of the attack in the first place. Convincing an adversary that the contemplated aggression will not succeed or, if it does, the effect will not outweigh the costs of carrying out that action contributes to deterrence. This is particularly important when understanding space as

part of the larger balance of forces between countries. If space systems appear to be an Achilles' heel of conventional power projection, an adversary may attempt a knock-out blow before the terrestrial conflict becomes fully apparent. In this way, space vulnerability and dependence threaten to collapse the threshold for deterrence failure more broadly.

Enhancing resilience, augmentation, and the ability to operate in a degraded environment all contribute to both deterrence in space and to the space component of strategic stability. Resilient space systems and architectures can support their assigned missions despite an adversary's purposeful interference. Even in an era of fiscal austerity, resilience can be improved in a number of ways, such as disaggregating architectures into a larger number of smaller satellites or by utilizing hosted payloads.

Augmentation of national space systems through partnerships also provides an additional margin that makes it harder for a potential adversary to deprive forces of the space-derived capabilities that enable modern warfare. Such partnerships have the added benefit of complicating an adversary's decision making by introducing additional variables (influencing both the "impose costs" and "encourage restraint" dynamics). In addition to the space capabilities extant with current international partners, the commercial sector has capabilities—most notably, but not limited to, satellite communications—that could be used to augment national security capabilities. The Civil Reserve Air Fleet provides a model for using commercial capabilities in times of crisis that could be applied to space.

Regardless of the degree to which resilience can be improved and partners can contribute, some degree of degradation of the space environment is probable before and during a terrestrial conflict. US and coalition forces must be prepared to conduct successful air, land, sea, and cyber operations in this degraded space environment. Concepts of operation, tactics, techniques, and procedures, as well as redundant cross-domain capabilities, must be developed and exercised so our forces can succeed in their missions regardless of an adversary's counterspace campaign. Here again, if an adversary believes US and coalition forces will prevail in a conflict despite the effects of its counterspace campaign, then that adversary may never launch that campaign or even the broader military operation it is intended to support.

Encourage Restraint

The final element in any comprehensive deterrence strategy is encouraging restraint—convincing a potential adversary that not taking a particular action in a specific circumstance is a preferable alternative. If the action one seeks to deter is perceived to be the most viable (or least bad) option, an adversary will pursue that course and deterrence will fail.

A key facet of this effort is understanding the psychological and cultural aspects of decision making and how an adversary will evaluate available options. For example, loss avoidance—the idea that people are typically more averse to suffering a loss than they are attracted by the idea of making a gain of the same magnitude—can heavily influence decisions to attack or to accept the status quo. The particular circumstances of a terrestrial crisis are also vital to shaping these perceptions. The goal is to leave a potential adversary a viable and acceptable ladder that it can climb down during a crisis.

Next Steps

The tomes of literature on nuclear deterrence provide valuable lessons for improving our understanding of deterrence in space and the role of space in deterrence. The lessons and limits of this literature are a first step in developing a deterrence framework for space. The three elements of a deterrence framework—imposing costs, denying benefits, and encouraging restraint—do not have to be present in equal measure. By its nature, deterrence is adversary and context specific. Within the broad framework presented here, the United States must tailor specific approaches to specific potential adversaries in different scenarios. Some combination of these three elements will be required, and the elements must be applied within an overarching framework that is consistent to ensure credibility against multiple actors.

While many lament the US dependence on space, those capabilities provide an unparalleled ability to project power globally across all domains. To ensure the United States maintains the strategic advantage derived from those capabilities, it must develop a posture that not only deters counterspace operations but also ensures space instability does not collapse the threshold for deterrence failure during a broader terrestrial crisis. Such an approach offers the best chance to deter conflict and enhance

strategic stability while also providing national leaders with the ability to prevail in a conflict should space deterrence ultimately fail.

James P. Finch, Director
Shawn Steene, Deputy Director
Space Policy and Strategy Development
Office of the Undersecretary of Defense for Policy

Notes

1. *National Security Space Strategy—Unclassified Summary* (Washington: DoD, January 2011), http://www.defense.gov/home/features/2011/0111_nsss/docs/NationalSecuritySpaceStrategyUnclassifiedSummary_Jan2011.pdf.
2. See *Deterrence Operations Joint Operating Concept* (DO JOC) ver. 2.0 (Washington: DoD, December 2006), www.dtic.mil/futurejointwarfare/concepts/do_joc_v20.doc.
3. This point is made with exceptional clarity by Forrest E. Morgan, *Deterrence and First-Strike Stability in Space*, MG-916-AF (Santa Monica, CA: RAND, 2010), 17–21.

Nuclear Lessons for Cyber Security?

Joseph S. Nye Jr.

IDENTIFYING “REVOLUTIONS IN military affairs” is arbitrary, but some inflection points in technological change are larger than others: for example, the gunpowder revolution in early modern Europe, the industrial revolution of the nineteenth century, the second industrial revolution of the early twentieth century, and the nuclear revolution in the middle of the last century.¹ In this century, we can add the information revolution that has produced today’s extremely rapid growth of cyberspace. Earlier revolutions in information technology, such as Gutenberg’s printing press, also had profound political effects, but the current revolution can be traced to Moore’s law and the thousand-fold decrease in the costs of computing power that occurred in the last quarter of the twentieth century.

Political leaders and analysts are only beginning to come to terms with this transformative technology. Until now, the issue of cyber security has largely been the domain of computer experts and specialists. When the Internet was created 40 years ago, this small community was like a virtual village of people who knew each other, and they designed an open system with little attention to security. While the Internet is not new, the commercial Web is less than two decades old, and it has exploded from a few million users in the early 1990s to some two billion users today. This burgeoning interdependence has created great opportunities and great vulnerabilities, which strategists do not yet fully comprehend. As Gen Michael Hayden, former director of the CIA says, “Rarely has something been so important and so talked about with less clarity and less apparent understanding [than cyber security]. . . . I have sat in *very* small group meetings in Washington . . . unable (along with my colleagues) to decide on a course of action because we lacked a clear picture of the long-term legal and policy implications of *any* decision we might make.”²

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Governments learn slowly from knowledge, study, and experience, and learning occurs internationally when new knowledge gradually redefines the content of national interests and leads to new policies.³ For example, the United States and the Soviet Union took decades to learn how to adapt and respond to the prior revolution in military affairs—nuclear technology after 1945. As we try to make sense of our halting responses to the current cyber revolution, are there any lessons we can learn from our responses to the prior technological transformation? In comparison to the nuclear revolution in military affairs, strategic studies of the cyber domain are chronologically equivalent to 1960 but conceptually more equivalent to 1950. Analysts are still not clear about the lessons of offense, defense, deterrence, escalation, norms, arms control, or how they fit together into a national strategy. After a short overview of the problem of cyber security in the next section, I will suggest several general lessons and then discuss a number of international lessons that can be learned from the nuclear experience. While the two technologies are vastly different, as I will argue below, there are nonetheless useful comparisons one can make of the ways in which governments learn to respond to technological revolutions.

Cyberspace in Perspective

Cyber is a prefix standing for computer and electromagnetic spectrum–related activities. The cyber domain includes the Internet of networked computers but also intranets, cellular technologies, fiber-optic cables, and space-based communications. Cyberspace has a physical infrastructure layer that follows the economic laws of rival resources and the political laws of sovereign jurisdiction and control. This aspect of the Internet is not a traditional “commons.” It also has a virtual or informational layer with increasing economic returns to scale and political practices that make jurisdictional control difficult. Attacks from the informational realm, where costs are low, can be launched against the physical domain, where resources are scarce and expensive. Conversely, control of the physical layer can have both territorial and extraterritorial effects on the informational layer. Cyber power can produce preferred outcomes *within* cyberspace or in other domains *outside* cyberspace. By analogy, sea power refers to the use of resources in the oceans domain to win naval battles on the oceans, but it also includes the ability to use the oceans to influence

battles, commerce, and opinions on land. Likewise, the same analogy can be applied to airpower.

The cyber domain is a complex man-made environment. Unlike atoms, human adversaries are purposeful and intelligent. Mountains and oceans are hard to move, but portions of cyberspace can be turned on and off by throwing a switch. It is cheaper and quicker to move electrons across the globe than to move large ships long distances through the friction of salt water. The costs of developing multiple carrier task forces and submarine fleets create enormous barriers to entry and make it possible to speak of American naval dominance. In contrast, the barriers to entry in the cyber domain are so low that nonstate actors and small states can play significant roles at low cost.

The Future of Power describes diffusion of power away from governments as one of the great power shifts of this century.⁴ Cyberspace is a perfect example of this broader trend. The largest powers are unlikely to be able to dominate this domain as much as they have others like sea, air, or space. While they have greater resources, they also have greater vulnerabilities, and at this stage in the development of the technology, offense dominates defense in cyberspace. The United States, Russia, Britain, France, and China have greater capacity than other state and nonstate actors, but it makes little sense to speak of dominance in cyberspace. If anything, dependence on complex cyber systems for support of military and economic activities creates new vulnerabilities in large states that can be exploited by nonstate actors. Four decades ago, the Pentagon created the Internet, and today, by most accounts, the United States remains the leading country in both its military and societal use. At the same time, however, because of greater dependence on networked computers and communication, the United States is more vulnerable to attack than many other countries, and the cyber domain has become a major source of insecurity.⁵

The term *cyber attack* covers a wide variety of actions ranging from simple probes, to defacing websites, to denial of service, to espionage and destruction.⁶ Similarly, the term *cyber war* is used very loosely for a wide range of behaviors. In this, it reflects dictionary definitions of war that range from armed conflict to any hostile contention (e.g., “war between the sexes” or “war on poverty”). At the other extreme, some use a very narrow definition of cyber war as a “bloodless war” among states that consists only of conflict in the virtual layer of cyberspace. But this avoids important issues of the interconnection of the physical and virtual layers of cyberspace discussed

above. A more useful definition of *cyber war* is, hostile actions in cyberspace that have effects that amplify or are equivalent to major kinetic violence.

In the physical world, governments have a near monopoly on large-scale use of force, the defender has an intimate knowledge of the terrain, and attacks end because of attrition or exhaustion. Both resources and mobility are costly. In the virtual world, actors are diverse, sometimes anonymous, physical distance is immaterial, and offense is often cheap. Because the Internet was designed for ease of use rather than security, the offense currently has the advantage over the defense. This might not remain the case in the long term as technology evolves, including efforts at “reengineering” some systems for greater security, but it remains the case at this stage. The larger party has limited ability to disarm or destroy the enemy, occupy territory, or effectively use counterforce strategies. Cyber war, although only incipient at this stage, is the most dramatic of the potential threats. Major states with elaborate technical and human resources could, in principle, create massive disruption as well as physical destruction through cyber attacks on military as well as civilian targets. Responses to cyber war include a form of interstate deterrence (though different from classical nuclear deterrence), offensive capabilities, and designs for network and infrastructure resilience if deterrence fails. At some point in the future, it may be possible to reinforce these steps with certain rudimentary norms, but the world is at an early stage in such a process.

If one treats hacktivism as mostly a disruptive nuisance at this stage, there remain four major categories of cyber threats to national security, each with a different time horizon and different (in principle) solutions: cyber war and economic espionage are largely associated with states, and cyber crime and cyber terrorism are mostly associated with nonstate actors. For the United States, at the present time, the highest costs come from espionage and crime, but over the next decade or so, war and terrorism may become greater threats than they are today. Moreover, as alliances and tactics evolve among different actors, the categories may increasingly overlap. In the view of ADM Mike McConnell, “Sooner or later, terror groups will achieve cyber-sophistication. It’s like nuclear proliferation, only far easier.”⁷ We are only just beginning to see glimpses of cyber war—for instance, as an adjunct in some conventional attacks, in the denial-of-service attacks that accompanied the conventional war in Georgia in 2008, or the recent sabotage of Iranian centrifuges by the Stuxnet worm. Deputy Defense Secretary William Lynn has described the evolution of cyber

attacks from exploitation, to disruption of networks, to destruction of physical facilities. He argues that while states have the greatest capabilities, nonstate actors are more likely to initiate a catastrophic attack.⁸ A “cyber 9/11” may be more likely than the often mentioned “cyber Pearl Harbor.”

Nuclear Lessons for Cyber Security?

Can the nuclear revolution in military affairs seven decades ago teach us anything about the current cyber transformation? At first glance, the answer seems to be no. The differences between the technologies are just too great. The National Research Council cites differences in the threshold for action and attribution—nuclear explosions are unambiguous, while cyber intrusions that plant logic bombs in the infrastructure may go unnoticed for long periods before being used and, even then, can be difficult to trace.⁹ Even more dramatic is the sheer destructiveness of nuclear technology. Unlike nuclear, cyber does not pose an existential threat. As Martin Libicki points out, destruction or disconnection of cyber systems could return us to the economy of the 1990s—a huge loss of GDP—but a major nuclear war could return us to the Stone Age.¹⁰ In that and other dimensions, comparisons of cyber with biological and chemical weaponry might be more apt.

Moreover, cyber destruction can be disaggregated, and small doses of destruction can be administered over time. While there are many degrees of nuclear destruction, all are above a dramatic threshold or firebreak. In addition, while there is an overlap of civilian and military nuclear technology, nuclear originated in war, and the differences in its use are clearer than in cyber where the Web has burgeoned in the civilian sector. For example, the “dot mil” domain name is only a small part of the Internet, and 90 percent of military telephone and Internet communications travel over civilian networks. Finally, because of the commercial predominance and low costs, the barriers to entry to cyber are much lower for nonstate actors. While nuclear terrorism is a serious concern, the barriers for nonstate actors gaining access to nuclear materials remain steep; renting a botnet to wreak destruction on the Internet is both easy and cheap.

It would be a mistake, however, to neglect the past, so long as we remember that metaphors and analogies are always imperfect.¹¹ In words often attributed to Mark Twain, “History never repeats itself, but sometimes it rhymes.” There are some important nuclear-cyber strategic

rhymes, such as the superiority of offense over defense, the potential use of weapons for both tactical and strategic purposes, the possibility of first- and second-use scenarios, the possibility of creating automated responses when time is short, the likelihood of unintended consequences and cascading effects when a technology is new and poorly understood, and the belief that new weapons are “equalizers” that allow smaller actors to compete directly but asymmetrically with a larger state.¹²

Even more important than these technical and political similarities is the learning experience as governments and private actors try to understand a transformative technology—and adopt strategies to cope with it. While government reports warning about computer and Internet vulnerability date back to 1991 and the Pentagon recently released a new strategy, few observers would argue that the country has developed an adequate national strategy for cyber security. It is worth examining the uneven and halting history of nuclear learning to alert us to some of the pitfalls and opportunities ahead in the cyber domain. Ernest May once described US defense policy and the development of nuclear strategy in the first half-decade following World War II as “chaotic.”¹³ He would likely apply the same term to the situation in cyberspace today.

Some General Lessons

Expect continuing technological change to complicate early efforts at strategy. At the beginning, both fissile materials and atomic bombs were assumed to be scarce, and it was considered wasteful to use atomic bombs against any but countervalue targets—that is, cities. Bernard Brodie and others concluded in the important 1946 book *The Absolute Weapon* that superiority in numbers would not guarantee strategic superiority, deterrence of war was the only rational military policy, and ensuring survival of the retaliatory arsenal was crucial.¹⁴ These postulates of “finite” or “existential” deterrence persisted throughout the Cold War and serve as the basis for the nuclear strategies of countries such as France and China to this day. In the bipolar competition of the Cold War, however, the strategy of finite deterrence was challenged by the development of the hydrogen bomb in the early 1950s. Destructive power was no longer scarce but now unlimited. While hydrogen bombs could lead to explosions counted in the tens of megatons, their real revolutionary effect was to permit miniaturization, which allowed multiple weapons to pack huge destructive power into the nose cones of another technological surprise—intercontinental ballistic

missiles—which shortened response times to less than an hour. This burgeoning explosive power produced great concern about the vulnerability of limited arsenals, an enormous increase in the number of weapons, diminished prospects for active defenses, and the development of elaborate counterforce war-fighting strategies.

Both superpowers had to confront the “usability paradox.” If the weapons could not be used, they could not deter. The United States and the USSR were locked in a positive-sum game that involved avoiding nuclear war, but simultaneously they were locked in a zero-sum game of political competition. In the game of political chicken, perceptions of credibility became crucial. Some prospect of usability had to be introduced into doctrine, and for decades strategists wrestled with issues of counterforce targeting, exploring strategic defense technology, and the issues of perception that disparities in large numbers might create for extended deterrence. Elaborate war-fighting schemes and escalation ladders were invented by a nuclear priesthood of experts who specialized in arcane and abstract formulas. In 1976, Paul Nitze and the Committee on the Present Danger expressed alarm about American weakness when the United States possessed tens of thousands of weapons, and in 1979, even Henry Kissinger predicted that because of American nuclear weakness, Soviet risk-taking “must exponentially increase.”¹⁵ In fact, the opposite proved to be the case. While politicians and strategists assailed the idea of mutual assured destruction as an immoral and dangerous strategy, MAD turned out to be a fact, not a policy. As McGeorge Bundy noted in his final work, when it came to the Cuban missile crisis, existential deterrence worked, and a few Soviet bombs created deterrence despite an overwhelming American superiority in numbers.¹⁶

Looking at today’s cyber domain, interdependence and vulnerability are twin facts that are likely to persist, but we should expect further technological change to complicate early strategies. ARPANET was created in 1969, and the domain name system and the first viruses date back to 1983; however, as noted above, the mass use and commercial development of cyberspace date only from the invention of the Worldwide Web in 1989 and widely available browsers in the mid-1990s.¹⁷ As one expert put it, “As recently as the mid-1990s, the Internet was still essentially a research tool and the plaything of a few.”¹⁸ In other words, the massive vulnerabilities that have created the security problems we face today are less than two decades old and are likely to increase. While some experts talk about

reducing vulnerability by reengineering the Internet to make attribution of attack easier, this will take time. Even more important, it will not close all vectors of attack.

Early strategies focused on the network: improving code, computer hygiene, addressing issues of attribution, and maintaining air gaps for the most sensitive systems. These steps remain important components of a strategy, but they are far from sufficient. In some ways, the invention and explosion in the usage of the Web is analogous to the hydrogen revolution in the nuclear era. By leading society and the economy to a vast dependence on networked communications, it created enormous vulnerabilities that could be exploited not only through the Internet but also through supply chains, devices to bridge air gaps, human agents, and manipulation of social networks.¹⁹ With the development of mobility, cloud computing, and the importance of a limited number of large providers, the issues of vulnerability may change again. Given such technological volatility, a cyber security strategy will have to be multifaceted and capable of continual adaptation. It should increase the ratio of work that an attacker must do compared to that of a defender and include redundancy and resilience to allow graceful degradation of complex systems so that inevitable failures are not catastrophic.²⁰ Strategists need to be alert to the fact that today's solutions may not suffice tomorrow.

Strategy for a new technology will lack adequate empirical content. Since Nagasaki, no one has seen a nuclear weapon used in war. As Alain Enthoven, one of Robert McNamara's "whiz kids" of the early 1960s, retorted during a Pentagon argument about war plans, "General, I have fought just as many nuclear wars as you have."²¹ With little empirical grounding, it was difficult to set limits or test strategic formulations. Elaborate constructs and prevailing political fashion led to expensive conclusions based on abstract formulas and relatively little evidence. Fred Kaplan described the environment thusly:

The method of mathematical calculation, driven mainly from the theory of economics that they had all studied, gave the strategists of the new age a handle on the colossally destructive power of the weapons they found in their midst. But over the years the method became a catechism. . . . The precise calculations and the cool, comfortable vocabulary were coming all too commonly to be grasped not merely as tools of desperation but as genuine reflections of the nature of nuclear war.²²

In the absence of empirical evidence, these nuclear theologians were able to spend vast resources on their hypothetical scenarios.

Cyber has the advantage that with widespread attacks by hackers, criminals, and spies, there is more cumulative evidence of a variety of attack mechanisms and of the strengths and weaknesses of various responses to such attacks. It helps that cyber destruction can be disaggregated in a way that nuclear cannot. But at the same time, no one has yet seen a cyber war, in the strict sense of the word, as defined above. Denial-of-service attacks in Estonia and Georgia and industrial sabotage such as Stuxnet in Iran give some inklings of the auxiliary use of cyber attacks, but they do not test the full set of actions and reactions in a cyber war between states. The US government has conducted a number of war games and simulations and is developing a cyber test range, but the problems of unintended consequences and cascading effects have not been experienced. The problems of escalation as well as the implications for the important doctrines of discrimination and proportionality under the Law of Armed Conflict remain unknown.

New technologies raise new issues in civil-military relations. Different parts of complex institutions like governments learn different lessons at different paces, and new technologies set off competition among bureaucracies. At the beginning of the nuclear era, political leaders developed institutions to maintain civilian control over the new technology, creating an Atomic Energy Agency separate from the military as a means of ensuring civilian control. Congress established a Joint Atomic Energy Committee. But gaps still developed in the relationship between civilians and the military. Operational control of deployed nuclear weapons came under the Strategic Air Command, which had its own traditions, standard operating procedures, and a strong leader, Curtis LeMay. In 1957, LeMay told Robert Sprague, the deputy director of the civilian Gaither Committee that was investigating the vulnerability of American nuclear forces, that he was not too concerned because “if I see that the Russians are amassing their planes for an attack, I’m going to knock the s**t out of them before they take off the ground.” Sprague was thunderstruck and replied, “But General LeMay, that is not national policy,” to which LeMay replied, “I don’t care. It’s my policy. That’s what I’m going to do.”²³ In 1960, when President Eisenhower ordered the development of a single integrated operational plan (SIOP-62), SAC produced a plan for a massive strike with 2,164 megatons that targeted China as well as the Soviet Union because of

the “Sino-Soviet Bloc.”²⁴ The limited nuclear options that civilian strategists theorized about as part of a bargaining process would not have looked very limited from the point of view of the Soviet bargaining partner—not to mention China.

While Cyber Command is still new and has very different leadership from the old Strategic Air Command, cyber security does present some similar problems of relating civilian control to military operations. Time is even shorter. Rather than the 30 minutes of nuclear warning and possible launch under attack, today there would be 300 milliseconds between a computer detecting that it was about to be attacked by hostile malware and a preemptive response to disarm the attack. This requires not only advanced knowledge of malware being developed in potentially hostile systems but also an automated response. What happens to the human factor in the decision loop? Obviously, there is no time to go up the chain of command, much less convene a deputies’ meeting at the White House. For active defense to be effective, authority will have to be delegated under carefully thought-out rules of engagement developed in advance. Moreover, there are important questions about when active defense shades into retaliation or offense. As the head of Cyber Command has testified, such legal authorities and rules still remain to be fully resolved.²⁵

Civilian uses will complicate effective national security strategies.

Nuclear energy was first harnessed for military purposes, but it was quickly seen as having important civilian uses as well. In the early days of the development of nuclear energy, it was claimed that electricity would become “too cheap to meter” and cars would be fueled for a year by an atomic pellet the size of a vitamin pill.²⁶ The engineers’ optimism about their new technology was reinforced by a political desire to promote the civilian uses of nuclear energy. Fearful that antiwar and antinuclear movements would delegitimize nuclear weapons and thus reduce their deterrent value, the Eisenhower administration promoted an Atoms for Peace program that offered to assist in the promotion of nuclear energy worldwide. Other countries joined in. The net effect was to create a powerful domestic and transnational lobby for promotion of nuclear energy that helped provide India with the materials needed for its nuclear explosion in 1974 and justified the French sale of a reprocessing plant to Pakistan and a German sale of enrichment technology to Brazil in the mid-1970s.

The Atomic Energy Commission and the Joint Atomic Energy Committee had been created to assure civilian control of nuclear technology,

but over time both institutions became examples of regulatory capture by powerful commercial interests—more interested in promotion than regulation and security. Late in the Ford administration, both institutions were disbanded. However, after the oil crisis of 1974, it became an article of faith that nuclear would be the energy of the future; that uranium would be scarce, and thus widespread use of plutonium and breeder reactors would be necessary. When the Carter administration, following the recommendations of the nongovernmental Ford-Mitre Report,²⁷ tried to slow the development of this plutonium economy in 1977, it ran into a buzz saw of reaction not only overseas but also from the nuclear industry and its congressional allies at home.

As mentioned earlier, the civilian sector plays an even larger role in the cyber domain, and this enormously complicates the problem of developing a national security strategy. The Internet has become a much more significant contributor to GDP than nuclear energy ever was. The private sector is more than a constraint on policy; it is at the heart of the activity that policy is designed to protect. Risk is inevitable, and redundancy and resilience after attack must be built into a strategy. Most of the Internet and its infrastructure belong to the private sector, and the government has only modest levers to use. Proposals to create a central agency in the executive branch and a joint committee on cyber security in Congress might be useful, but one should be alert to the dangers of regulatory capture and the development of a cyber “iron triangle” of executive branch, congressional, and industry partners.

From a security perspective, there is a misalignment of economic incentives in the cyber domain.²⁸ Firms have an incentive to provide for their own security up to a point, but competitive pricing of products limits that point. Moreover, firms have a financial incentive not to disclose intrusions that could undercut public confidence in their products and stock prices. A McAfee white paper notes, “The public (and very often the industry) understanding of this significant national security threat is largely minimal due to the very limited number of voluntary disclosures by victims of intrusion activity.”²⁹ The result is a paucity of reliable data and an underinvestment in security from the national perspective. Moreover, laws designed to ensure competition restrict cooperation among private firms, and the difficulty of ascertaining liability in complex software limits the role of the insurance market. Public-private partnerships are limited by different perspectives and mistrust. As one participant at a recent cyber

security conference concluded, something bad will have to happen before markets begin to reprice security.³⁰

International Cooperation Lessons

Learning can lead to concurrence in beliefs without cooperation. Governments act in accordance with their national interests, but they can change how they define their interests, both through adjusting their behavior to changes in the structure of a situation as well as through transnational and international contacts and cooperation. In the nuclear domain, the initial learning led to concurrence of beliefs before it led to contacts and cooperation. The first effort at arms control, the Baruch Plan of 1946, was rejected out of hand by the Soviet Union as a ploy to preserve the American monopoly, and the early learning was unilateral on both sides.

As we have seen, much of what passed for nuclear knowledge in the early days was abstraction based on assumptions about rational actors, which made it difficult for new information to alter prior beliefs. Yet gradually, both sides became increasingly aware of the unprecedented destructive power of nuclear weapons through weapons tests and modeling, particularly after the invention of the hydrogen bomb. As Winston Churchill put it in 1955, “The atomic bomb, with all its terrors, did not carry us outside the scope of human control,” but with the H-bomb, “the entire foundation of human affairs was revolutionized.”³¹ In his memorable phrase, “Safety will be the sturdy child of terror.” On the other side of the Iron Curtain, Nikita Khrushchev recalled: “When I was appointed First Secretary of the Central Committee and learned all the facts about nuclear power I couldn’t sleep for several days. Then I became convinced that we could never possibly use these weapons, and I was able to sleep again. But all the same we must be prepared.”³² These parallel lessons were learned independently. It was not until 1985 that Ronald Reagan and Mikhail Gorbachev finally declared jointly that “a nuclear war cannot be won and must never be fought.” That crucial nuclear taboo has existed for nearly seven decades and was well ensconced before it was jointly pronounced.

A second area where concurrence in beliefs developed was in the command and control of weapons and the dangers of escalation as the two governments accumulated experience of false alarms and accidents. A third area related to the spread of nuclear weapons. Both the United States and the Soviet Union gradually realized that sharing nuclear technology and expecting that exports could remain purely peaceful was implausible.

A fourth area of common knowledge concerned the volatility of the arms race and the expenses and risks that it entailed. These views developed independently and in parallel, and it was more than two decades before they led to formal cooperation. Perfect concurrence of beliefs would lead to harmony, which is very rare in world politics. Cooperation in the nuclear area responded to both some concurrence of beliefs as well as actual and anticipated discord.³³

By its very nature, the interconnected cyber domain requires a degree of cooperation and governments becoming aware of this situation. Some analysts see cyberspace as analogous to the ungoverned Wild West, but unlike the early days of the nuclear domain, cyberspace has a number of areas of private and public governance. Certain technical standards related to Internet protocol are set (or not) by consensus among engineers involved in the nongovernmental Internet Engineering Task Force (IETF), and the domain name system is managed by the Internet Corporation for Assigned Names and Numbers (ICANN). The United Nations and the International Telecommunications Union (ITU) have tried to promulgate some general norms, though with limited success. National governments control copyright and intellectual property laws and try to manage problems of security, espionage, and crime within national policies. Though some cooperative frameworks exist, such as the European Convention on Cyber Crime, they remain weak, and states still focus on the zero-sum rather than positive-sum aspect of these games. At the same time, a degree of independent learning may be occurring on some of these issues. For example, Russia and China have refused to sign the Convention on Cyber Crime and have hidden behind plausible deniability as they have encouraged intrusions by “patriotic hackers.” Their attitudes may change, however, if costs exceed benefits. For example, “Russian cyber-criminals no longer follow hands-off rules when it comes to motherland targets, and Russian authorities are beginning to drop the laissez-faire policy.”³⁴ And China is independently experiencing increased costs from cyber crime. As in the nuclear domain, independent learning may pave the way for active cooperation later.

Learning is often lumpy and discontinuous. Large groups and organizations often learn by crises and major events that serve as metaphors for organizing and dramatizing diverse sets of experiences. The Berlin crises and particularly the Cuban missile crisis of the early 1960s played such a role. Having come close to the precipice of war, both Kennedy and

Khrushchev drew lessons about cooperation. It was shortly after the Cuban missile crisis that Kennedy gave his American University speech that laid the basis for the atmospheric test ban discussions.

Of course crises are not the only way to learn. The experience of playing iterated games of prisoner's dilemma in situations with a long shadow of the future may lead players to learn the value of cooperation in maximizing their payoffs over time.³⁵ Early steps in cooperation in the nuclear domain encouraged later steps, without requiring a change in the competitive nature of the overall relationship. These governmental steps were reinforced by informal "Track Two" dialogues such as the Pugwash Conferences.

Thus far there have been no major crises in the cyber domain, though the denial-of-service attacks on Estonia and Georgia and the Stuxnet attack on Iran give hints of what might come. As mentioned earlier, some experts think that markets will not price security properly in the private sector until there is some form of visible crisis. But other forms of learning can occur. For example in the area of industrial espionage, China has had few incentives to restrict its behavior because the benefits far exceed the costs. Spying is as old as human history and does not violate any explicit provisions of international law. Nevertheless, at times governments have established rules of the road for limiting espionage and engaged in patterns of tit-for-tat retaliation to create an incentive for cooperation. While it is difficult to envisage enforceable treaties in which governments agree not to engage in espionage, it is plausible to imagine a process of iterations (tit for tat) which develops rules of the road that could limit damage in practical terms. To avoid "defection lock-in," which leads to unwanted escalation, it helps to engage in discussions that can develop common perceptions about redlines, if not fully agreed norms, as gradually developed in the nuclear domain after the Cuban missile crisis.³⁶ Discussion helps to provide a broader context (a "shadow of the future") for specific differences, and it is interesting to note that China and the United States have begun to discuss cyber issues in the context of their broad annual Strategic and Economic Dialogue, as well as in informal Track Two settings.

Learning occurs at different rates in different issues of a new domain. While the US-Soviet political and ideological competition limited their cooperation in some areas, awareness of nuclear destructiveness led them to avoid war with each other and to develop what Zbigniew Brzezinski called "a code of conduct of reciprocal behavior guiding the competition, lessening the danger that it could become lethal."³⁷ These basic rules of

prudence included no direct fighting, no nuclear use, and communication during crisis. More specifically, it meant the division of Germany and respect for spheres of influence in Europe in the 1950s and early 1960s and a compromise on Cuba. On the issue of command and control, concerns about crisis management and accidents led to the hotline, as well as the Accidents Measures and Incidents at Sea meetings of the early 1970s. Similarly, on the issue of nonproliferation the two sides discovered a common interest and began to cooperate in the mid-1960s, well before the bilateral arms control agreements about issues of arms race stability in the 1970s. Unlike the view that says nothing is settled in a deal until everything is settled, nuclear learning and agreements proceeded at different rates in different areas.

The cyber domain is likely to be analogous. As we have seen, there are already some agreements and institutions that relate to the basic functioning of the Internet, such as technical standards as well as names and addresses, and there is the beginning of a normative framework for cyber crime. But it is likely to take longer before there are agreements on contentious issues such as cyber intrusions for purposes like espionage and preparing the battlefield. Nevertheless, the inability to envisage an overall agreement need not prevent progress on sub-issues. Indeed, the best prospects for success may involve disaggregating the term *attacks* into specific actions that could be addressed separately.

Involve the military in international contacts. As mentioned above, the military can be under civilian control but still have an independent operational culture of its own. By its nature and function, it is charged with entertaining worst-case assumptions. It does not necessarily learn the same lessons at the same rate as its civilian counterparts. Early in the SALT talks, Soviet military leaders complained about the American habit of discussing sensitive military information in front of civilian members of the Soviet delegation. The practice had the effect of broadening communication within the Soviet side. At the same time, Soviet military leaders had little understanding of American institutions or the role of Congress and how that would affect nuclear issues. Their involvement in arms talks helped to produce a more sophisticated generation of younger leaders. As Foreign Minister Andrei Gromyko put it, "It's hard to discuss the subject with the military, but the more contact they have with the Americans, the easier it will be to turn our soldiers into something more than just martinets."³⁸

In the cyber domain, the Chinese People's Liberation Army plays a major role in recruitment, training, and operations. China today provides more opportunities for PLA generals to have international contacts than was true for Soviet officers during the Cold War, but those contacts are still limited. Moreover, while political control over the Chinese military is strong, operational control is weak, as shown by a number of recent incidents. Indeed, seven of the nine members of the Standing Military Commission wear uniforms, and there is no National Security Council or equivalent to coordinate operational details across the government. The lessons from the nuclear era would suggest the importance of involving PLA officers in discussions of cyber cooperation.

Deterrence is complex and involves more than just retaliation. Early views of deterrence in the nuclear era were relatively simple and relied on massive retaliation to a nuclear attack. Retaliation remained at the core of deterrence throughout the Cold War, but as strategists confronted the usability dilemma and the problems of extended deterrence, their theories of deterrence became more complex. While a second-strike capability and mutual assured destruction may have been enough to prevent attacks on the homeland, they were never credible for issues at the low end of the spectrum of interests. Somewhere between these extremes lay extended deterrence of attacks against allies and defense of vulnerable positions such as Berlin. Nuclear deterrence was supplemented by other measures, such as forward basing of conventional forces, declaratory policy, changes of alert levels, and force movements.

Many analysts argue that deterrence does not work in cyberspace because of the problem of attribution, but that is also too simple. Interstate deterrence through entanglement and denial still exists even when there is inadequate attribution. Even when the source of an attack can be successfully disguised under a "false flag," other governments may find themselves sufficiently entangled in symmetrically interdependent relationships that a major attack would be counterproductive—witness the reluctance of the Chinese government to dump dollars to punish the United States after it sold arms to Taiwan in 2010.³⁹ Unlike the single strand of military interdependence that linked the United States and the Soviet Union during the Cold War, the United States, China, and other countries are entangled in multiple networks. China, for example, would itself lose from an attack that severely damaged the American economy, and vice versa.

In addition, an unknown attacker may be deterred by denial. If firewalls are strong or the prospect of a self-enforcing response (“an electric fence”) seems possible, attack becomes less attractive. Offensive capabilities for immediate response can create an active defense that can serve as a deterrent even when the identity of the attacker is not fully known. Futility can also help deter an unknown attacker. If the target is well protected or redundancy and resilience allow quick recovery, the risk-to-benefit ratio in attack is diminished.⁴⁰ Moreover, attribution does not have to be perfect, and to the extent that false flags are imperfect and rumors of the source of an attack are widely deemed credible (though not probative in a court of law), reputational damage to an attacker’s soft power may contribute to deterrence. Finally, a reputation for offensive capability and a declaratory policy that keeps open the means of retaliation can help to reinforce deterrence. Of course, nonstate actors are harder to deter, and improved defenses such as preemption and human intelligence become important in such cases. But among states, nuclear deterrence was more complex than it first looked, and that is doubly true of deterrence in the cyber domain.

Begin arms control with positive-sum games related to third parties.

Although the United States and the Soviet Union developed some tacit rules of the road about prudent behavior early on, direct negotiation and agreements concerning arms race stability or force structure did not occur until the third decade of the nuclear era. Early efforts at comprehensive arms control like the Baruch Plan were total nonstarters. And even the eventual SALT agreements were of limited value in controlling numbers of weapons and involved elaborate verification procedures which themselves sometimes became issues of contention. The first formal agreement was the Limited Test Ban Treaty, where detection of atmospheric tests was easily verifiable and it could be considered largely an environmental treaty. The second major agreement was the Non-Proliferation Treaty of 1968, which was aimed at limiting the spread of nuclear weapons to third parties. Both these agreements involved positive-sum games.

In the cyber domain, the global nature of the Internet requires international cooperation. Some people call for cyber arms control negotiations and formal treaties, but differences in cultural norms and the impossibility of verification make such treaties difficult to negotiate or implement. Such efforts could actually reduce national security if asymmetrical implementation put legalistic cultures like the United States at a disadvantage compared to societies with a higher degree of government corruption. At the

same time, it is not too early to explore international talks and cooperation. The most promising early areas for international cooperation are not bilateral conflicts, but problems posed by third parties such as criminals and terrorists.

For more than a decade, Russia has sought a treaty for broad international oversight of the Internet and “information security” banning deception or the embedding of malicious code or circuitry that could be activated in the event of war. But Americans have argued that arms control measures banning offense can damage defense against current attacks and would be impossible to verify or enforce. And declaratory statements of “no first use” might have restraining effects on legalistic cultures like the United States while having less effect on states with closed societies. Moreover, the United States has resisted agreements that could legitimize authoritarian governments’ censorship of the Internet. Cultural differences present a difficulty in reaching any broad agreements on regulating content on the Internet. The United States has called for the creation of “norms of behavior among states” that “encourage respect for the global networked commons,” but as Jack Goldsmith has argued, “Even if we could stop all cyber attacks from our soil, we wouldn’t want to. On the private side, hacktivism can be a tool of liberation. On the public side, the best defense of critical computer systems is sometimes a good offense.”⁴¹ From the American point of view, Twitter and YouTube are matters of personal freedom; seen from Beijing or Tehran, they are instruments of attack. Trying to limit all intrusions would be impossible, but on the spectrum of attacks ranging from soft hacktivism to hard implanting of logic bombs in SCADA (supervisory control and data acquisition) systems, one could start with cyber crime and cyber terrorism involving nonstate third parties where major states would have an interest in limiting damage by agreeing to cooperate on forensics and controls. States might start with acceptance of responsibility for attacks that traverse their territory and a duty to cooperate on forensics, information, and remedial measures.⁴² At some later points, it is possible that such cooperation could spread to state activities at the hard end of the spectrum, as it did in the nuclear domain.

Conclusion

Historical analogies are always dangerous if taken too literally, and the differences between nuclear and cyber technologies are great. The cyber

domain is new and dynamic, but so was nuclear technology at its inception. It may help to put the problems of designing a strategy for cyber security into perspective, particularly the aspect of cooperation among states, if we realize how long and difficult it was to develop a nuclear strategy, much less international nuclear cooperation. Nuclear learning was slow, halting, and incomplete. The intensity of the ideological and political competition in the US-Soviet relationship was much greater than that between the United States and Russia or the United States and China today. There were far fewer positive strands of interdependence in the relationship. Yet the intensity of the zero-sum game did not prevent the development of rules of the road and cooperative agreements that helped to preserve the concurrent positive-sum game.

That is the good news. The bad news is that cyber technology gives much more power to nonstate actors than does nuclear technology, and the threats such actors pose are likely to increase. The transnational, multiactor games of the cyber domain pose a new set of questions about the meaning of national security. Some of the most important security responses must be national and unilateral, focused on hygiene, redundancy, and resilience. It is likely, however, that major governments will gradually discover that cooperation against the insecurity created by nonstate actors will require greater priority in attention. The world is a long distance from such a response at this stage in the development of cyber technology. But such responses did not occur until we approached the third decade of the nuclear era. With the World Wide Web only two decades old, may we be approaching an analogous point in the political trajectory of cyber security? **SSQ**

Notes

1. Oddly, Max Boot does not list the nuclear revolution. See his *War Made New: Technology, Warfare and the Course of History, 1500 to Today* (New York: Gotham Books, 2006).

2. Michael V. Hayden, "The Future of Things Cyber," *Strategic Studies Quarterly* 5, no. 1 (Spring 2011): 3.

3. A pioneering work on this question is Lloyd Etheredge, *Can Governments Learn?* (Elmsford, NY: Pergamon Press, 1985).

4. Joseph S. Nye Jr., *The Future of Power* (New York: Public Affairs Press, 2011), chap. 5.

5. This point is emphasized by Richard A. Clarke and Robert Knake in *Cyberwar* (New York: HarperCollins, 2009).

6. For skeptical views that cyberwar is overhyped, see Michael Hirsh, "Here There Be Dragons," *National Journal* 23 (July 2011): 32–37.

7. McConnell quoted in Nathan Gardels, "Cyberwar: Former Intelligence Chief Says China Aims at America's Soft Underbelly," *New Perspectives Quarterly* 27, no. 2 (Spring 2010): 16.

Nuclear Lessons for Cyber Security?

8. Deputy Secretary of Defense William Lynn, remarks at 28th Annual International Workshop on Global Security, Paris, France, 16 June 2011, <http://www.defense.gov/Speeches/Speech.aspx?SpeechID=1586>.

9. William Owens, Kenneth Dam, and Herbert Lin, eds., *Technology, Policy, Law and Ethics Regarding U.S. Acquisition and Use of Cyberattack Capabilities* (Washington: National Academies Press, 2009), 294.

10. Martin C. Libicki, "Cyberwar as a Confidence Game," *Strategic Studies Quarterly* 5, no.1 (Spring 2011): 136. See also Libicki, *Cyberdeterrence and Cyberwar* (Santa Monica, CA: RAND, 2009), 136.

11. Richard Neustadt and Ernest May, *Thinking in Time: The Uses of History for Decision-Makers* (New York: Free Press, 1986).

12. Owens et al., *Technology, Policy, Law and Ethics*, 295–96.

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14. Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), 30.

15. Kissinger quoted in Robert Jervis, *The Meaning of the Nuclear Revolution* (Ithaca, NY: Cornell University Press, 1989), 102.

16. McGeorge Bundy, *Danger and Survival: Choices about the Bomb in the First 50 Years* (New York: Vintage, 1990).

17. Stuart Starr, "Toward a Preliminary Theory of Cyberpower," in *Cyberpower and National Security*, eds. Franklin Kramer, Starr, and Larry Wentz (Washington: NDU Press, 2009), 82–86.

18. Joel Brenner, *America the Vulnerable* (New York: Penguin Press, 2011), 15.

19. On supply chain vulnerability, see Scott Charney and Eric Werner, "Cyber Supply Chain Risk Management: Toward a Global Vision of Transparency and Trust," Microsoft Corp., 25 July 2011, <http://www.microsoft.com/download/en/details.aspx?id=26826>.

20. I am indebted to John Mallery of MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) for his work on these points.

21. Kaplan, *Wizards of Armageddon*, 254.

22. *Ibid.*, 391.

23. *Ibid.*, 134.

24. *Ibid.*, 269.

25. Gen Keith Alexander, quoted in "US Lacks People, Authorities to Face Cyber Attack," *Associated Press*, 16 March 2011.

26. Brian Balogh, *Chain Reaction: Expert Debate and Public Participation in American Commercial Nuclear Power, 1945–1975* (Cambridge, UK: Cambridge University Press, 1991), 31.

27. The Nuclear Energy Policy Study Group, *Nuclear Power: Issues and Choices* (Ford-Mitre Report) (Cambridge, MA: Ballinger, 1977).

28. See Brenner, *America the Vulnerable*.

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31. Churchill quoted in Michael Mandelbaum, *The Nuclear Revolution* (Cambridge, UK: Cambridge University Press, 1981), 3.

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33. I am indebted to Robert O. Keohane for this point.

34. Joseph Menn, "Moscow gets Tough on Cybercrime," *Financial Times*, 22 March 2010.

35. See Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984).
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38. Arkady Shevchenko, *Breaking With Moscow* (New York: Ballantine, 1985), 270–71. See also Raymond Garthoff, "Negotiating SALT," *Wilson Quarterly* (Autumn 1977): 79.
39. For details, see Nye, *Future of Power*, chap. 3.
40. I am indebted to the unpublished writings of Jeff Cooper on these points.
41. Jack Goldsmith, "Can We Stop the Global Cyber Arms Race," *Washington Post*, 1 February 2010.
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US Policies toward Tehran

Redefining Counterproliferation for the Twenty-First Century

Michael Kraig

NUCLEAR COUNTERPROLIFERATION IN the Persian Gulf is failing.¹ In relations with Tehran thus far, US presidents have been unrealistically calling for the eventual strategic goal of zero enrichment capabilities on Iranian soil. In defiance of these demands, Iranian enrichment activities are proceeding slowly but surely toward greater quantitative and qualitative capabilities. Extensive sanctions with genuine negative effects on the Iranian economy and society have formed the crux of US policy for 30 years,² and yet the Islamic regime remains in place, enrichment continues, reprocessing facilities for plutonium are under construction, and Iranian leaders are more intent than ever to resist international pressure on the nuclear issue, even as US preventive military attacks on Iranian nuclear facilities remain firmly on the table.³

Some might argue that there is still hope on the horizon for attaining maximalist US and Western goals vis-à-vis Iran. For instance, in 2010 the United States ultimately succeeded in pushing China, Russia, and India, however reluctantly, to agree to several UN Security Council (UNSC) resolutions in a fourth round of major sanctions.⁴ At the same time, the United States yet again ramped up billions in conventional, high-tech arms sales to the Gulf Cooperation Council (GCC) states.⁵ Meanwhile, separately from these applications of more coercive pressure towards Tehran, recent proposals from Russia, Turkey, and Brazil have in various incarnations allowed for limited Iranian production of, and access to, low-enriched uranium (LEU). Notably, these eclectic and inventive proposals have prescribed the extensive use of a third party's sovereign territory in materials storage, monitoring, and controls.⁶

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Certainly, all of these measures have produced some level of short-term or tactical improvement of the situation. However, it is dubious any real *strategic* progress has been made by any of these efforts, whether arms sales, the latest round of Western-favored sanctions, or the nascent diplomatic efforts of various rising powers. Indeed, just prior to the passage of this last round of sanctions—and while a proposal by Turkey and Brazil was being actively considered for inventive LEU storage and control options—the International Atomic Energy Agency (IAEA) reported that Iran had already produced enough LEU to make up to two bombs.⁷ More-recent reports indicate there is now enough Iranian LEU in 3.5-percent, 5-percent, and 20-percent levels to produce 3–4 nuclear bombs via enrichment to weapons-grade, highly enriched uranium (HEU).⁸ Thus, the United States finds itself in a steady march toward a counterproliferation war that nobody wants. This seemingly inexorable slide toward yet another preventive or preemptive use of American military power is in turn due to the fact that US global counterproliferation strategy and its attendant policy instruments are ultimately self-defeating at the global, regional, and national (Iranian) levels of action. First, these policy instruments fail to take into account the views and interests of rising, non-Western powers vis-à-vis Iran. Second, this US-favored approach has not fully recognized the enduring nature of Iranian strategic beliefs and threat assessments at the level of political elites who stand in the way of Iran bowing to current absolute demands but who may offer opportunities for positive leverage in Iranian internal debates under a more flexible approach. Third, the prevailing, long-standing US strategy conflates truly globalized, transnational, fundamentalist Sunni terror threats with the regional Shiite terrorist and political groups supported by revolutionary Iran. Finally, a “nuclear rollback” approach to counterproliferation fails to take into account the complexities of regional proliferation dynamics across the entire developing world. Patterns of opaque proliferation have shown themselves again and again across southern Africa, the Middle East, South Asia, and Northeast Asia over the past 50 years, with real implications for different strategic choices by external powers in their relations with Gulf States.

This article addresses each of these matters in turn, ending with the broad outlines of a new US and global strategy toward the Gulf and Iran. In particular, it argues that in the interests of regional stability, energy security, and keeping Iranian nuclear infrastructure latent rather than actualized as a weapons arsenal, the United States should refocus and

retool its counterproliferation strategy, which as currently constituted essentially requires nuclear rollback in relations with Tehran. Under this refocusing and retooling, the term *counterproliferation* would no longer mean asking Iran to reverse all of its domestic nuclear infrastructure gains. Rather, it would mean working with a bevy of non-Western rising powers as well as Arab friends in the Gulf to technologically, diplomatically, and militarily manage the reality of an Iran that is a latent nuclear weapons power.

Prevailing US Counterproliferation Agenda

Up to this point, the United States has applied a military- and sanctions-focused counterproliferation approach toward all regions of the world based upon a mix of deterrence, coercive diplomacy, unilateral and multilateral financial and trade instruments, global military superiority, and the preventive or preemptive use of military force. This broad strategy is based on a distinctly American, Wilsonian, liberal internationalist ethos, including heavy rhetorical and moral reliance on the global Non-Proliferation Treaty, or NPT. Under this treaty, US sanctions and diplomatic threats tend to be “zero sum” in that they are now asking Iranian leaders essentially to submit to Western demands for zero enrichment on Iranian soil or face potentially crippling sanctions against both the Revolutionary Guards and Iran’s imports of processed gasoline for its citizens.⁹

Indeed, these policy instruments started in 1979 with the Iranian revolution. Since then, there have been progressively tougher multilateral sanctions, including strong use of UNSC sanctions resolutions in response to reports from the IAEA of Iranian nontransparency and noncompliance alongside long-standing unilateral US embargos of Iranian goods and services. More provocatively in terms of sensitive relations with its friends and allies, the United States has enacted sanctions legislation that sometimes involves punishment of other international actors (state and nonstate) for banking with, trading with, or investing in Iran. Despite the extremely sensitive and debated nature of the latter efforts, there has been cooperation with allies and partners (especially Europeans) to shut down Iranian international financial networks and trade relations with Iranian banks—mainly via the US Treasury Department—resulting in blocked international trade deals involving Iran’s oil sector and firms tied to the Revolutionary Guards. For instance, several very lucrative and sorely

needed deals with Western multinational corporations (MNC) meant to modernize Iran's ailing petroleum extraction and processing infrastructure were scuttled due to US governmental pressure and international sanctions.¹⁰ Most controversially, there is growing pressure on Capitol Hill to implement recent legislation—and pass new bills as well—that would dramatically ramp up the punishment of foreign firms, including both Turkish and Chinese firms, for doing business with Iran in sensitive areas of technology.¹¹ These rules-based, coercive policy instruments have been simultaneously shadowed by an illicit, specially targeted, and highly destructive series of effects-based attacks by US-Israeli-produced covert computer viruses. According to widespread reports, a software attack program labeled “Stuxnet” has used the innate ubiquity and vulnerability of modern industrial control systems (command and control modules for nuclear facilities) to temporarily disable almost 1,000 centrifuges.¹²

Finally, as a result of evolutionary developments in reactions to various regional shocks and crises since roughly 1979,¹³ Gulf actors and external powers now exist in an extremely tight symbiotic relationship to provide for mutual regional and global security. The Arab Gulf monarchies, or GCC states, and the United States have particularly strong, dense, and comprehensive security relationships, with some additional assurances from NATO, the European Union, and France and the UK as independent great powers. In summary, US actions can be broadly categorized along the following lines:

- direct sales of weapons systems to individual GCC states;
- direct security training programs, encompassing new weapons systems, development of doctrine, and also counterterrorist training;
- intelligence sharing, including on both Iran and transnational threats;
- stationing of forward-deployed, battle-ready forces (with accompanying US personnel) on military bases;
- prepositioning of equipment needed for potential expeditionary operations;
- direct US Navy patrols of Gulf waterways, including port calls;
- joint naval exercises in the Gulf on a bilateral, trilateral, or very limited multilateral basis among Gulf states; and finally,

- bilateral defense and security agreements of a diplomatic nature between the United States and individual GCC states, which formalize and solidify all of the above elements on a flexible basis.¹⁴

In the realm of strategic diplomacy, the Obama administration also briefly tried a nascent, new approach to Iran by engaging Tehran in a language of “respect,” reaching out diplomatically to signal symbolic acceptance of the Islamic Republic’s existing regime.¹⁵ However, when this was not immediately and fully reciprocated—and when spring 2009 elections in Iran showed strong signs of rigging, followed by mass repression and violence against Iranian protestors¹⁶—there was the usual presidential return to strong efforts to push middle or rising powers throughout the world to end their existing economic, energy, technological, and military ties with Iran while insisting that Iran suspend all enrichment options.¹⁷ This has included constant US efforts to highlight to other nations that Iran is a “militarized dictatorship” actively in defiance of UN resolutions that call for both enrichment suspension and greater Iranian transparency.¹⁸ The United States has continued to insist that all UN member states enact and support a multilateral coercive strategy that is largely transatlantic in origin, involving especially Germany, France, and the United Kingdom. This US approach has refused to seriously consider or embrace any compromise solutions that have thus far been offered by other non-Western rising powers. It is to this issue of rising-power views, interests, motivations, and strategies that we now turn.

International Constraints on US Coercive Strategies

There are many rising powers in the world that disagree with US interpretations of what it means to implement or enforce the NPT, and this disagreement goes well beyond the much-vilified usual suspects of China and Russia, who are often depicted as uniquely obstinate in undermining concerted and principled multilateral actions in the UNSC as members of the P-5.¹⁹ This account of the problems caused by China and Russia is self-serving, in that it ignores similar policies by other rising powers that the United States is separately trying to court in different issue areas (e.g., Turkey, India, Brazil). This partial account of the facts also obscures the reality that asking Iran to submit to all IAEA requests for information and asking it to forgo all enrichment capabilities for all time are indeed two different matters. In particular, any country has a right under the NPT to

acquire peaceful nuclear infrastructure, regardless of others' assessments of its ultimate intentions, providing that it fulfills all IAEA safeguard requirements in regards to transparent verification. In contrast, the traditional and long-standing US (and increasingly European) position is that even if Iran submits to all IAEA requests, it still cannot or should not be allowed its own enrichment and/or reprocessing infrastructure. This is not necessarily supported by the NPT text, and, indeed, the United States and its European allies are on opposite ends of this issue with middle and rising powers such as Brazil, Turkey, China, Russia, and South Africa. Despite yet a fourth round of UN sanctions imposed by the UNSC in 2010, key neighboring states Turkey and the United Arab Emirates (UAE) are not doing all they can to enforce the new measures in financial and trade relations with Tehran,²⁰ and the new sanctions were diluted in any case by India, Russia, and China in their first drafting. Also, at the symbolic level, both Brazil and Turkey voted against the sanctions as temporary Security Council members at that time.²¹ Because of this reality, the toughest sanctions to date remain those of the United States and the West as a whole, representing a selective or partial form of multilateral pressure. Ironically, the toughest congressionally passed sanctions, whether in direct or indirect support of UN resolutions, are often diluted in practice by successive US presidents (of either party) because of the desire and need to maintain good relations with other global power centers, including allies in Europe, the Persian Gulf, and even Asia.²²

Overall, non-Western developing nations and rising powers (beyond Iran's own Arab Gulf neighbors) are demonstratively not moved by US arguments saying that Iran is an unrepentant rogue or militarized state, both domestically and internationally, that must be treated like a pariah and totally isolated. Strategic competitors to the United States and various other rising powers—including India, Russia, China, and even US allies Turkey and South Korea—have burgeoning energy, defense, and diplomatic ties to Iran.²³ These powers all interpret the NPT to mean that Iran *does* have a right to enrichment. Their problem is rather in the area of Iranian transparency and intentions. For instance, the United States can expect Turkey and Brazil to continue to play a classic “nonaligned” role as cultural and political mediators between East and West, North and South, essentially giving a less ideological face to programs and demands already made by the P-5, such as compromise proposals by Russia. They will continue to capitalize on the inherent political capital built up as part of their own

grand strategic foreign policies of “zero problems with other countries.”²⁴ Additionally, Brazil has innate political capital with Iran because of the tortured history of its own illicit nuclear program in the 1970–80s.²⁵

India, for its part, will continue to be “tactically tough” on short-term votes by the IAEA board of governors (of which India is a member) against Iran’s continuing opacity on supplying data, albeit just enough to ensure continuing smooth strategic relations with the United States. However, it will also continue to cooperate with Iran on building oil and gas pipelines on Iranian territory to get badly needed fuels to India’s economy as well as modernizing Iranian energy transportation infrastructure, possibly even making Iran an energy transportation hub linking Central Asia, South Asia, and the Middle East through new ports and railroads. It may in fact do the latter in cooperation with Russia and China. Further, India can be expected to support Iran in niche areas of conventional defense technologies and weaponry (e.g., India recently supplied better fuel batteries to Iran’s Russian-made submarines, as well as servicing its naval and air force equipment). It will also continue pursuing strong cultural ties that emphasize commonalities between Iran’s Shia culture and India’s own burgeoning Shiite population.²⁶

Meanwhile, Russia will continue to use the P-5 diplomatic process (inside and outside the UN) to push forth compromise proposals that involve enriching and/or storing fuel on Russian soil as a way to give Iran a symbolic claim to autonomy but also giving the West what it wants on nonproliferation. As part of such a strategy, it will still oppose tougher, “crippling” sanctions toward Iran in the P-5 diplomatic process as part of a larger position that honestly does not consider a heavily monitored, conditioned enrichment program to be a strategic threat (i.e., Russia will continue acting on its analysis that “zero enrichment” is not feasible and, in terms of curtailing threats, is not even needed). More expansively, in terms of geopolitics beyond the nuclear portfolio, Russia can be expected to continue to curtail US and NATO geopolitical and geostrategic influence by cooperating with Iran (as well as China) on Caspian Sea, Central Asian, Caucasus, and South Asian issues. It will undoubtedly increase strong bilateral trade links with Tehran, providing Iran with consumer goods, foodstuffs, and oil and gas equipment as well as assistance on infrastructural projects. In the Gulf conventional military context, it will keep supplying important niche military defense capabilities such as ballistic missile technology and contracts for a range of jet fighters, helicopters,

submarines, tanks, and air-defense missile systems to Iran. Finally, the delays caused by Stuxnet aside, Russia will help run, maintain, and service the Bushehr nuclear power reactor as a part of Iran's nuclear infrastructure that does not pose the most serious danger of weaponization, including supply of needed feedstock.²⁷

China will also oppose tougher, so-called crippling sanctions toward Iran in the P-5 diplomatic process, diluting US and European efforts as part of a larger position that closely mirrors that of Russia.²⁸ China will not abandon its argument that civil nuclear programs are allowed by the NPT, thereby strongly supporting middle-ground compromise positions offered by other powers such as Turkey, Brazil, and Russia. Like Russia, China will curtail US and NATO geopolitical and geostrategic influence by cooperating with Iran in Central Asian energy issues, especially natural gas pipelines. It will seek to increase strong bilateral trade links with Tehran, providing Iran with consumer goods (such as the manufacturing of Chinese automobiles in Iran) and oil and gas equipment as well as assistance on infrastructure projects such as highways, metro systems, and airport runways.²⁹

Indeed, this behavior of powers outside the Gulf is mimicked by some of Iran's own neighbors—principally the UAE, Turkey, Qatar, and Bahrain—who allow and even encourage dense (il)licit financial and commercial ties to the Islamic Republic, even while hosting US military bases and buying billions of dollars in advanced weaponry from the United States and other Western sources. Arab neighbors, in particular, strongly distrust and even fear a potential transnational, covert religious and ideological (political) threat from Iran due to continuing and long-standing concerns that Tehran can illicitly manipulate or aid discontented minority groups or ideological Islamist extremists within their own populations—a fear now stoked more recently by the unpredictable domestic social movements constituting the “Arab Spring.” Additionally, to add more fuel to the fire, the GCC has made blunt public statements alleging that Iran set up a covert spy ring in Kuwait, for which Kuwait expelled several Iranian diplomats in spring 2011 (while passing a death sentence for three of the covert agents).³⁰ Nonetheless, even these sovereignty-conscious GCC monarchies are justifiably afraid of taking a polarizing approach that would completely trade relations with Iran for relations with the United States, or vice-versa. They are more pragmatic, preferring to undertake insurance policies with each side simultaneously, across all instruments of power but the military factor

(the latter of which definitely is one-sided toward the United States).³¹ The United States has not had, and still will not have, the leverage necessary to get Brazil, India, Russia, China, and Turkey (and even Arab neighbors) on board with a strictly zero-sum, multilateral coercive approach. These actors' energy, trade, finance, and strategic cultural ties with Iran are simply too numerous and strong.

Iranian Strategic Perceptions

Another drawback to the current all-or-nothing counterproliferation strategy is that US policy has traditionally and erroneously assumed that there is no significant moderate opposition to nuclear hard-liners, meaning that a more nuanced approach that allows some level of domestic Iranian enrichment is automatically ruled out. The reality, instead, is that the nuclear issue is a barometer of different views from contending elite groups on Iran's proper relations with the rest of the world.³² This is witnessed by the recent fact that some very prominent conservatives, such as Mohsen Rezaei, former leader of the Basij militia in the 1980s against Iraq, have called for middle-ground options such as the creation of an international nuclear consortium on Iranian soil, with the implied message that there would be a permanent foreign presence in Iran as part of such a consortium.³³ Indeed, in addition to effectively ignoring middle-ground options in the domestic Iranian debate such as Rezaei's, the current US approach also feeds into the cynical and acutely insecure worldview of Supreme Leader Ayatollah Khamenei, validating his hard-line perception of global intentions, thereby justifying his equally hard-line domestic and international policies.

Further, the US approach ignores the fact that moderate factions have entrenched views about Iran's idealized security role in the Gulf, albeit without the religious element added into the mix. Even secular nationalists and reform-minded globalizers tend to believe or argue that Iran is the "natural" or "organic" pillar of Gulf security, or that Iran is the sovereign country most ideally placed to provide for "indigenous" Gulf security. Thus, many Iranians of all ideological stripes will continue to believe that Iran has a special place in providing the public good of security in the Persian Gulf, which means that these Persian nationalist views will have to be massaged and managed no matter which regime is in charge. Indeed, the most ardent nationalists (whether religious or secular) are dead

set on keeping the three islands of Abu Musa and the Greater and Lesser Tunbs, a claim of historical and legal ownership that remains hotly disputed by the UAE. There is no significant Iranian faction that doubts the necessity of keeping these islands under firm Iranian military occupation and control.³⁴ Implicitly, therefore, if not explicitly, Iranian leaders (with nationalistic support from citizens) presume a right to have at least some say in conventional military control of the Strait of Hormuz.³⁵ However, there are indeed perceptual and value-based attitudes among the current elites that are traceable to the specific experiences and ideology of the Islamic Republic as its own unique regime. Beyond widespread and diffuse Persian nationalism, it is important to keep in mind that Iran is equally motivated by concerns of regime preservation against perceived external socioeconomic, ideological, and military threats. Additionally, this particular regime is motivated by a desire for religious influence throughout the region, both international and transnational.³⁶

Reigning Islamic-Iranian political elites are motivated principally by an obsession with political independence and autonomy tied to original revolutionary rebellion against the Western-led global order. Iran's Islamic elites thrive on isolation and hardship, both politically and diplomatically. They routinely react to economic coercive measures with even stronger revolutionary rhetoric externally and tightened elite consensus across disputing factions internally.³⁷ In turn, Iranian zero-sum interpretations of US actions are based on long-held historical grievances and feelings of strategic victimhood, which have resulted in broadly shared patterns of thought, attitudes, and belief systems that cynically assume both unending ideological hostility and crass imperialist designs on the part of Western nations. These psychological realities are due to such concrete events as the 1953 coup against the democratically elected, left-Islamist-nationalist leader Dr. Mohammad Mossadegh (engineered explicitly by the US Central Intelligence Agency with support from Britain);³⁸ Western support of a shah who relied increasingly on torture and repression in the 1960s and 1970s to ensure his domestic rule; and the West and the world turning a blind eye to Saddam Hussein's invasion of Iran in 1980 and subsequent use of chemical weapons against both Iranian soldiers and civilians in the eight-year war. Notably, in regard to the latter, Western actions included commercial sales of dual-use chemical materials to Iraq (tacitly approved by the US administration) and even direct provision of valuable operational intelligence to the Iraqi war machine.

Thus, the Iranian elites' core concern with existential security of the state and regime preservation is based on a past that has included an all-out Iraqi missile war on civilians and cities as well as chemical weapons attacks indirectly aided by intelligence from the United States to Saddam. The overall Iranian strategic worldview is, in essence, that it lives in an unstable, threatening geopolitical environment and has suffered horribly at the hands of others in war, showing that a powerful deterrent of some kind is necessary.³⁹

One pernicious result of Iran's violent internal and external history is a resulting disdain for the moral validity and operational effectiveness of international law, which is of special importance for Iranian reactions to any US counterproliferation policies undertaken in the name of the universal NPT legal regime. In particular, the "prolonged and deeply problematic trauma"⁴⁰ felt by leading Iranian elites after experiencing strong Western and Arab support of Saddam's most extreme military operations in the 1980s has led one influential hard-line Iranian columnist to declare in 2008 that "our world is not a fair one and everyone gets as much power as he can, not for his use of reason or the adaptation of his request to the international laws, but by his bullying." In the view of many Iranian political authorities, "The international community's tepid response to such an egregious violation of Iran's sovereignty taught Tehran not to place faith in abstract principles or the world's willingness to defend them."⁴¹

Iran is motivated by an "acute, abiding sense of insecurity," as described by Iran experts Suzanne Maloney and Ray Takeyh, in which the focus on regime survival can engender *both* conservative, cautious international behavior *and* hostile, rigid behavior in the face of threats—a confusing foreign policy reality that can be hard for outsiders to fashion their own strategies around. When US and other foreign diplomats deal with Iran, for instance, mediators soon find out that "Iranian leaders exploit every opening, pursue multiple or contradictory agendas, play various capitals against one another, and use pressure tactics—including the limited use of force—to advance their interests."⁴²

Through a Glass Darkly—the Unfounded Extremes of US Threat Perceptions

What are the concrete consequences of attitudinal leadership traits in Tehran? Simply put, the most efficacious US strategy toward Iran and

toward the Gulf as a whole would recognize that in the *short term*, purely coercive, zero-sum strategies play into existing Iranian threat perceptions, exacerbating instead of mitigating Iranian fears and hostility toward both its neighbors and the West.⁴³ In the *long term*, a US strategy should also recognize that, beyond this particular regime in Tehran, the above strategic beliefs (and associated deep cultural values and emotions) are held by a wide array of elites in Iran. Thus, Iran's most worrying geopolitical behaviors are not likely to completely disappear even with more-moderate elites in power, even as they will certainly be lessened and be accompanied by much more flexible and "soft" diplomacy than the Islamic Republic typically uses.⁴⁴

However, these latter strategic turns will not be possible if US decision makers do not themselves question their own most extreme threat perceptions regarding Iranian goals. In Washington, particularly on Capitol Hill, it is often assumed that Iran's primary motive, intent, or goal is to produce nuclear warheads at the first possible moment, followed quickly by direct, first strikes against Israel and/or sharing with transnational terrorists for immediate use against US targets. That is, US *policymakers* (not necessarily the nongovernmental, think tank-based analyst community) often act as if Iranian exit from the NPT and explicit declaration of nuclear weapons status is a foregone conclusion once Iran has a moderately sustainable enrichment capability in being. Further, the strongly implied or even explicit claim in many US security pronouncements is that Iran desires to hand over nuclear weapons to global terrorist groups who are itching to kill as many Americans as possible.⁴⁵

For instance, the influential, Capitol Hill-connected Bipartisan Policy Center (BPC) has released a steady stream of major, comprehensive, and heavily cited formal annual reports on the Iranian proliferation threat, notably involving analysts associated with "both sides of the aisle" and helmed symbolically by sitting senators and former military officials. These reports, as a body, have explicitly derided the idea of relying on Cold War-style deterrence of even a latent nuclear Iran due to the assumed ideological nature of the Islamic Republic, instead calling for even stronger sanctions aimed at choking off any and all enrichment capacity. For instance, in support of their main policy recommendations (centered on the presumed ability to steadily bring other rising powers even more strongly behind such coercive instruments in a renewed multilateral front), the first BPC report (2008) argued that

The danger of the Islamic Republic developing military nuclear technology is multifold. A nuclear-ready or nuclear-armed Islamic Republic ruled by the clerical regime could threaten the Persian Gulf region and its vast energy resources . . . provide nuclear technology to other radical regimes and terrorists, and seek to make good on its threats to eradicate Israel. The threat posed by the Islamic Republic is not only direct Iranian action but also aggression committed by proxy. Western policymakers do not have the luxury of omniscience with regard to the state of Iran's program or the Iranian leadership's intentions. . . . That Iran's nuclear program remains shrouded in ambiguity only escalates the threat it poses. U.S. policymakers must consider the worst-case scenario—a first strike by Iran against U.S. interests or allies. Such a strike might occur directly or by proxy, with the Iranian leadership seeking to maintain deniability. While a primary target may be Israel, Iranian leaders may consider other targets: U.S. military bases or Saudi oil fields. In such strikes, the Iranian leadership need not rely on traditional delivery systems. There may be a strategic advantage for Iran, again in terms of deniability, if any nuclear device is ship or truck-borne rather than on a ballistic missile. Any use of an Iranian nuclear device may open U.S. policymakers to blackmail: following use of a nuclear device, Iranian leaders or terrorists may argue that they have other bombs pre-positioned in Western population centers or near other strategic targets and that they might detonate such bombs should there be either retaliation against Iran for its use of nuclear bombs, or should Western authorities not accede to specific demands.

To be clear, this analysis also mentions other threats that are more widely shared by the entire Washington policy community of experts and analysts, including the possibility of destabilization of oil prices and the creation of new, urgent incentives for nuclear proliferation by Iran's Arab neighbors—the latter, indeed, has already been mentioned in this article. However, it is in regard to the notion, described in the above quote, of an Iran that is ready and willing to either (a) use a bomb itself against US citizens, Israel, and/or Arab regimes or (b) give already-assembled bombs or bomb-making materials to terrorist proxies where bipartisan US accounts of the Iranian nuclear and terrorist threat seriously falter and overstate the case.

Yes, Iran funds and equips anti-Israeli terror groups.⁴⁶ But if Hamas or Hezbollah were to use nuclear weapons, they would obliterate themselves and their own homeland. Other than raising money abroad, these groups are tied to local concerns in their neighborhoods—neither group is a credible candidate for attacks against New York or Los Angeles. Hezbollah exists largely to serve its own Shiite citizens in Southern Lebanon, a large ethno-religious demographic that is not represented by the minority Sunni and Christian order that controls most wealth and government programs in Beirut—itsself a result of unjust, legacy colonial institutions left in place

by the French after World War II. Of course, Hezbollah is not content with this domestic mission; it also views violent opposition to Israel as a part of its founding identity, and it is currently aiding fellow Shiite brethren in Iraq, both socially and militarily. Meanwhile, Hamas exists to oppose Israeli actions in the West Bank and Gaza through terrorist attacks on Israeli citizens as well as providing social services and political representation to portions of the Palestinian populace. But despite such extreme behaviors toward Israel, neither group truly wants to strike American soil; neither is opposed to globalization per se, as is the case with Sunni fundamentalist groups such as al-Qaeda; and neither would even know what to do with a working nuclear weapon (again, unlike al-Qaeda).

Why do such distinctions matter? If Iran's nuclear and anti-Israeli policies are equated with the global terrorist threats of radical Sunni groups such as al-Qaeda, then US bargaining with Iran over its policies will remain impossible. US threat conflation creates a world in which the only viable US policy option toward Iran is eventual precision military strikes against nuclear facilities, should sanctions ultimately fail to reverse all of Iran's previous decisions to build up nuclear infrastructure. US military strikes would, in turn, cause an escalation of tensions throughout the region. Iran would work even harder to strengthen the most militant elements of anti-Israeli groups, doing all it could to undermine an Israeli-Palestinian peace. Arab citizens, already disillusioned by the US invasion of Iraq, and now galvanized by a wave of revolutionary movements across Northern Africa, the Levant, and the Gulf, would react to the US use of military force negatively—perhaps even violently—across the Middle East. Further, preventive military strikes with a counterproliferation mission would promise strong retaliation by Iran through missile strikes on Arab neighbors, blocking of Gulf shipping, and paramilitary retaliation via all arms of the Revolutionary Guards, including in Gaza and Lebanon. Brutal repression against the Iranian domestic populace itself would certainly increase.⁴⁷

Internationally, US military actions would also be roundly criticized and unsupported by all other power centers except perhaps an increasingly impatient Western Europe and Israel. Such policy would win the battle but lose the war in terms of international institutions; while saving the NPT in narrow terms, military strikes would jettison and jeopardize *all new* forms of multilateral, rule of law-based cooperation between rising global power centers, given the full extent of various rising powers' energy, trade,

and cultural relations with Iran. In the long run, even the narrow goal of saving the NPT would be lost, as more nations would come to equate the NPT with aggressive, hegemonic military strikes of a unilateral nature.

Finally, Arabs themselves, despite their innate distrust of Persian-Shiite Iran, prefer nonpolarizing approaches and, while welcoming the end of the Iranian proliferation threat, would not welcome an increased threat of a more generalized hostility from Iran across the Strait. Indeed, forward Arab bases would be used in US counterproliferation strikes, and in addition to the immediate danger of missile counterstrikes by Iran, a militarized conflict with Iran could end lucrative trade and financial ties with its neighbors, upon which smaller monarchies such as Qatar, Bahrain, and the UAE to varying degrees depend.⁴⁸

Why All Is Not Lost—the Historical Pattern of “Nuclear Opacity” in the Developing World

Despite the mixed motives of rising powers and their irksome and complex behaviors; despite the existential nature of Iranian threat perceptions; *and* despite the costs of preventive military strikes on Iran by the United States, there is still real hope for something other than a Gulf region defined by nuclear proliferation. The same variables that motivate insecure developing countries to seek nuclear infrastructure also motivate those self-same powers to proceed cautiously, incrementally, and with great trepidation in regards to building actual stockpiles of weapons-grade materials. Moreover, even if a cache of weapons-grade HEU is illicitly created, there are extremely strong incentives for the proliferator to refrain from actual weaponization of such stockpiles via creation of warheads and their emplacement on working delivery vehicles. Simply put, Iran is hardly the first case of attempted or latent nuclear proliferation in the developing world (formerly the third world), and past cases offer useful lessons for current dilemmas. Consider the formative period for many actual and potential proliferators, namely the late 1950s up to the end of the twentieth century. During this period, although not commonly recognized because of the Washington policy community's focus on the bipolar battle of communism versus capitalism, there was already an ongoing period of “maximum danger” in terms of an outbreak of nuclear weapons states. Notably, Brazil, Argentina, South Korea, South Africa, North Korea, Taiwan, Pakistan, India, Israel, Iraq, and Iran all either acquired “bombs in the basement” or came

perilously close to doing so at various points during this period. During this relatively short historical interval, all of these states (excepting the military junta-led Brazil and Argentina) experienced acute problems of conventional force imbalances and/or extraordinarily high defense burdens vis-à-vis their main neighboring rivals, and many of them were also isolated from the larger international system due to controversies over their original formation as new countries and their ideological identities. In essence, all of these states represented postcolonial cases of “contested sovereignty” vis-à-vis their nearest neighbors and rivals. For some, contested sovereignty extended to the international system as a whole.

For instance, Taiwan, South Korea, South Africa, Israel, North Korea, Iran after 1979, and Iraq after 1958 all lacked broad support from the international system during the Cold War and relied upon one or two main arms exporters for both finished platforms and a stream of parts for maintenance—primarily the United States, China, and the Soviet Union. While Pakistan and India were relatively more diplomatically and morally accepted by the international system as a whole during this period, they nonetheless followed the same pattern of nuclear opacity as their more globally isolated cohorts due to fears of losing support from their primary patrons (i.e., the United States for Pakistan and, after 1971, the Soviet Union for India) as well as fears of pushing each other to escalate the latent nuclear arms race. Perversely, while all of these nations’ security situations dictated a pursuit of the “ultimate weapon” during one or more of the decades stretching from roughly 1960 to 2000, the self-same geopolitical circumstances that made them insecure also put strong constraints on their proliferation behavior. In addition to the fear of losing military aid, economic aid, and diplomatic support from their main security patron—upon which they were desperately dependent—a fully verified nuclear capability in these regional threat environments could have caused a full-blown technological arms race between the proliferant and its main antagonist(s).⁴⁹

Because of these competing, contradictory incentives and pressures, proliferation activity in the third world has typically been of a nascent, “opaque,” hard-to-pin-down nature.⁵⁰ This has been true even of those states which demonstrably became real nuclear weapons powers, including Israel (1960s); India (with a “peaceful” test explosion allowed by the NPT in 1974); and South Africa (late 1970s up to the end of apartheid).⁵¹ On the one hand, third-world proliferants have needed to be both self-

sufficient and strong in their bargaining positions with their main suppliers, but at the same time, their status in the world community and their continued supply of arms have been contingent on the tacit agreement that they *not* acquire the bomb in full nor keep it secret if they did.⁵² Unfortunately, this is a factor often missed in US and even European debates but one which scholars from multiple proliferant countries in the developing world have been careful to outline.⁵³

The nature of this tightrope act can easily be seen in the case of South Korea, which historically has depended on the United States for massive deployments of troops and equipment to equal the forces of the North, and which continues joint equipping and training with the United States despite the North's conventional weakness in the twenty-first century. Even during the peak of the ideological Cold War, Taiwan and South Korea both harbored grave concerns over the reliability and sincerity of US support. When Presidents Nixon and Carter separately declared the US intent to pull back from foreign commitments in 1972 and 1977, respectively—which corresponded with the strengthening of relations with both the Soviets and China under *détente*—South Korea and Taiwan responded by making threatening moves toward converting their energy-related capabilities to nuclear weapons production. Recently, evidence has come to light that clearly shows they were pursuing a weaponization track in the later decades of the Cold War due to fears of the sustainability of US security commitments after Vietnam and doubts about US strategic loyalties during rapprochement with mainland China. Although it is not common knowledge, South Korea continued various experiments on chemical reprocessing of fuel for separation of plutonium and laser-based uranium enrichment into the 1980s. Both of these ongoing activities represented small but significant illicit projects that remained hidden to the IAEA until a full report was issued by the government in 2004. Ultimately, Taiwan and South Korea only veered off of this track (at repeated points in the 1970s and 1980s) after strong behind-the-scenes US bilateral diplomatic arm-twisting, continued security guarantees, and conventional weapons sales.⁵⁴

Still today, Japan and South Korea have nuclear enrichment infrastructures they could weaponize as quickly as could Iran—if they made an illicit decision to do so—because their overall technical and industrial capacities are simply more advanced and their access to international markets for nuclear materials and nuclear industry components are clearly so much better (i.e., they are not under draconian US and global sanctions regimes). On

the missile front, South Korea now has its own growing space program, in league with Russia, while Japan has a fully indigenous, latent ICBM capability via its space program to launch satellites into geosynchronous orbit. Taiwan also has been garnering substantial missile capabilities. While not commonly talked about in Washington debates, these latent nuclear and missile realities in South Korea and Japan, as well as some level of continuing technical nuclear expertise in Taiwan, do in fact have a strong bearing on twenty-first-century US conventional and nuclear commitments to all three Northeast Asian powers. This includes provision of a “nuclear umbrella” over Japan and ramped-up conventional exercises with South Korea after the North’s recent bellicosity and provocations at sea, as well as limited but still strategic “niche” arms sales to Taiwan for its defense.

Looking across the entire arc of instability over the past 50 years, it seems that the motivations for proliferation in a non-great power context tend to mitigate against the most extreme versions of great-power nuclear practices, making conflict management between rivals potentially easier despite the existence of opaque proliferation in regional threat environments. The recent balancing act between regional adversaries in the developing world—involving equally the technological, military, and political instruments of power—underscores the complex and tenuous relationship between the (latent) proliferant, its primary regional adversaries, the main arms suppliers, and the international community. Crucially, since an openly declared nuclear force would jeopardize the supplier-recipient relationship between great-power patrons and smaller states while also possibly jolting the main regional rival into similar proliferation activities, the proliferating nation has historically been induced to keep its capabilities nascent rather than real as long as possible. For instance, the fear of engendering adverse reactions from each other as well as patrons such as the United States and the Soviet Union could even be seen in the Indian and Pakistani cases, despite the less absolute nature of their international isolation compared to some other proliferants of this period. Fearful of being the first one over the edge, both countries kept their capacities strictly latent or opaque until the momentous Indian decision to test in 1998.⁵⁵ India’s tests, in turn, were meant to herald its rise to strategic equality with a burgeoning China after India had essentially shrugged off its 1970–80s Cold War dependence on the Soviet Union for most heavy conventional arms. That is, India’s tests were conducted less with an eye toward its main rival, Pakistan, and more with an eye on

traditional realpolitik and great-power competition, reflecting the global strategic reality that by the 1990s, India and China were both clearly “rising” at the same time that India’s former patron, the Soviet Union, fell apart and then precipitously declined as an ailing Russia. Thus, the historical norm of opaque proliferation in unstable parts of the developing world illustrates that the Gulf is not entirely geopolitically unique in the realm of conventional and nuclear issues—despite the absence of a revolutionary Islamic regime in other regions. It also shows that the United States has played this game before and has sometimes come out on the winning end, successfully managing some quite delicate and difficult security transitions in unstable regional environments.

The Historical Pattern as Played out in the Gulf Today

Iran is a preeminent case of this general dynamic, given that all of its Persian Gulf Arab neighbors (the six GCC states) and even Middle Eastern states further afield, such as Jordan and Egypt, have publicly declared that they are now pursuing their own peaceful nuclear energy programs, albeit without indigenous enrichment or reprocessing. In all of these recent Arab pronouncements and programs, there has been an implicit but very strong hint that if Iran weaponizes its own moderate uranium enrichment infrastructure, Gulf Arab states (and perhaps even Arab countries further afield) will not be far behind in pursuing nuclear arsenals themselves.⁵⁶

Now consider Iran’s main conventional weapons suppliers—China and Russia—who also, importantly, supply a multiplicity of other goods such as infrastructure projects for general development, some level of oil and gas exploitation infrastructure, financial aid, and trade. In the mainstream US policy debates, these patterns of behavior are routinely cast in a negative light—namely, as behavior the United States and its Western allies cannot control or constrain and which threatens the viability of the global NPT regime. However, Russia’s and China’s relations with Iran constitute a double-edged sword for Tehran because the simple fact is that Iran is increasingly dependent on these two particular rising powers for achieving its socioeconomic as well as nuclear objectives. For instance, Western experts often note that Russia and China make international enforcement of proliferation norms toward Iran extremely difficult because of their conventional arms supplies to Iran, which fill important defense niches that might allow Iran to challenge the United States and its friends and

allies in any future militarized crisis over Gulf shipping. Or, for that matter, such capabilities may also challenge any US retaliatory actions in response to Iranian support of terrorist groups or attempts to weaponize its latent nuclear capacities. As described by one watcher of both the regional and global security scenes,

Chinese technology transfers and, in particular, the sale of Silkworm anti-ship missiles to Iran in 1986, posed several problems for Washington. . . . Significant global oil travels through the narrow Strait of Hormuz, which is only 34 miles wide and connects the Gulf of Oman to the Arabian Sea. The Strait consists of 2-mile-wide channels for inbound and outbound tanker traffic, as well as a 2-mile-wide buffer zone. Iran dominates the Strait in part through its control of key islands inside the Gulf and positions along the northern coast of the Gulf. As a result, Iran could harass oil tankers exiting the Gulf as it did when US ships re-flagged Kuwaiti tankers in 1986–87. Iran tripled the number of missiles deployed on its Gulf coast and began fitting Chinese-built cruise missiles on its naval boats in 1995–96, which added a “new dimension” to its threat. Beijing’s arms connection to Iran troubled Washington enough that Secretary of Defense William Perry raised it with his Chinese counterparts as “the first issue” that could be a “potential flashpoint” in Sino-American relations.⁵⁷

Similarly, despite the fact that Russia decisively broke an earlier contract to sell its most advanced S-300 surface-to-air defense missile system in June 2010,⁵⁸ most experts still fully expect it to keep supplying important niche military defense capabilities, such as jet fighters, helicopters, submarines, tanks, and air-defense missile systems to Iran, given Russian interests in balancing US hegemony both globally and within the region.⁵⁹

Where US policymakers are rightly concerned, they are wrong in perceiving only one-half of the complex relationship between the proliferant and its conventional arms patrons. Completely in line with the historical patterns outlined above, recent history shows that even China will continue to pressure Iran by signaling that weaponization of a latent Iranian nuclear capability would endanger all of the above positive bilateral interactions and Chinese support.⁶⁰ Notably, one oft-neglected but extremely effective constraint on Iranian aggressive behavior toward its sovereign Arab neighbors within the Gulf (including proliferation behavior) is that China is already pursuing—and will increase its pursuit of—all practical trade, financial, oil, and natural gas relations with Iran’s Arab neighbors. China has purposefully and explicitly employed florid, grand diplomatic rhetoric in its evolving bilateral relations with GCC monarchies, using phrases such as “building a new Silk Road” in press releases describing

strategic meetings with new Arab partners.⁶¹ China is therefore essentially signaling to Iran that it is not a passive patron that would support all-out Persian primacy toward its weaker neighbors in the region. Put more bluntly, it is hard to imagine a future in which Russian and Chinese arms sales to Iran continue after Iran has undertaken unprovoked hostilities towards its neighbors or proceeded to build up large stockpiles of LEU or HEU under nontransparent conditions. Strategic Chinese diplomatic, trade, financial, and energy relations with the Arab monarchies in particular militate against complacency on this issue, despite its support of a peaceful nuclear infrastructure in Iran under the NPT Article IV.

Iranian Weaponization—International Coup d'État or Regime Suicide?

Even if China and Russia support Iran in ways that actually show astute realpolitik and strategic balance and moderation, what about the leaders of Iran itself? Iran's religious-political leaders have been infamous for their diatribes and threats of destruction against all enemies, using dramatic and passionate rhetoric during Friday sermons and even in diplomatic forums. Whatever its rhetoric of the moment, the Islamic regime in Tehran is hardly suicidal, even given the ideological nature of its strategic worldview. It is certainly true that Iran's nuclear energy program does have strong potential for use in weapons production, a fact that could negatively affect regional stability. Certainly, immediate weaponization of latent weapons capacities and a dramatic exit from the NPT by Tehran's hardliners would shore up revolutionary credentials and Islamic revolutionary goals of self-sufficiency, independence, and autonomy. Iran also would no longer suffer the huge economic costs of its nuclear program without the full benefit—that is, the attainment of a true nuclear deterrent and the security it would bring. As per the theory of nuclear deterrence, Iranian weaponization might conceivably stop Israeli and American preemptive military threats once and for all, since both powers would be unsure of 100-percent success in preemptive strikes and would fear nuclear escalation and retaliation even for conventional strikes against Iran. Possibly, “mutual assured destruction” would work as it always has, making Iran secure from conventional as well as nuclear strikes on its territory against its facilities or people. And arguably, as happened in the Pakistani and Indian cases,

the international community would eventually learn to live with a nuclear Iran, and current coercive sanctions would end.

There are undoubtedly some hard-line leaders in Iran who believe this security narrative. However, it is important to keep in mind the paradoxes innate in Iran's decision-making calculus, which is highly similar to other cases of latent proliferation in other regions of the developing world. Iran, as with other cases of opaque proliferation before it, faces significant disincentives for immediate and effective weaponization of its nuclear infrastructure.⁶² If Iran were to become an explicit nuclear weapons power, its neighbors would be suddenly fretting about the "nuclear balance," possibly tempted to go nuclear as well. Saudi Arabia is already a leading candidate for acquisition of a working nuclear weapon, potentially by inviting Pakistani mobile nuclear regiments into the Kingdom.⁶³ If Pakistan were to become involved in Saudi nuclear deployments or the Saudis were to build a fully indigenous program, hostile and distrustful nuclear powers would surround Iran on all sides (keeping in mind that Pakistan is, like the Arab monarchies, a mainly Sunni-oriented state, despite "normal" relations with Iran at the present moment). This would certainly lead to greater interstate tension within the Persian Gulf and larger Middle East. Iranian weaponization could even cause countries such as the UAE, Jordan, and Egypt to consider proliferation, jeopardizing Iran's current policy of mixed, pragmatic relations with the Arab Gulf monarchies by subsequently making them all-out enemies with US bases on their soil.

It is also important to keep in mind that, currently, Arabs are skeptical, fearful, and worried about Iran, but they are also distrustful of their own patron, the United States, due to policies of the past 10 years in Iraq and toward Israel.⁶⁴ Iran therefore has some respite from Arab fears and angers via the simple fact that the Arabs do not completely trust their own security patron. In contrast, under a future scenario of explicit Iranian weaponization or even just the creation of greater and greater stockpiles of LEU or HEU without any apparent restraint, Arab neighbors would become zero-sum enemies of Iran alongside the United States, endangering the already existent and quite substantial (and highly profitable) trade, financial, and other ties built up between the Revolutionary Guards and all of Iran's neighbors, including even its enemy in the Gulf islands dispute, the UAE.⁶⁵ But the strongest cost would be the one thus far avoided: a likely huge spike in coercive multilateral sanctions, agreed upon by all of the P-5, all of Europe, and most likely Turkey, Brazil, and India. In short,

a weaponization strategy would guarantee a great deal of both short-term and long-term pain, and given present domestic unrest and economic weaknesses, this could actually create an existential threat to regime stability in Tehran.⁶⁶

In the end, Iran is likely to follow the path of a latent weapons power, purposefully not constructing an explicit, fully weaponized arsenal, but rather cultivating and maintaining a hedged nuclear weapons infrastructure, much like India did from 1958 to 1998 or like Northeast Asian powers such as Japan, South Korea, and Taiwan have done on and off at various times since the 1970s (e.g., via some mix of enrichment, reprocessing, and missile capabilities). Again, as already shown, this gray-area option historically has been the path most embraced by would-be proliferators who have felt themselves in dire security straits, from South Africa to South Asia to Northeast Asia, because it gives both the security benefit domestically and internationally of having a nuclear program without incurring the global opprobrium of clearly breaking the rules of the NPT.⁶⁷ Staying within the legal limits of the allowed enrichment of materials indefinitely could create an atmosphere of constructive ambiguity that would provide Iran with international deterrent value, nationalist ideological value (in terms of revolutionary credentials at home and abroad), and a general sense of safety from acute, existential security concerns harbored by the regime. Finally, nuclear opacity would guarantee the continued flow of some important conventional weapons capabilities to Tehran from powers such as India, Russia, and China.

Managing a Latent Nuclear Weapons Power

Even accepting the current and evolving reality of nuclear opacity in the Persian Gulf, military threats still have a central place in any US strategy toward the region. The question is toward what outcomes are military threats issued? Once American and Israeli strikes are ruled out as too ineffective and too costly, and once one admits the hard truth that achieving “crippling sanctions” is an extremely low-probability event (given both the mixed interests of other non-Western powers and the dismal track record of coercive instruments in general), the only reasonable strategy remaining is a movement toward a more geopolitically savvy framework for action that relies on both conventional and nuclear deterrence to allow indefinite conflict management in a fluid Gulf security environment.

Such a strategy would still include continued strict monitoring by the IAEA, based itself on further compromises with the West and non-Western rising powers that would ideally forestall Iran creating a large LEU stockpile. However—and this is the key—the West would accept, once and for all, some level of enrichment capacity on Iranian soil, probably around levels of 3.5–20 percent, which Iran has already reached in limited quantities. In short, by accepting Iranian gains in this area, the United States would be attempting to make Iran's latent weapons capacities less and less opaque in nature, trending toward a future wherein Iran has the ability to enrich but transparency of its activities has markedly increased over time. In return, as such a scheme is being negotiated and implemented gradually in real time, the United States should be willing to enact more far-reaching proposals for easing the most punitive trade and financial sanctions toward Iran, in line with IAEA-required increases in Iranian transparency in all aspects of its program.

This said, it is unrealistic to expect Iran to agree to any new and dramatic intrusions on its sovereignty via the traditional diplomatic routes of the so-called P-5+1—the primary Western great powers of the United States, Germany, Britain, and France alongside permanent UNSC members Russia and China. Crucially, for diplomacy to have any realistic chance at all in stabilizing the current status quo, this approach would explicitly seek the help of other prominent rising powers in the global system whose own interests and ideological viewpoints are far closer to Tehran's perspective than that of Western powers. This would narrow the current regional-global gap in geopolitics that exists due to the all-or-nothing US counterproliferation agenda, which largely remains based on transatlantic agreement with European (i.e., Western) powers.

In particular, a truly new approach would enlist several G20 rising powers with past or current sensitive nuclear histories, such as South Africa, India, and Brazil, to work directly with Iran to construct genuinely new technical and political schemes for materials storage and verification, at the same time gradually opening the door to multilateral negotiations on other sensitive regional security concerns. Turkey should also be centrally involved due to its interesting and increasingly complex status as a regional neighbor of both Iran and Europe, a G20 power, a globalizing and rising economy, and a recent reputation for blazing its own path in foreign policy in ways that have gone against traditional North Atlantic security concerns. Meanwhile, on the military front, US forward deployments on

Arab soil would continue, albeit geared toward the long-haul task of deterrence of Iranian weaponization rather than achieving the purist goal of nuclear rollback in Tehran.

To arrive at this new framework of multilateral verification and control, the US strategic switch would gradually hand over substantial diplomatic heavy lifting and bargaining responsibilities to myriad influential rising powers such as South Africa, Turkey, Brazil, and India, albeit with constant, close interactions and norms of common consent behind the scenes between these powers and the IAEA, the United Nations, and the P-5+1. This hand-off is necessary due to Iranian beliefs, attitudes, and perceptions that are innately distrustful of, and hostile toward, the West as a whole. Essentially, non-Western rising powers would be used as grand strategic mediators in new diplomatic processes that together firmly commit Iran to nuclear transparency and multilateral involvement in its nuclear programs. The final outcome of this grand strategic switch would ideally be explicit international involvement by non-Western powers and the IAEA in new storage, monitoring, and handling options for Iran's most-sensitive nuclear materials, ideally involving transnational storage of LEU, repatriation of spent fuel from reactors, and strict limits on the amount of 20-percent LEU that could be produced for research purposes. Once this process is underway, the United States should ultimately allow past nascent deals with Western multinational corporations to proceed, especially in areas having to do with modernizing Iran's deteriorating oil and gas extraction, processing, and storage infrastructure. Eventually, this new diplomatic process could perhaps even produce an internationalized nuclear consortium on Iranian soil with international scientific and technical personnel working alongside Iranian cohorts on a continuous basis, a policy option already proffered in broad terms by some conservative Iranian political elites themselves in internal political debates as a solution that meets Iranian strategic cultural concerns of independence, sovereignty, and autonomy while making illicit diversion of materials for further enrichment to weapons-grade levels via batch recycling extremely difficult.

This last option would, in effect, involve the internationalization of the most-sensitive Iranian facilities, in which the facilities involved in enrichment would still be on Iranian soil but would be "multilateralized" in management and day-to-day operations. The purpose of pursuing such a concept of operations would not be to shackle Iran by inserting external agents but rather to increase its global standing as a leader in inventive,

new political and operational mechanisms for a world that is likely to see the growth of more nuclear energy programs across the developing world rather than fewer.⁶⁸ It is in essence an acceptance of (admittedly vague) proposals put forth by moderate conservatives such as Mohsen Rezaei in internal Iranian political debates as a way to square the circle of Iranian nationalism and international fears of proliferation

Precedents are already being set in this regard. Specifically, Turkey and Brazil attempted in 2009–10 to intervene at the diplomatic level as relatively neutral mediators between the strict counterproliferation demands of the West and the autarkic, revolutionary demands for total behavioral autonomy by the Islamic Republic. In 2010, they negotiated a new version of a previous fuel swap agreement with Iran, in which it would exchange 1,200 kg of its stockpile of LEU for 120 kg of fuel for the Tehran Research Reactor. Importantly, the core idea of this deal was that, during the time that is required to produce the fuel, Iran's LEU would be held in escrow by Turkey, which is a more trusted actor with cultural characteristics and geographic similarities that make it a more value-neutral territory for this deal. While the time has arguably passed for the technical specifics of this one narrow deal to be implemented, due to further Iranian LEU production at 5-percent and 20-percent levels,⁶⁹ the episode has nonetheless created a diplomatic and technical precedent for future similar deals with any number of rising powers who are not constrained by the pernicious security dilemmas of the Gulf. Thus far, the United States has reacted largely with skepticism, wariness, and even fear to the actions by these rising powers in the global system.⁷⁰ However, if such international interventions can help ensure management of a prickly Iran with a latent nuclear weapons infrastructure, thereby decreasing opacity through a continued IAEA presence in Iran (as mediated and negotiated by rising powers), then this can only be positive.

Finally, given Iran's inherent ambitions for primary influence within its own subregion of the Middle East (the Gulf) and also possibly toward Israel and the Levant (the Greater Middle East), there would be a strong continuation of US bilateral security assurances of a military nature to the six Arab Gulf monarchies and Israel. This would include even more explicit rhetoric by the United States in the sense of stronger, more-formalized deterrent threats against a potentially revanchist Iran. Thus, while direct, face-to-face multilateral nuclear negotiations would be largely delegated to non-Western powers with more legitimacy in Tehran, the United States would

still for its own part set up a purposeful and explicit strategy of military deterrence of potential Iranian aggression in any of its possible forms. The United States would certainly continue such deployments in its ongoing role as the global guarantor of oil and gas supplies from the Gulf. As noted in the most recent *National Military Strategy* released by the Joint Staff in February 2011,

Leveraging our capabilities and forward presence . . . we will be prepared to act as security guarantor—preferably with partners and allies, but alone if necessary—to deter and defeat acts of aggression. . . . The United States, allies, and our partners *will often compete with others for influence in an environment where persistent tension is the norm.* . . . This requires America’s Joint Force possesses the reach, resolve, and ability to project decisive military power. . . . Joint assured access to the global commons . . . constitutes a core aspect of U.S. national security and remains an enduring mission for the Joint Force. . . . In support of our Nation’s interests, the Joint Force will take a strong role in international efforts to safeguard access, sustain security, provide oversight and accountability, and promote responsible norms in the global commons (emphases added).⁷¹

Redefining Counterproliferation—Policy Clarity through Conceptual Clarity

Despite being completely in line with the new joint US military strategy, our policy prescriptions in the specific case of Iran may still contain heresy in current Washington and wider Western debates. But this middle-ground approach has a strong historical foundation. The idea of containing enemies by monitoring developments via intelligence and the local diplomatic capabilities of friends and allies is what the West ended up doing in the Cold War in Europe and Asia. It is important to remember, in this regard, that the original containment policy of the United States, particularly the one explicated by George Kennan,⁷² explicitly foreswore, by the late 1940s, the idea of “preventive war,” which would have been inherently offensive and first-strike in nature. Preventive war would have aimed at decimation of Soviet military-industrial capabilities and perhaps even total regime change in Moscow, rolling back communism once and for all via decisive military force. Indeed, the US Air Force was seriously entertaining such first-strike possibilities up until the moment the Soviets tested their first nuclear weapon,⁷³ and even progressive philosophers such as Bertrand Russell toyed with the idea before resigning themselves to an ideologically bipolar world. Instead, Kennan and other US elites

ended up embracing and creating a more nuanced framework that involved neither appeasement nor preventive war, but rather a long-term approach of *managed competition* that involved a use of force more in line with the security literature's conception of denial of enemy aims in both peacetime and wartime.⁷⁴ Specifically, by the late 1960s and the inauguration of the "flexible response" military strategy, the United States practiced deterrence via threatened conventional and nuclear weapons denial of Soviet territorial gains in the event of war.

There is a comparison to be made here with Iran. Counterproliferation as currently outlined by both Democrats and Republicans alike since 1992 would ask the US president to do everything necessary, even preventive war, to erase completely Iranian nuclear gains, not unlike the active speculation about US preventive war against the Soviet Union in the period 1945–49. In contrast, denial and deterrence would mean creating a norm of capped Iranian capabilities short of producing a stockpile of weapons-grade HEU and explicit weaponization. Though hardly an exact analogy, this more-mixed approach toward Iran would be completely in line philosophically with the idea of containment first laid out by Kennan and other US leaders at the start of the Cold War toward a well-armed, revolutionary, and ideologically charged Soviet Union—only this time, aimed at the Gulf regional geopolitical theater and at lessening nuclear opacity, increasing transparency, and deterring formal weaponization rather than deterring an opponent's actual use of a nuclear arsenal.

Put in more generic terms, there is a fundamental difference, both conceptually and operationally, between asking an opponent to undo an achievement it has already accomplished in concrete fact versus deterring it from undertaking further policies and actions that go against the status quo. The former is referred to as *coercive diplomacy* or *compellence*, while the latter is *deterrence*.⁷⁵ When we say, therefore, that *counterproliferation* should be redefined in US language and practice as "deterrence of Iranian nuclear weaponization and all other forms of Iranian regional aggression," we mean fundamentally that the United States accept the status quo, as it exists today, of a demonstrated partial capability of the Iranians to create low-enriched uranium. The question then becomes not "How do we best reverse Iranian gains?" but rather, "How do we construct processes and relations so that Iran's ability to produce some amount of LEU does not irreparably damage the NPT, regional Gulf security and stability, and the global energy security regime?" Thus, redefining counterproliferation in

the Persian Gulf in the twenty-first century ultimately means Western acceptance of *some level of risk* that Iran could illicitly divert some amount of this LEU to make at least one bomb's worth of weapons-grade, highly-enriched uranium—most probably, by somehow eluding inspectors to perform batch recycling of its 3.5–20 percent enriched uranium to even higher, potentially weapons-grade levels.⁷⁶ However, this risk would be actively mitigated by the creation and implementation (with other parties) of new, inventive technological-physical constraints on Iran's nuclear program, positive economic and financial incentives to Iran as part of these new constraints (that go far beyond the anemic economic “carrots” offered by the United States in the P-5+1 process thus far), and a refocusing of US military threats.⁷⁷ In other words, acceptance of risk is certainly *not* a one-way strategic street. When we argue for a new US and international counterproliferation strategy based on deterrence, containment, and engagement, we also mean the United States is not going away in terms of ensuring a reliable, safe, and stable flow of oil and natural gas from the Gulf outward to the globalized world system. The latter fact, in turn, has direct implications for what the United States will accept in terms of Iranian behavior beyond what it is already doing today, both in its nuclear program and its regional behaviors as a whole.

With this in mind, a new approach would involve a thorough, upfront construction of a fully fledged US deterrent and containment military posture, certainly requiring explicit forward planning by CENTCOM and others at the concrete operational-tactical levels.⁷⁸ It would mean a move away from the de facto approach seen so far in which a deterrent policy is only latent in US security assurances toward individual Arab states.⁷⁹ Deterrence and containment should instead be announced as the explicit grand-policy option for the Gulf region under which security assurances with Gulf Arabs, and toward Israel, would continue. For this approach to be truly sustainable politically, US leaders and the US national security establishment as a whole would have to adopt a revised US threat perception, decisively dropping the popular but empirically dubious assumption that Iran's primary intent is to put mushroom clouds over Tel Aviv and Washington as part of an irrational, messianic, and even suicidal approach to foreign policy. However, we are not just talking about changes in US perceptions and practices. Under the umbrella of deterrence and containment provided by the US military, this approach would require that diplomacy by non-Western rising powers be done strategically and carefully, not ad-hoc,

to ensure ever-greater IAEA access and confidence in its findings.⁸⁰ Thus, while accepting a certain amount of nuclear opacity upfront in the process with Iran, it should be the goal of the United States, its allies, rising powers, and the IAEA to make Iranian activities less opaque over time.

Lastly, this US change in focus would recognize that there are international moderates in Iranian politics who favor a more balanced, globalized, pragmatic approach to the rest of the world, less based on hard-line revolutionary identity and credentials and more on economic and financial openings.⁸¹ This means that the United States should proffer compromise packages that would involve serious alleviation of trade and financial sanctions in exchange for Iranian cooperation on internationalized, multilateral nuclear fuel schemes as broadly described above. That is, unlike current policy, the United States would fully plan to ease or even erase some of the most drastic and punitive sanctions if Iran takes positive steps toward transparency and multilateral engagement well short of the current Western-defined threshold of zero enrichment on Iranian soil. The United States should be comfortable with such radical proposals even if it expects the hard-liners to refuse them, because this refusal in itself would allow the informal but widespread publicizing of Iranian hard-liner intransigence for full domestic and international effect. This said, absent a changed US and international strategy as outlined herein, a public diplomacy campaign to play on internal Iranian schisms would either have no effect or would even seriously damage the cause of Iranian policy moderates, given that the current counterproliferation strategy has such drastic, isolation-based sanctions and coercive rhetoric in place. In the present US and global policy context, therefore, any outreach to a more moderate faction would in fact injure that faction domestically. It is only under a new framework of deterrence, containment, and conditional engagement—in which some Iranian nuclear fuel cycle gains are finally recognized and accepted—that a smart public diplomacy would in fact have any real or positive effect.

Historical realities have a large bearing on this grand-policy recommendation. The primary problem with today's Western strategy is that nuclear proliferation in the developing world has always involved rather harsh regional geopolitical realities that have bucked the system first created by the United States and its allies after World War II. These pesky regional realities have ineluctably involved a complex blend of realpolitik power-seeking with unique cultural, ideological, nationalist, and other value-based variables at the local level—as opposed to diffuse concerns

with global norms such as those in the NPT.⁸² Our arguments attempt to equally balance global needs with local geopolitics, as well as balance the realpolitik concerns of the rising powers of the East alongside the “rules-based” predilections of the West. In sum, the time for nuclear rollback has come and gone. Now it is time for a new approach. **ISSQ**

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67. Michael R. Kraig, “Nuclear Proliferation in the Developing World: Causes and Consequences” (PhD diss., State University of New York at Buffalo, 2001), 15–48.

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69. “IAEA Cannot Verify Iran’s Nuclear Intentions,” *Near East Report*.

70. Alexei Barrionuevo and Ginger Thompson, “Brazil’s Iran Diplomacy Worries U.S. Officials,” *New York Times*, 14 May 2010, <http://www.nytimes.com/2010/05/15/world/americas/15lula.html>.

71. Chairman of the Joint Chiefs of Staff, *The National Military Strategy of the United States of America: Redefining America’s Military Leadership* (Washington: Government Printing Office, 8 February 2011), 1–9, http://www.jcs.mil/content/files/2011-02/020811084800_2011_NMS_-_08_FEB_2011.pdf.

72. John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of American National Security Policy during the Cold War* (Oxford, UK: Oxford University Press, 2005), 24–124.

73. Marc Trachtenberg, “American Policy and the Shifting Nuclear Balance,” in *Origins of the Cold War: An International History*, eds. Melvyn P. Leffler and David S. Painter (New York: Routledge, 1994), 110–11.

74. Robert J. Art, “The Four Functions of Force,” in *The Use of Force: Military Power and International Politics*, eds. Art and Kenneth Waltz (Lanham, MD: University Press of America, 1993), 3–11.

75. Ibid.

76. See the technical details and scenarios outlined in Coats and Robb, *Meeting the Challenge*, 43–47.

77. The author makes a bit of a leap here from more-pessimistic accounts by Goldschmidt, “Nuclear Prevention and Redlines”; Eiland, “Israel’s Military Option,” 122–23; and Patrick Clawson, “Deterring and Containing Iran: A Near-Inevitable Task,” Washington Institute for Near East Policy, 8 June 2006, <http://www.washingtoninstitute.org/templateC07.php?CID=297>. Although Goldschmidt argues forcefully that thus far, Iran has manipulated the IAEA and has always been “one step ahead” of the international community on LEU developments, the author ultimately admits in his final recommendation that a certain core Iranian enrichment capability be respected and accepted. Eiland comes from a fairly realpolitik standpoint, arguing that the United States should have grabbed onto the Russian proposal and treated Russia as a powerful “swing state” for a nonproliferation coalition involving some limited enrichment, but with extremely strong international controls of enrichment facilities and all associated materials in place, while Clawson is simply fatalistic about Iranian technological realities.

78. David W. Bliessner, “A Nuclear Iran: Does This Change Everything?” DoD Report, Naval War College, October 2008, 14–19, <http://handle.dtic.mil/100.2/ADA494222>. For a detailed and quite concrete description of what military-operational shifts, particularly in the area of com-

mand and control, would be needed to actually implement a grand strategy of deterrence in the Gulf, see both Bliesner, *A Nuclear Iran*, 14–19; and Coats and Robb, *Meeting the Challenge*, 68–72.

79. James A. Russell, “Extended Deterrence, Security Guarantees and Nuclear Weapons: U.S. Strategic and Policy Conundrums in the Gulf,” *International Analyst Network*, 5 January 2010, http://www.analyst-network.com/article.php?art_id=3297.

80. Eiland, “Israel’s Military Option,” 120–22; and Goldschmidt, “Nuclear Prevention and Redlines.”

81. Chubin, “Iranian Nuclear Riddle,” 165, 170–71.

82. See Richard K. Betts, “Paranoids, Pygmies, Pariahs, and Nonproliferation Revisited,” *Security Studies* 2, no. 3/4 (1993): 100–26.

Bipolarity, Proxy Wars, and the Rise of China

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THE MODERN INTERNATIONAL system in which nation-states compete for survival has historically assumed three primary configurations: unipolarity, in which a single state acts as a hegemon;¹ bipolarity, in which two states control the majority of power with weaker states aligning with one or the other; and multipolarity, where three or more nations are powerful enough to act as poles in the system. Since the 1648 Treaties of Westphalia, multipolarity with various great-power states jockeying for supremacy has been the norm. As the fortunes of these states waxed and waned, war typically has been the ultimate result of perceived power imbalances among them. While there have been historical instances of bipolarity, each of these was regional rather than global in scope.²

Many scholars argue that the international system has assumed a unipolar orientation since 1991, with the United States the sole remaining “superpower.”³ Perhaps more important are predictions of what will follow for international relations. For example, some believe the United States will face no viable challengers in the near term, with unipolarity a stable and long-term likelihood.⁴ Others see a return to a multipolar environment wherein many nations will possess military and economic might sufficient to be recognized as great-power states.⁵ Still others foresee a return to bipolarity with the United States and one future great power locked once again in a struggle for primacy.⁶ This last possibility is increasingly influenced by Brazil, Russia, India, and China (BRIC). The most likely challenger to US hegemony to emerge, at least in the foreseeable future, is China. Only China is close to possessing sufficient economic might leveraged into

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military spending and growth to soon rival the United States. It may well become the second great-power state in a new bipolar international regime.

Scholars debate the likelihood of future war with a rising China, each side arguing whether direct conflict is inevitable. Yet this debate does not consider the most probable future of US-China relations. While direct conflict is indeed a possibility, it remains remote. A more likely outcome is subnational conflict as the United States and China engage in proxy wars over resource access in Africa. These conflicts will place great demands on all US instruments of power as involvement in foreign internal defense, particularly counterinsurgency operations in Africa, trends upward. Bipolarity and renewed proxy conflict will require rethinking of long-term national and military strategies now focused primarily on large-scale interstate wars. This will impact defense acquisition and military doctrine as US strategic focus shifts from conventional conflict to more-low-end operations.

To understand this argument, one must first define subnational and proxy conflicts and explain why nuclear powers in a bipolar system make strategic policy choices to compete by proxy. The historical record of subnational proxy conflict conducted by both the United States and the Soviet Union (USSR) from 1946 through the end of the Cold War era is illustrative, even though it was more about ideology than resources. The next section discusses the rationale for the claim that China will soon be poised to challenge the United States within a new bipolar order, the concomitant increase of proxy conflicts between the two, and the implications for US grand and military strategies, defense acquisition programs, and development of future doctrine to meet this new order. The final section discusses recommendations for strategic planning over the next several decades.

Renewed Bipolarity, Subnational Conflict, and Proxy Conflicts

Thousands of interstate conflicts have occurred since Westphalia, yet they have become relatively rare in the post-WWII era. Sixty-one have been recorded since 1946 but only five since the end of the Cold War. Intrastate conflicts, ranging from localized rebellions to civil war, increased linearly from 1946 through 1992 and then dramatically decreased in the post-Cold War era. This rise and fall of subnational conflict closely

mirrors the “proxy” wars fought by or between the USSR and the United States; the term refers to “great-power hostility expressed through client states” and describes superpower use of these states to pursue strategic and ideological goals within the confines of nuclear deterrent postures extant during the Cold War.⁷ This was done in large part to achieve strategic national interests and other political goals without risking nuclear war. In its waning years the USSR could no longer afford to fund these wars; US support to many of these commitments ended soon after.⁸ With resources depleted, former client states and subgroups had little choice but to resolve their conflicts, either via negotiation or decisive victory.

Scholars have lauded bipolarity for the stability inherent in such a regime; however, these arguments focus on Cold War relations between states and reduced incidence of interstate war.⁹ Indeed, the Cold War bipolar era was arguably more peaceful than the era preceding it, as major wars between states were relatively rare and no militarized conflict ever erupted between the two superpowers. Was Cold War interstate stability truly an artifact of a bipolar system, or were additional factors responsible?

Bipolarity did not stifle interstate conflict between seventeenth-century Britain and France when they were imperial superpowers, yet no Cold War militarized conflict broke out between the United States and the Soviet Union.¹⁰ The reason lies in the unique conditions of Cold War bipolarity; each superpower possessed sufficient nuclear capability to make war too costly to consider. Some scholars place this absence of conflict on the success of US deterrence and containment strategies.¹¹ Others cite the “stability-instability paradox,” wherein nuclear parity precludes the use of such weapons while still allowing limited conventional conflicts between nuclear-armed states.¹² Others infer that nuclear weapons played no part in Cold War peace at all.¹³ On the contrary, the perceived high costs of war in nuclear parity within a bipolar international system actually prevented war between the two. The United States and the USSR chose instead to address ideological differences indirectly by proxy within client states. While these strategies arguably kept the Cold War cold, what prescriptive logic was responsible for superpower decisions to engage in subnational conflict by proxy?

Just as interstate conflict takes many forms, from sanctions to militarized action, so too does subnational conflict cover a wide variety of cases. Civil wars often begin as grassroots organizing, followed by riots, rebellions, and insurgent conflict, prior to culminating in open war between insurgent

groups and forces of the state. Here the focus is on conflicts occurring solely within the geopolitical borders of the state, though examples of those spanning state borders also exist.¹⁴ The number of these subnational conflicts increased steadily since 1946, some lasting 50 years or more (see fig. 1). Between 1946 and 2007 there were 225 conflicts between some insurgent group and the forces of a state.¹⁵

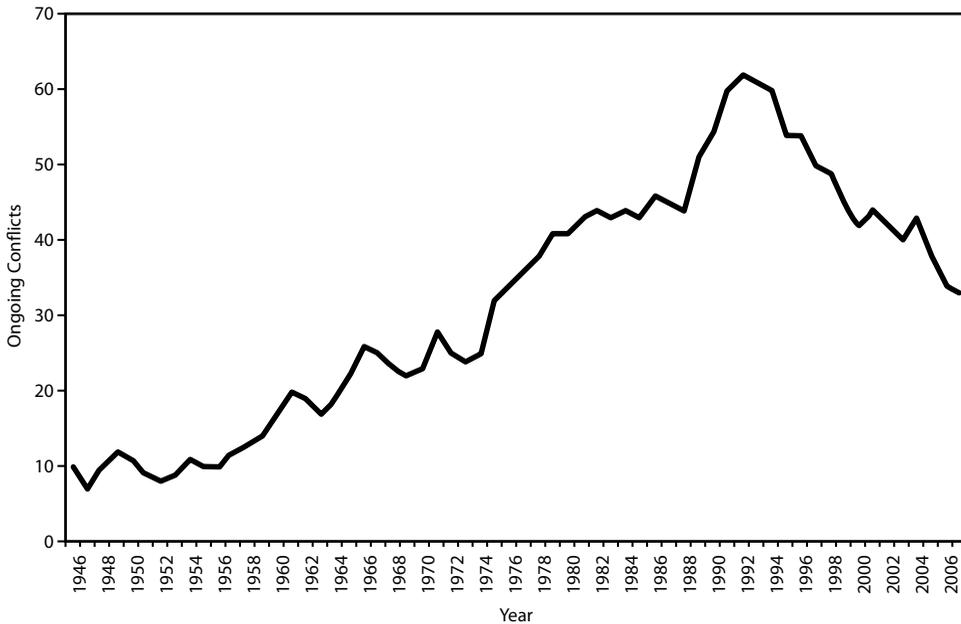


Figure 1. Ongoing subnational conflicts, 1946–2007

The number of subnational conflicts peaked in 1992 and has rapidly declined over the last two decades; ongoing conflicts in 2007 were at the same level as observed in the 1970s.¹⁶ This pattern of subnational conflict naturally produces two related questions: (1) What caused the increase in ongoing subnational conflict during the Cold War? and (2) Why has it rapidly decreased in the two decades since? Both of these questions may be answered by examining strategic foreign policy choices each superpower made during the Cold War era.

As stated earlier, proxy conflicts are those in which great-power hostilities are expressed through client states rather than between great powers themselves. These proxy conflicts occur between nations that disagree over specific

issues but do not wish to engage in direct conflict. A significant portion of Cold War–era subnational conflicts were proxy conflicts sponsored by the United States and/or the USSR in support of their geopolitical and ideological differences. It must also be noted that impressions of power were just as important as military equality; this resulted in strategies that depended on *perceptions* of a balance of power as much as the balance itself.¹⁷ Thus, US policy treated any Soviet gains as a threat that had to be countered in a zero-sum realpolitik game.

Cold War proxy conflicts usually took the form of aid provided to either insurgent forces or to those of the state—cash transfers, provision of weapons/technology, and advisory or combat support. While many instances of US and Soviet aid to states in conflict remain classified and thus impossible to account for at present, there are still many where such aid was identifiable. Dozens of subnational conflicts during the Cold War were proxy wars of the United States or the USSR, and their distribution is suggestive. Nearly half of these occurred during the Cold War's first two decades, when US-USSR competition was on the rise; this percentage declined in the 1980s as Soviet economic support dwindled and US aid to these nations quickly followed suit.¹⁸ So, while the high cost of interstate conflict in the Cold War bipolar system wherein nuclear annihilation was possible led to peace between the great powers, it *increased* the incidence of subnational proxy conflict via two complementary mechanisms. It provided the superpowers a means to achieve geostrategic goals without the risk of nuclear war while also providing groups within client states the means to achieve their goals, through violence if necessary.

Why did the United States and the USSR engage in Cold War proxy conflict? Realists of the period warned against doing so—involvement in third-world conflicts was detrimental to US interests and did not enhance the all-important balance of power.¹⁹ One possible explanation is that great powers prefer to compete by proxy without direct conflict to achieve their strategic interests and engender goodwill via soft-power strategies.²⁰ But the historical record does not support this, as great powers have often fought with one another. A more credible explanation is found in the structural conditions that existed in the Cold War international environment. As the United States and the USSR reached nuclear parity, danger of nuclear annihilation successfully deterred both sides from direct conflict. Yet each was driven to spread its ideology to the greatest extent possible, both to maximize alliance pools and achieve realpolitik goals of maximum

security.²¹ A combination of realist political goals, coupled with the reality of nuclear parity, moved each away from direct confrontation and toward goal achievement via proxy conflict in client states.

The earliest Cold War example of subnational proxy conflict was the Greek Civil War, a communist uprising supported by Yugoslavia and Bulgaria and countered by the Greek army with support from the United States and the United Kingdom.²² The United States also funded and equipped the 1954 coup in Guatemala that ousted President Guzman and ultimately led to the 36-year civil war that followed.²³ Other examples in the Western Hemisphere include the Cuban Revolution; the long civil war in El Salvador, where the United States supported Salvadoran government forces against the left-wing Farabundo Marti National Liberation Front; and the funding of rebel Contras in Nicaragua.²⁴

Many Cold War proxy conflicts occurred in Africa following the end of European colonization there in the 1950s and '60s.²⁵ Probably the most infamous of these was the Angolan civil war, which began in 1975 and continued until 2002. Estimates of battle deaths exceed half a million. In this conflict the United States provided monetary assistance to National Union for the Total Independence of Angola (UNITA) rebel forces, while Cuban troops participated as a Soviet expeditionary force of sorts on the side of Angola's communist government.²⁶ Other examples include the Soviets' provision of weapons to the Mengistu regime in Ethiopia and US/USSR backing of the civil war in Mozambique.²⁷ Examples in Asia include the US-sponsored mujahedeen fighting the Soviets in Afghanistan and US involvement in the Vietnam War.²⁸

Although some of these conflicts persist, many ended following the dissolution of the USSR. Support for the Nicaraguan Contras ended after the scandal broke in the United States; a negotiated peace followed two years later.²⁹ Moscow ended all support for the Mengistu regime in 1990; it fell to rebels soon after.³⁰ When backing for the Angolan conflict was withdrawn, the UNITA and the People's Movement for the Liberation of Angola soon agreed to a settlement.³¹ Many of the conflicts during this period were arguably initiated and certainly prolonged by external support from the two superpowers; it has been argued such external support is in fact vitally necessary for successful insurgencies.³² While neither side had direct stakes in these conflicts, the desire to resolve ideological differences within the constraints of nuclear parity drove each to create

national security policies that took realpolitik and domestic security concerns to foreign battlefields to engage in conflict by proxy.

The rising incidence of subnational conflict during the Cold War and its decline in the current era were thus influenced by superpower policy decisions to pursue strategic goals by proxy within client states to avoid the high costs of nuclear war. As the USSR lost the ability to fund these proxy wars, it ceased such aid and the United States followed suit. Although it is impossible to prove that loss of aid was a primary causal factor in many conflict resolutions in the post-Cold War era, it likely would have forced belligerents to search for alternative funding or prepare for peace. Since 1990, conflict resolution has occurred at nearly three times the Cold War rate—many thus seem to have chosen this route.³³ The current unipolar environment appears to be more peaceful in terms of relations both between and within states. However, several states now appear capable of achieving great-power status; if one of these amasses a sufficient level of economic and military might to challenge the United States, a return to international bipolarity is likely.

Future Challenges to the Current Unipolar Order

The so-called BRIC states—Brazil, Russia, India, and China—arguably possess the potential to rise to great-power status at some future point, yet only China has both the capability and the will to do so in the near term. There is strong rationale for singling out China as the next US peer competitor. This US-Sino competition will result in a new bipolar international regime and lead to resurgence in subnational proxy conflict, as both states compete for future access to scarce strategic resources, primarily in the African region.

China's economy has exploded in recent years, surpassing Japan to become the world's second largest economy (behind the United States) in the second quarter of 2010.³⁴ This gap is likely to decrease in the ongoing economic crisis; US growth remains sluggish, while China's is again 9 percent per annum. China has embarked on an ambitious program of military modernization, acquiring advanced offensive and defensive capabilities,³⁵ while US deficits are likely to result in reductions in defense expenditures, further decreasing the military capabilities gap.³⁶ China's economic and military might, coupled with its large population, point to its emergence as both a great power and a US peer competitor in the near future.

Volumes of scholarly literature detail China's rise to great-power status and the likely implications thereof.³⁷ Given its prodigious economic growth, it is natural to question whether such a rise will be accompanied by US-Sino conflict. Such an outcome is unlikely, primarily because of a return of nuclear parity within a bipolar environment.³⁸ There are concerns over China's increasing need for fuel imports to support its expanding infrastructure. China shows little concern with the political ideologies of regimes with which it trades; yet, its willingness to deal with states like Iran and Sudan could worsen relations with the United States.³⁹ China's ongoing military modernization also appears designed in part to deny the United States the ability to deter it in the near future through strategies focused primarily on interruptions of its oil supply via area denial or control of critical eastern sea lines of communication.

China is expanding its web of regional alliances via arms transfers and other inducements that may result in a wall of allies the United States will find difficult to penetrate to protect its interests in the Eastern Hemisphere.⁴⁰ China is also willing to protect those interests militarily where necessary; some aver the 1996 Taiwan crisis indicated China may be prepared to take Taiwan by force in a preemptive attack.⁴¹ Yet, evidence suggests its neighbors welcome the economic opportunities China presents to them and believe its intentions are peaceful and focused on domestic stability and growth rather than regional dominance.⁴² Since it is unlikely that any regional attempts to balance a rising China are forthcoming, at least in the near term, it falls to the United States as the peer competitor to do so. While US military preeminence is still clear, trends appear to indicate the United States will find it increasingly difficult to compete with China for strategic resource requirements as China's geostrategic influence expands.

Bipolarity, Nuclear Weapons, and Sino-US Proxy Conflict in Africa

It is likely China will achieve economic and then military parity with the United States in the next two decades. China currently possesses 240 nuclear warheads and 135 ballistic missiles capable of reaching the United States or its allies; that number of nuclear warheads is estimated to double by the mid 2020s.⁴³ As during the Cold War, a bipolar system in which war between the United States and China is too costly will lead to policy decisions that seek conflict resolution elsewhere.⁴⁴ But why would China's rising necessarily lead to geostrategic competition with the United States, and where would this most likely occur? Unlike the Cold War, access to

strategic resources rather than ideology would lie at the heart of future US-Sino competition, and the new “great game” will most likely be played in Africa.

Despite Communist Party control of its government, China is not interested in spreading its version of communism and is much more pragmatic in its objectives—securing resources to meet the needs of its citizens and improve their standard of living.⁴⁵ Some estimates show that China will overtake the United States to become the world’s largest economy by 2015, and rising powers usually take the necessary steps to “ensure markets, materials, and transportation routes.”⁴⁶ China is the leading global consumer of aluminum, copper, lead, nickel, zinc, tin, and iron ore, and its metal needs now represent more than 25 percent of the world’s total.⁴⁷ In contrast, from 1970 to 1995, US consumption of all materials, including metals, accounted for one-third of the global total despite representing only 5 percent of the world’s population.⁴⁸ China is the largest energy consumer, according to the International Energy Agency, surpassing the United States in consumption of oil, coal, and natural gas in 2009.⁴⁹ As the two largest consumers of both global energy and materials, the United States and China must seek foreign policy prescriptions to fulfill future resource needs. While the United States can alleviate some of its energy needs via bio- or coal-based fuels, hydrogen, or natural gas alternatives, China currently lacks the technological know-how to do so and remains tied to a mainly nonrenewable energy resource base. Since the majority of these needs are nonrenewable, competition of necessity will be zero-sum and will be conducted via all instruments of power.⁵⁰

Africa is home to a wealth of mineral and energy resources, much of which still remains largely unexploited. Seven African states possess huge endowments of oil, and four of these have equally substantial amounts of natural gas.⁵¹ Africa also enjoys large deposits of bauxite (used to make aluminum), copper, lead, nickel, zinc, and iron ore, all of which are imported and highly desired by China. Recent activity serves to prove that China seeks greater access to natural resources in Africa by avidly promoting Chinese development in a large number of African nations. South Africa, the continent’s largest economy, has recently allowed China to help develop its vast mineral wealth; it is China’s number one African source of manganese, iron, and copper.⁵² Chinese involvement in Africa is not wholly extractive; the continent provides a booming export market for China’s goods and a forum to augment its soft power in the region by

offering alternatives to the political and economic baggage that accompanies US foreign aid.⁵³

Of primary interest is open access to Africa's significant deposits of oil and other energy resources. For example, China has 4,000 military personnel in Sudan to protect its interests in energy and mineral investments there; it also owns 40 percent of the Greater Nile Oil Production Company.⁵⁴ Estimates indicate that within the next few decades China will obtain 40 percent of its oil and gas supplies from Africa.⁵⁵ Trade and investment in Africa have also been on the rise; trade has grown more than 10 percent annually in the past decade. Between 2002 and 2004, African exports to China doubled, ranking it third behind the United States and France in trade with the continent. Chinese investment is also growing; more than 700 Chinese business operations across Africa total over \$1 billion. Aid and direct economic assistance are increasing as well, and China has forgiven the debt of some 31 African nations.⁵⁶

Africa is thus a vital foreign interest for the Chinese and must be for the United States; access to its mineral and petroleum wealth is crucial to the survival of each.⁵⁷ Although the US and Chinese economies are tightly interconnected, the nonrenewable nature of these assets means competition will remain a zero-sum game. Nearly all African states have been independent entities for less than 50 years; consolidating robust domestic state institutions and stable governments remains problematic.⁵⁸ Studies have shown that weak governments are often prime targets for civil conflicts that prove costly to control.⁵⁹ Many African nations possess both strategic resources *and* weak regimes, making them vulnerable to internal conflict and thus valuable candidates for assistance from China or the United States to help settle their domestic grievances. With access to African resources of vital strategic interest to each side, competition could likely occur by proxy via diplomatic, economic, or military assistance to one (or both) of the parties involved.

Realist claims that focusing on third-world issues is misplaced are thus fallacious; war in a future US-China bipolar system remains as costly as it was during the Cold War. Because of the fragile nature of many African regimes, domestic grievances are more prone to result in conflict; US and Chinese strategic interests will dictate an intrusive foreign policy to be both prudent and vital. US-Sino proxy conflicts over control of African resources will likely become necessary if these great powers are to sustain their national security postures, especially in terms of strategic defense.⁶⁰

What does this mean for the future of US grand and military strategy, foreign policy prescriptions, future defense acquisition priorities, and military doctrine and training?

Implications for the United States

The Obama administration's 2010 *National Security Strategy* (NSS) departed from the preceding administration's focus on preventive war and the use of the military to succeed in this effort. The new NSS focuses instead on international institutions and robust alliances to build a more peaceful world, a restructuring of the global economy, limiting the spread of WMDs, and combating terrorism. To do this, the 2010 NSS argues, the United States must "balance and integrate all elements of American power and update our national security capacity for the 21st century. *We must maintain our military's conventional superiority*, while enhancing its capacity to defeat asymmetric threats"⁶¹ (emphasis added). All this is based on the assumption that the current unipolar international environment persists. If a new bipolar order arises in which Chinese competition for scarce resources represents the new status quo, future NSS submittals must reflect the nature of such competitive behavior.

The current US defense budget requires approximately \$680 billion—more than all other nations combined. To support the current NSS, the *National Military Strategy* must focus on maintaining conventional military superiority by requiring the acquisition of military equipment that supports traditional force-on-force military operations.⁶² Yet, the United States must ensure access to strategic resources as well, and if African subnational proxy conflict rises, national and military strategies must adapt to meet this future challenge. While current capabilities are necessary, current conventional strategies focus overly on fighting the last war. If the United States is to maintain access to the strategic resources it needs to sustain its place in the future global order, it must improve its ability to meet the asymmetric threats it may face in proxy conflicts in Africa, where foreign internal defense operations will dominate. The asymmetric nature of future conflict over African resources means defense acquisition must therefore focus on equipping and training military as well as civilian foreign internal defense teams. Both military and civilian doctrine must be altered to allow robust and effective interagency actions to meet the challenges of proxy conflict that will span the continuum of war from security

forces assistance, counterinsurgency, information, and combat operations to peace enforcement and postconflict stability efforts.

Recommendations

Conventional wisdom suggests the United States will benefit by ending its recent forays into counterinsurgency operations and returning to conventional war-fighting preparation to meet a rising China head on.⁶³ However, the likelihood of a direct militarized conflict between the United States and China is low, and nuclear war between the two is unthinkable. It is thus imperative the United States reduce its focus on maintaining conventional force superiority—it already outdistances anything that could challenge it in the near future. Instead it should better fund acquisition and training programs to deal with future asymmetric, subnational warfare. Advances in interagency support to foreign internal defense have been substantial, yet doctrinal improvements covering provincial reconstruction teams and interagency cooperation for combat and phase IV operations must continue. While US military forces have proven invaluable in the postconflict efforts in Iraq and Afghanistan, resource constraints caused by the current financial crisis will undoubtedly force future defense cuts and require enhanced interagency involvement instead.

Reliance on conventional “business as usual” war fighting to meet the threat of a rising China will divert precious resources away from a looming crisis in US access to foreign strategic resources, especially in Africa. Tying financial aid to democratic institution building is also a failed strategy. Instead, the United States must employ its soft power to persuade African nations to work with it. The time to do so is now, before China’s inroads in African states become insurmountable. If the United States is to secure its resource needs from Africa in the future, it must be prepared to employ all elements of hard and soft power to meet the demands of future proxy conflict on the continent.

Conclusion

The United States currently enjoys a unique position as the sole global superpower, yet it is unlikely this unipolar moment will endure much longer. China is uniquely positioned to translate rapidly expanding economic might into sufficient military resources to achieve regional hegemony.

To meet the needs of its growing population and burgeoning economy, China must focus on obtaining strategic resources abroad, and herein lies the challenge for US foreign policy makers. In a future bipolar system where a nuclear-equipped China and United States both require non-renewable strategic resources, competition for such resources will be a vital strategic interest for each side.

Scholars debate whether such strategic interests will necessitate conflict between the United States and China in the future, yet preparations for such conflict now dominate US defense policy. The alternative, strategically justified future is one of proxy wars with China for continued access to strategic resources, particularly in African states. While the United States should not reduce current preparations for conventional war-fighting dominance, prudence dictates that it also prepares for future proxy conflict management in Africa.

The ongoing financial crisis will undoubtedly force reductions in future defense spending if the United States is to reduce its national debt load. This will necessitate further strategic, military, and interagency doctrinal and training realignments if it is to be successful in meeting the challenges of future foreign internal defense operations in Africa and elsewhere. Preparations must begin soon if the United States is to overcome the looming challenge of strategic resource competition with China. A failure to plan for this proxy competition may well make a future war with China inevitable. **SSQ**

Notes

1. I define a unipolar system similarly to that in Christopher Layne's "The Unipolar Illusion: Why New Great Powers Will Rise," *International Security* 17, no. 4 (1993): 5, wherein a single power possesses sufficient military and economic resources to preclude any attempts to balance against it.

2. Athens and Sparta are early examples, as are Philip II's Spain and France during the sixteenth century and Great Britain and France during the late seventeenth and early eighteenth centuries.

3. See Charles Krauthammer, "The Unipolar Moment," *Foreign Affairs* 70, no. 1 (1990); William C. Wohlforth, "The Stability of a Unipolar World," *International Security* 24, no. 1 (1999); and Michael Mastanduno, "Preserving the Unipolar Moment: Realist Theories and U.S. Grand Strategy after the Cold War," *International Security* 21, no. 4 (1997). See also Stephen Brooks and William C. Wohlforth's defense of unilateralism in "International Relations Theory and the Case against Unilateralism," *Perspectives on Politics* 3, no. 3 (2005).

4. These predictions are cited by Christopher Layne in *The Peace of Illusions: American Grand Strategy from 1940 to the Present* (Ithaca, NY: Cornell University Press, 2006), 134–35, by what

he terms “unipolar optimists” who argue that US hard power allows no likely counterbalancing because of the high costs involved.

5. One example is made in John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: W. W. Norton, 2001), in which he warns of the likelihood of a return of international conflict in multipolarity.

6. Christopher Layne, “The Unipolar Illusion: Why New Great Powers Will Rise,” *International Security* 17, no. 4 (1993): 5–51.

7. Although definitions of proxy conflict are varied, I find the one used by Dillon Craig in “State Security Policy and Proxy Wars in Africa: Ultima Ratio Regum: Remix or Redux?” *Strategic Insights* 9, no. 1 (Spring/Summer 2010): 2, to be most useful.

8. See, for example, Alex Thomson, *An Introduction to African Politics* (New York: Routledge, 2000), 160.

9. A detailed argument about the alleged stability of bipolar international systems can be found in Kenneth Waltz, *Theory of International Politics* (Boston: McGraw Hill, 1979).

10. Other instances of regional bipolarity (e.g., Athens vs. Sparta, 17th-century Spain vs. France) were also conflictual.

11. An evaluation and appraisal of the evolution of Cold War US grand strategy can be found in John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of American National Security Policy During the Cold War* (New York: Oxford University Press, 1982).

12. Layne, *Peace of Illusions*, 176.

13. See, for example, John Mueller, “The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World,” *International Security* 13, no. 2 (1988): 56.

14. For example, see Jon Abbink, “Proxy Wars and Prospects for Peace in the Horn of Africa,” *Journal of Contemporary African Studies* 21, no. 3 (September 2003).

15. Conflict data were obtained from the UCDP/PRIO Armed Conflict Data Set, version v4-2009, <http://www.prio.no/CSCW/Datasets/Armed-Conflict/UCDP-PRIO/>.

16. Ibid.

17. Gaddis, *Strategies of Containment*, 90.

18. The United States and the Soviet Union were involved heavily in proxy conflicts in the first two decades following WWII; by the 1980s their level of involvement had dropped to less than 20 percent. Sources include John Prados, *Safe for Democracy: The Secret Wars of the CIA* (Chicago: Ivan R. Dee Publishers, 2006).

19. Realists such as Hans J. Morgenthau in *Politics among Nations: The Struggle for Power and Peace* (New York: Alfred A. Knopf, 1978) and Kenneth Waltz in *Theory of International Politics* have argued against US involvement in third-world proxy wars.

20. An example of nonmilitary involvement can be found in US humanitarian efforts in Haiti, yet this endeavor has been blasted by Venezuela and France as a US occupation attempt. See Barron Youngsmith, “Proxy War: How Haiti Became a Battlefield for the Great Powers,” *New Republic*, 30 January 2010. Joseph S. Nye Jr., *Soft Power: The Means to Success in World Politics* (New York: Public Affairs, 2004), also explains how soft power increases US security in the modern age.

21. Layne, *Peace of Illusions*, 28–38.

22. See Maria Nikolopoulou, *The Greek Civil War: Essays on a Conflict of Exceptionalism and Silences* (London: Ashgate Publishing, 2004). US policy for the conflict was first outlined in President Truman’s speech of 12 March 1947, when he stated that the United States should “make full use of its political, economic and, if necessary, military power in such a manner as may be found most effective to prevent Greece from falling under the domination of the USSR.”

John O. Iatrides, "Britain, the United States and Greece, 1945–9," in *The Greek Civil War, 1943–50: Studies of Polarization*, ed. David H. Close (London: Routledge, 1993), 202.

23. Susanne Jonas, *The Battle for Guatemala: Rebels, Death Squads, and U.S. Power* (Boulder, CO: Westview Press, 1991), 70. Additional information is included in Guy Arnold, *Wars in the Third World since 1945* (London: Cassell Villiers House, 1995), 601.

24. Elisabeth Jean Wood, *Insurgent Collective Action and Civil War* (Cambridge: Cambridge University Press, 2003), 28. Corroborating information on US intentions was obtained from a speech by former secretary of state Alexander Haig to NATO on 18 February 1981 in which he states, "We consider what is happening is part of the global Communist campaign . . . to support the Marxists in El Salvador." Martin E. Gettleman, ed., *El Salvador: Central America in the New Cold War* (New York: Grove Press, 1981). Also see Arnold, *Wars in the Third World*, 594–99. For the Nicaraguan civil war, see Roger Miranda and William Ratliff, *The Civil War in Nicaragua: Inside the Sandinistas* (New Brunswick, NJ: Transaction Publishers, 1993). Additional information was obtained from Arnold, *Wars in the Third World*, 616–20.

25. Thomson, *Introduction to African Politics*, 152–53, describes the evolution of Soviet support in Africa in its goal of expanding socialism on the continent.

26. William Minter, *Apartheid's Contras: An Inquiry into the Roots of War in Angola and Mozambique* (London: Zed Books, 1994); and Arnold, *Wars in the Third World*, 362–64.

27. Richard J. Bloomfield, ed., *Regional Conflict and U.S. Policy: Angola and Mozambique* (Algonac, MI: Reference Publications, 1988); and Arnold, *Wars in the Third World*, 400–11.

28. This is not to say proxy conflict was not present in the Middle East—US cash grants to Israel, CIA support to the Afghan mujahedeen, and the ouster of Mossadegh in Iran all supported US policies meant to disadvantage Western competition and forge a strategic alliance against the USSR, according to Beverley Milton-Edwards and Peter Hinchcliffe, *Conflict in the Middle East since 1945* (London: Routledge, 2001).

29. See, for example, John R. Thackrah, *The Routledge Companion to Military Conflict since 1945* (New York: Routledge, 2009), 32.

30. *Ibid.*, 74.

31. Raymond W. Copson, *Africa's Wars and Prospects for Peace* (Armonk, NY: M. E. Sharpe, Inc., 1994), 114–25. Although Soviet support was high through 1988, by 1990 the USSR no longer had the will to fund the conflict; both the United States and the USSR cut funding with the 1991 negotiated peace settlement.

32. Jeffrey Record, *Beating Goliath: Why Insurgencies Win* (Washington: Potomac Books, Inc., 2007), xi.

33. Data obtained from the UCDP/PRIO Armed Conflict Data Set, version v4-2009.

34. "China Overtakes Japan as World's Second-Biggest Economy," *Bloomberg News*, 16 August 2010, <http://www.bloomberg.com/news/2010-08-16/china-economy-passes-japan-s-in-second-quarter-capping-three-decade-rise.html>.

35. Jonathan Pollack, "American Perceptions of Chinese Military Power," in *The China Threat: Perceptions, Myths and Reality*, eds. Ian Storey and Herbert Yee (New York: Routledge-Courzon, 2002), 44, outlines an array of Chinese military advances.

36. Aaron Friedberg, "Implications of the Financial Crisis for the US-China Rivalry," *Survival* 52, no. 4 (2010): 33–36, describes a wide range of effects resulting from the financial crisis on US-Chinese rivalries.

37. Jack S. Levy, "Power Transition Theory and the Rise of China," in *China's Ascent: Power, Security and the Future of International Politics*, eds. Robert S. Ross and Zhu Feng (Ithaca, NY: Cornell University Press, 2008), 32, argues China will challenge the United States in Asia, and to a lesser extent Africa, only until it develops sufficient power projection capability to expand

further. Zhu Feng, "China's Rise will be Peaceful: Unipolarity Matters," in *ibid.*, 53, claims China's rise will be peaceful, using soft balancing against the United States in a unipolar construct.

38. John Ikenberry, "The Rise of China: Power, Institutions and the Western Order," in *China's Ascent*, 92, shows how strengthening international institutions will force China to peaceably rise within them rather than mounting a challenge to the international order. Jonathan Kirschner in *China's Ascent*, 239, claims that while Sino-US economic tensions will sometimes be high, war is also unlikely over this issue.

39. Robert Kaplan, "The Geography of Chinese Power: How Far Can Beijing Reach on Land and at Sea?" *Foreign Affairs* 89, no. 3 (May/June 2010): 2, states that such actions are also conflictual in that they are shifting the balance of power in the Eastern Hemisphere, which "must mightily concern the United States."

40. Jacqueline Newmyer, "Oil, Arms and Influence: The Indirect Strategy behind Chinese Military Modernization," *Orbis*, Spring 2009, 207, also shows how Chinese military modernization will soon make US efforts to protect Taiwan too costly to consider and obviate the need for a Chinese use of force in such a conflict.

41. Andrew Scobell, *China's Use of Military Force: Beyond the Great Wall and the Long March* (New York: Cambridge University Press, 2003), 189–91, describes Chinese offensive capabilities during this incident.

42. David Kang, *China Rising: Peace, Power and Order in East Asia* (New York: Columbia University Press, 2007), 197–98, makes a strong case that regional balancing against China is thus unlikely.

43. Robert Norris and Hans Kristensen, "Chinese Nuclear Forces, 2010," *Bulletin of the Atomic Scientists* 66, no. 6 (2010): 134.

44. Aaron Friedberg, "The Future of U.S.-China Relations: Is Conflict Inevitable?" *International Security* 30, no. 2 (2005): 17–19, argues that the costs of such conflict will cause both sides to carefully avoid direct conflict.

45. Kaplan, "Geography of Chinese Power," 2, argues China is anxious to secure energy, metals, and strategic minerals to meet these needs.

46. Friedberg, "Future of U.S.-China Relations," 17–19, also highlights China's potential for economic growth and its implications.

47. Kaplan, "Geography of Chinese Power," 4, notes that resource acquisition is "the primary goal of China's foreign policy everywhere."

48. Grecia Matos and Lorie Wagner, "Consumption of Materials in the United States, 1900–1995," *Annual Review of Energy and the Environment* 23 (November 1998): 107–22, <http://pubs.usgs.gov/annrev/ar-23-107/aerdocnew.pdf>.

49. Data obtained from the US-China Economic and Security Review Commission's 2010 Report to Congress, 183, http://www.uscc.gov/annual_report/2010/10report_chapters.php.

50. Friedberg, "Future of U.S.-China Relations," 19, shows how rising-power states such as China will take necessary steps to ensure access to required resources. He also states that disputes over these issues are "seldom resolved peacefully."

51. These states are Libya, Nigeria, Angola, Algeria, Egypt, Sudan, and the Democratic Republic of the Congo. Reserve information was obtained from the *CIA World Factbook*, <https://www.cia.gov/library/publications/the-world-factbook/>.

52. See "China to Help South Africa Develop Mineral Wealth," *Bloomberg News*, 25 August 2010.

53. Peter Lewis, "China in Africa," *Bretton Woods Committee* 2, no. 1 (2007): 1.

54. Bill Emmott, *Rivals: How the Power Struggle between China, India and Japan Will Shape our Next Decade* (Orlando, FL: Mariner Books, 2009), 53.

55. Jonathan Holslag and Sara Van Hoeymissen, "The Limits of Socialization: The Search for EU-China Cooperation towards Security Challenges in Africa," Brussels Institute of Contemporary China Studies policy report, 30 May 2010. China currently imports more than a quarter of its oil from Africa.

56. Economic data from Lewis, "China in Africa," 12.

57. Stephen Burgess argues that the United States has traditionally relied on free-market forces in Africa and elsewhere for access to its strategic resource needs; however, China's monopolistic practices in Africa mean that future access to these materials is no longer guaranteed and may be in serious jeopardy. Burgess, "Sustainability of Strategic Minerals in Southern Africa and Potential Conflicts and Partnerships," Air War College research paper, 4, <http://www.usafa.edu/df/inss/Research%20Papers/2010/Report%20Burgess%20Southern%20Africa%20Strategic%20Minerals.pdf>.

58. Note, for example, Tunisia's recent ouster of President Ben Ali and the recent antigovernment rebellion in Egypt.

59. Steven R. David, *Catastrophic Consequences: Civil Wars and American Interests* (Baltimore: Johns Hopkins University Press, 2008), describes how such regimes provide fertile ground for civil wars.

60. Burgess, "Sustainability of Strategic Minerals," describes the US need for "defense critical materials," primarily available only from Africa, which the United States must have to maintain its national security. These include platinum, cobalt, chromium, and manganese, each of which is vital to US defense and civilian industrial sectors and found primarily in African states and in Russia. The lack of these materials would represent a critical loss in US ability to manufacture weapons and other defense systems and thus conceivably weaken US national security.

61. *The National Security Strategy of the United States of America* (Washington: The White House, May 2010), 6.

62. Examples include the F-35 joint strike fighter, *Virginia*-class submarines, and ballistic missile defense programs.

63. See, for example, Andrew F. Krepinevich Jr., "The Pentagon's Wasting Assets: The Eroding Foundations of American Power," *Foreign Affairs* 88, no. 4 (July/August 2009), 28–33. Such "wasting assets" have implications for future US foreign policy as well, as outlined in Donna M. Oglesby, "Statecraft at the Crossroads: A New Diplomacy," *SAIS Review* 29, no. 2 (Summer/Fall 2009): 94.

South Asia

Danger Ahead?

Charles E. Costanzo

SINCE THEIR CREATION in 1947 following the end of British rule in South Asia, India and Pakistan have fought three major wars and spent 64 years in nearly constant conflict, primarily over the future of Kashmir, itself divided between a Pakistan-controlled area in the northwest known as Azad Kashmir and an India-controlled area known as the State of Jammu and Kashmir in the central and southeastern part of the region. Over the years, numerous border crises have occurred that could have erupted into major wars, but despite deep distrust and military buildups in both countries, direct large-scale warfare has been averted. However, the potential for a future crisis to lead to another all-out war, possibly with nuclear weapons, cannot be dismissed on the basis of the current Indo-Pakistani standoff.

In the years after India and Pakistan conducted nuclear weapon tests in 1998, a debate ensued about whether these devices stabilize or destabilize the political-military situation on the subcontinent.¹ Although both sides in this debate offer compelling arguments, no consensus has emerged. Two new developments—one doctrinal, the other technological—could increase the possibility of nuclear exchanges in a future crisis between India and Pakistan. Much about what we “know” about state behavior during militarized disputes, particularly involving nuclear weapons, is grounded in rational choice theory and derived in large part from the US-Soviet experience during the Cold War. During that period, analysts and decision makers believed that both sides exhibited restraint during crises because they recognized the potentially severe costs of military action. Some believe that, like the United States and Soviet Union, other nuclear-armed countries will also exhibit restraint during militarized crises.

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However, rational choice may not provide a complete picture of state behavior in cases of militarized disputes. Following a discussion of events and developments leading to the current Indo-Pakistani military balance, I apply prospect theory as an alternative to rational choice to argue that India's new Cold Start military doctrine and Pakistan's new nuclear-capable short-range ballistic missile (SRBM), the Hatf-9, could tip the danger of nuclear war toward the pessimistic view of nuclear weapons in South Asia.²

Nuclear Tests and the Post-Test Balance

On 11 May 1998, India conducted three underground nuclear explosions: a sub-kiloton (KT) fission device, a fission device with a reported yield of about 12 KT, and a thermonuclear device with a yield of about 43 KT. Two days later, it conducted two more tests, both in the sub-KT range. Operation Shakti was only the second time since the 1974 "peaceful nuclear explosion" that India explosively tested its nuclear-weapon capability. Despite international pressure, Pakistan responded by conducting its own nuclear tests on 28 and 30 May. Five devices were exploded on 28 May: four in the sub-kiloton range and a "big bomb" with a yield between 30 and 35 KT. A sixth test on 30 May was a fission device with a yield of about 12 KT. Pakistan's tests were also underground detonations at the Chagai Hills test facility.³

Since 1998, the possession of nuclear weapons and nuclear-capable delivery systems by India and Pakistan has created a condition of mutual deterrence at the level of general war on the subcontinent. Counterforce strikes by either side are out of the question since neither country possesses high confidence that such attacks would be effective enough to disarm its opponent and preclude a devastating retaliatory response.⁴ Fundamentally, both countries are restricted to use their nuclear forces to threaten countervalue targets such as cities and other nonmilitary assets; thus, neither side has risked escalation during a militarized crisis due to the potential for catastrophic civilian casualties and massive infrastructure losses.

In the years leading to the nuclear tests, Pakistan limited its involvement in the Kashmir dispute to supporting armed militants opposing Indian rule in the region.⁵ However, after the 1998 nuclear tests and the acquisition of an overt nuclear capability, Pakistan took more aggressive, albeit indirect, actions against India. Both the Pakistani incursion at Kargil on the Indian side of the Line of Control (LOC) in 1999 and Islamabad's

complicity in the 2001–02 terrorist attacks against India signaled a newfound boldness to pursue its political-military objectives without provoking a large-scale Indian conventional response. Paul Kapur notes that the “Pakistanis believed that their new, overt nuclear status would enable them to deter the Indians even more effectively than their *de facto* nuclear capability had previously done.”⁶

Stability-Instability Paradox and Two Subcontinent Crises

Robert Jervis observed presciently over a decade before India’s and Pakistan’s nuclear tests that “to the extent that the military balance is stable at the level of all-out nuclear war, it will become less stable at lower levels of violence.”⁷ This view of the stability-instability paradox ostensibly played out during the Kargil crisis and the crises precipitated by Pakistan-backed terrorist attacks against India in 2001 and 2002.⁸ In each case, India demonstrated remarkable restraint. While India’s army deployment pattern constrained its reactions to some extent, its leaders were nonetheless hesitant to initiate moves that could result in escalation.⁹ Although world opinion, a desire to be perceived as a responsible actor, or perhaps other reasons may account for Indian restraint, “if it were the case that a large-scale conventional conflict was very unlikely to escalate to the nuclear level, Indian leaders would be less likely to be deterred from launching a major conventional response to end Pakistani aggression,”¹⁰ Kapur concludes. Yet in 1999 and again in 2001–02 India was indeed deterred from large-scale conventional reprisals against Pakistan, fearing nuclear escalation.

The Kargil crisis began in March 1999 when Pakistani forces infiltrated and occupied five sectors in the region previously vacated by Indian forces for the winter.¹¹ The Pakistanis used various ruses to attempt to convince the international community that the fighters were militants, not Pakistani military, but “an operation of this magnitude could only be planned at the highest level in Pakistan with complete approval of the government.”¹² Initial operations by the Indian army to dislodge the intruders involved fighting under difficult high-altitude terrain and weather conditions, with India incurring significant casualties.¹³ The Indian army and air force launched major offensive operations in late May, although the air force was ordered by India’s civilian leaders not to cross the LOC.¹⁴ Additionally, India mobilized its army in other parts of its territory, including

along the international border with Pakistan, and prepared its navy for offensive and blockading operations. A major breakthrough finally occurred in late June, and the Indian army began clearing Pakistani forces. Facing a declining military situation and pressure from the United States, Pakistan began withdrawing its forces in mid July. In late July, India announced that all intruders had vacated occupied territory and the crisis ended. Post-conflict evidence recovered by India revealed that Pakistani soldiers from the 2nd, 3rd, 4th, 5th, and 6th Battalions of the Northern Light Infantry, augmented by Afghan veterans and Islamic militants, had conducted the Kargil intrusion.¹⁵

The Kargil incursion marked a significant move; Pakistan had clearly decided to pursue more-ambitious plans in the Kashmir region. Had Pakistan retained control of Kargil, this position would have enabled it to interdict the Srinagar-Leh Road and interfere with India's movement of supplies along this route; to block the Zojila Pass and threaten India's hold in the Kashmir Valley; to control a part of the Himalayan Range to facilitate insurgent movement into the Kashmir Valley and the Doda District in the State of Jammu and Kashmir; and to "outflank the Indian army deployed on the LOC in northwestern Kashmir and the Siachen glacier through the Shyok valley."¹⁶ In spite of the 1972 Simla Agreement, signed by India's then-prime minister Indira Gandhi and Pakistan's former president Zulfikar Ali Bhutto, that the LOC "shall be respected by both sides" and that "both sides further undertake to refrain from the threat of the use of force in violation of this line," Pakistan took a highly provocative step by crossing the LOC and occupying Indian territory.¹⁷

Although the deployment pattern and configuration of the Indian army hindered its quick mobilization and movement to confront limited aggression, Pakistan's nuclear-weapon capability cannot be excluded from the decision calculus of Indian leaders.¹⁸ Sumit Ganguly has argued that "the principal source of Indian restraint was Pakistan's overt possession of a nuclear arsenal. Indian policymakers, cognizant of this new reality, were compelled to exercise suitable restraint for fear of escalation to the nuclear level."¹⁹ Thus, beyond constraints on Indian conventional forces, Pakistan's nuclear weapons undoubtedly induced caution in New Delhi and introduced a new variable into the Indo-Pakistani political-military relationship. As if to acknowledge the importance of this new variable, one consequence of the Kargil crisis was that both countries "ramped up their production of nuclear weapons and missile delivery systems."²⁰

Indo-Pakistani tensions rose further on 1 October 2001 when insurgents killed 38 people in an attack on the Jammu and Kashmir State Assembly in Srinagar on the Indian side of the LOC.²¹ Jaish-e-Mohammed, a Pakistan-backed group listed by the US State Department as a foreign terrorist organization (FTO), claimed responsibility for the attack.²² India protested and demanded Islamabad ban the group. Then, on 13 December 2001, terrorists struck again, this time at the Indian parliament in New Delhi, killing several guards. Evidence gathered by India implicated Jaish-e-Mohammed and Lashkar-e-Toiba, also a Pakistan-backed militant group on the FTO list. India protested again, demanding Pakistan outlaw both groups, extradite 20 alleged terrorists, and halt all infiltration by militants into Indian territory.²³ Additionally, several days after the attack, India mobilized its military forces—Operation Parakram—moving three strike corps closer to Pakistan, activating air force units, and shifting its Eastern Fleet to join the Western Fleet to blockade Pakistan.²⁴ Pakistan replied by moving large military forces to both the LOC and the international border. President Musharraf defused the situation on 12 January when he stated publicly that “no organization will be allowed to indulge in terrorism in the name of Kashmir” and “anyone found [to be] involved in any terrorist act would be dealt with sternly.”²⁵ Later in the speech he banned Jaish-e-Mohammed and Lashkar-e-Toiba. Despite popular anger over the attack and India’s initial bravado, New Delhi trimmed its forces’ operational tempo, and India once again refrained from attacking Pakistan.

Crisis erupted once more on 14 May 2002 when terrorists attacked the Indian army camp at Kaluchak and murdered family members of assigned military personnel.²⁶ In response, India planned to use its three strike corps to draw Pakistan’s two strike corps into the Thar Desert and inflict heavy losses on them. However, before India could act, the United States intervened and persuaded President Musharraf to “permanently end infiltration across the Line of Control into the Indian State of Jammu and Kashmir,” which Indian foreign minister Jaswant Singh called a “step in the right direction.”²⁷ India began withdrawing its forces from the LOC and the international border several months later.

Were Pakistan’s nuclear weapons the key reason why India hesitated to respond more forcefully against bold and repeated attacks? Ganguly contends that “Pakistan’s acquisition of a nuclear weapons capability may well have emboldened its leadership, secure in the belief that India had no good options to respond.”²⁸ He adds that India “has been grappling

with an effort to forge a new military doctrine and strategy to enable it to respond to Pakistani needling while containing the possibilities of conflict escalation, especially to the nuclear level.”²⁹ The next section evaluates the proposition that India was constrained from a more forceful response to Pakistani provocations because its conventional forces were not configured for such a response and it feared triggering escalation to the strategic nuclear level. India’s attempt to revise its military doctrine and to adopt a new conventional force configuration is an effort to change this situation to respond to Pakistani “needling” while precluding the risk of nuclear escalation.

The Sundarji Doctrine and Beyond

The eponymous Sundarji doctrine was developed during a period of military modernization in the mid 1980s under then–chief of army staff Gen Krishnaswamy Sundarji. It incorporated modern tanks, armored fighting vehicles, artillery, missile and air defense systems, and India’s first attack helicopters.³⁰ The doctrine was organized around seven defensive holding corps deployed near the international border with Pakistan to check the advance of enemy forces.³¹ If Pakistan attacked, three offensive strike corps deployed in central India well away from the border would counterattack once the holding corps stopped Pakistani forces; then the strike corps would penetrate deep into Pakistan to destroy its two strike corps.³² Because it was designed to confront a full-scale Pakistani attack, the Sundarji doctrine was ill suited to confront limited, indirect threats.³³ The long mobilization time, 10–21 days, gave Pakistan enough time to prepare a military response and for American crisis intervention to preclude escalation.³⁴ In short, India’s military doctrine proved “too crude and inflexible a tool to respond to terrorist attacks and other indirect challenges.” Moreover, “mobilizing the entire military was not an appropriate policy to pursue limited aims. A new approach was needed.”³⁵

India announced in early 2004 that it was developing a new military doctrine that stressed “smaller, mobile and integrated units . . . moving forward quickly.”³⁶ Under the new doctrine, known as Cold Start, India would use as many as eight integrated battle groups (IBG), consisting of armor, mechanized infantry, and artillery integrated with close air support that could be mobilized from a standing start in three to four days from positions near the border with Pakistan to drive only 20–80

kilometers into Pakistani territory.³⁷ The objectives of Cold Start are to attrite Pakistani forces, to use seized territory for postconflict bargaining, and to preclude nuclear escalation by limiting the depth of the Indian advance.³⁸ Although Indian military planners undoubtedly believe the limited objectives sought under Cold Start when it is fully implemented would confine the violence, the key—and potentially unknown—variable is Pakistan's reaction; that is, could India undertake conventional operations envisioned under Cold Start without provoking a nuclear response?³⁹

Unlike India, which has promulgated, albeit unofficially, its nuclear doctrine, Pakistan has articulated no such doctrine.⁴⁰ In fact, “public discussion on nuclear strategy and, more generally, on all things nuclear is scarce.”⁴¹ What little is known about Pakistan's nuclear “redlines” was gleaned during an interview several years ago with Lt Gen Khalid Kidwai, director general of the Strategic Plans Division, the country's dedicated nuclear organization. During the interview, he articulated the circumstances of deterrence failure when Pakistan would use nuclear weapons: “India attacks Pakistan and conquers a large part of its territory (space threshold), India destroys a large part either of its land or air forces (military threshold), India proceeds to the economic strangling of Pakistan (economic strangling), [and/or] India pushes Pakistan into political destabilization or creates a large-scale internal subversion in Pakistan (domestic destabilization).”⁴² When the interviewers observed that the conditions outlined by Kidwai were “too broad and too vaguely defined,” he replied that the “possibility [of nuclear war] has been discarded on the basis of the fact that rational decision making will keep both countries away from the nuclear brink.”⁴³ However, as Walter Ladwig has noted, “As India enhances its ability to achieve a quick military decision against its neighbor in a future conflict, Pakistan will come under increasing pressure to rely on its nuclear arsenal for self-defense.”⁴⁴

Pakistan acted recently to blunt the Cold Start doctrine in a way that suggests it may be prepared to use nuclear weapons early in a conflict with India.⁴⁵ On 19 April 2011, Pakistan conducted the first test of the newly developed mobile Hatf-9 SRBM capable of carrying a nuclear warhead and with a reported range of 60 kilometers.⁴⁶ Regarding this new capability, a Pakistani defense analyst stated that “India has always felt that Pakistan had a loophole in terms of lacking short-range battlefield nuclear weapons, which it could exploit on the assumption that it made little sense for Pakistan to respond to such conventional attacks with strategic nuclear

weapons. With [Hatf-9], Pakistan has plugged that loophole. Indian dreams of a limited war against Pakistan . . . have been laid to rest.”⁴⁷ The Hatf-9 adds another component to an Indo-Pakistani political-military relationship increasingly characterized by a search for an escalation process that each side believes it can control.

A Dangerous New Era

Rational decision making occurs when a person evaluates the desirability of an outcome from a particular action against his or her current position and either takes action to change (i.e., improve) that position or desists from acting if the potential outcome is too costly. In deterrence relationships, at least as traditionally understood, actors have two choices, each with an outcome: mutual cooperation to sustain the status quo or military aggression to change the status quo to improve one’s position. If an actor is deterred from aggressive behavior because it believes an opponent possesses both the capability to impose a heavy cost for aggression and the will to execute the threat, then deterrence is successful. The potential aggressor is said to have made a rational choice not to act because the perceived loss due to an action outweighs conceivable gain.

In their classic study on decision making, Daniel Kahneman and Amos Tversky demonstrated phenomena that deviate from rational choice, notably that people do not always act rationally.⁴⁸ One of Kahneman and Tversky’s principal findings about decision making under an alternative construct they named “prospect theory” is that people are risk averse in the domain of gain and risk acceptant in the domain of loss; that is, people are more inclined to take risks to rectify losses than to make gains because “losses hurt more than a gain feels good.”⁴⁹ This finding stands in stark contrast to rational decision making, which makes the opposite prediction. Accordingly, prospect theory more readily explains than rational choice why decision makers in a loss domain often accept risks that otherwise are unacceptable.⁵⁰ Jeffrey Berejikian adds,

In nuclear deterrence, it may be that the potential costs of aggression are so large that they do in fact overwhelm the framing effect.⁵¹ This raises an important distinction between total versus limited nuclear war as deterrents. The notion of a limited nuclear war suggests that the costs of conflict are not beyond consideration. Therefore, it may be that [prospect theory] is appropriate for analyzing limited war deterrents while rational choice is a better guide to understanding total war threats.⁵²

On the basis of this argument, the Indo-Pakistani nuclear deterrence relationship since 1998 has been stable at the total-war level because both countries' decision makers recognize that the cost of large-scale aggression is so great that it outweighs any conceivable gain. As rational choice predicts, during the Kargil and 2001–02 crises, leaders on both sides ostensibly acknowledged the limits on using conventional force and stepped back from the brink before those limits were crossed. For its part, Pakistan's incursion at Kargil, while highly provocative, was confined to a single area, and the attacks against the Srinagar and New Delhi legislatures and the Kaluchak army camp, while egregious, were isolated events using proxy forces. India, on the other hand, responded to those provocations cautiously by taking steps to demonstrate its resolve but without taking actions that could escalate the violence. Undoubtedly the long shadow cast by the threat of nuclear war induced circumspection on both parties, while India's limited ability to calibrate responses for indirect threats tempered its reaction. However, the margin of safety against escalation may be shrinking for reasons best explained by prospect theory.

In a future military confrontation, Pakistan could decide that the smaller, more mobile units envisioned under Cold Start would be difficult to attack effectively with its available conventional munitions; thus, its leaders may perceive no alternative to nuclear strikes on the battlefield. In this scenario, Pakistan's decision to use nuclear weapons would depend on how it frames its territorial and military losses, as well as internal political and economic conditions, following an Indian attack. Since Islamabad has not provided insight into the specific meaning of the redlines outlined by General Kidwai, Pakistan could decide to use battlefield nuclear weapons to destroy India's IBGs to rectify a territorial loss, for example. Ominously, because Pakistan does not have a nuclear "no first use" policy, it is possible that it would use nuclear weapons early in a conflict. Although Indian losses would be confined to the battlefield, perhaps even on Pakistani territory, New Delhi could frame the loss of its conventional offensive punch in a way suggested by prospect theory and engage in risky escalatory behavior, perhaps to the nuclear level, to rectify destruction of its IBGs. Thus, like Pakistan, India too could be risk acceptant in a loss domain.

South Asia—Danger Ahead?

According to one view, an advantage of Cold Start over the Sundarji doctrine is that its limited objectives deny "Pakistan the 'regime survival' justi-

fication for employing nuclear weapons in response to India's conventional attack."⁵³ However, if India uses the Cold Start doctrine it could cross one or more of Pakistan's redlines, and even though it does not threaten regime survival, Pakistan could respond in a way predicted by prospect theory. For example, an Indian drive 20–80 km into Pakistan could be framed by authorities in Islamabad as a loss worthy of an escalation risk because it violates the "space threshold." Since Pakistan has not defined what constitutes the conquest of "a large part of its territory," India would not know it had crossed this threshold until Pakistan reacted. The same problem applies to Pakistan's other ill-defined redlines. Similarly, losses incurred by India unknowingly crossing one or more redlines could induce its leaders to accept a gamble they would otherwise deem unacceptable, namely escalation, to deter further Pakistani actions. However, deterring additional Pakistani moves could be contingent upon how Islamabad defines its losses.

The "firebreak" that has existed heretofore between strictly conventional war and devastating countervalue nuclear attacks is dissipating as each side tries to outmaneuver the other at the operational level of war. The more predictable deterrent relationship explained by rational choice is yielding to a political-military balance characterized by far greater ambiguity and potential risk-taking behavior that is explained by prospect theory. Cold Start and the Hatf-9 are moving India and Pakistan from mutual deterrence built around a clear firebreak between conventional and full-scale nuclear war to a search for escalation dominance by each side. India believes the limited objectives sought under Cold Start will not precipitate a Pakistani nuclear response, while Pakistan believes the use of the Hatf-9 would not provoke a full-scale conventional war with escalatory potential or even nuclear retaliation.⁵⁴ The mutual deterrence that has characterized the Indo-Pakistani balance since 1998 is giving way to a potentially dangerous relationship wherein a future conflict may be shaped less by leaders' rational choices in the tempest of mounting losses than by both sides framing their losses in a way that causes them to accept risks they otherwise would reject, and with potentially catastrophic consequences.

The ramifications for the United States and other countries are clear. Given the developments discussed above, the potential exists for a future militarized crisis on the subcontinent to escalate rapidly to the nuclear level, including devastating countervalue strikes by both countries that would result in a humanitarian disaster with millions killed and millions more injured.⁵⁵ In addition to massive infrastructure losses that could

doom the survivors, radioactive fallout across the region could injure or kill people outside India and Pakistan and severely hamper external efforts to deliver relief. Moreover, it is possible that the severe effects of nuclear war on the subcontinent would not remain confined to the region. A study by the National Academy of Sciences in the United States predicted that a nuclear war fought with 100 Hiroshima-size weapons exploded over cities in the northern subtropics “might pose an unprecedented hazard to the biosphere worldwide” affecting both human health and agricultural production, perhaps for years.⁵⁶ It is estimated currently that India and Pakistan possess between 130 and 170 operational strategic nuclear warheads.⁵⁷ In light of the regional and possibly global consequences of nuclear war between India and Pakistan, the United States should engage now to forestall a potential catastrophe rather than wait to mediate a militarized dispute that could escalate too rapidly for crisis intervention. ■■■

Notes

The author gratefully acknowledges comments on earlier drafts from Kathleen Mahoney-Norris and Derrick Frazier, both at the Air Command and Staff College.

1. See, for example, Vipin Narang, “Posturing for Peace? Pakistan’s Nuclear Postures and South Asian Stability,” *International Security* 34, no. 3 (Winter 2009/10): 38–78; Dinshaw Mistry, “Complexity of Deterrence among New Nuclear States: The India-Pakistan Case,” in *Complex Deterrence: Strategy in the Global Age*, ed. T. V. Paul, Patrick M. Morgan, and James J. Wirtz (Chicago: University of Chicago Press, 2009), 183–203; Mistry, “Tempering Optimism about Nuclear Deterrence in South Asia,” *Security Studies* 18, no. 1 (January–March 2009): 148–82; Sumit Ganguly, “War, Nuclear Weapons, and Crisis Stability in South Asia,” *Security Studies* 17, no. 1 (January–March 2008): 164–84; Bruce Riedel, “South Asia’s Nuclear Debate,” *Survival* 50, no. 2 (April–May 2008): 107–26; Ganguly, “Nuclear Stability in South Asia,” *International Security* 33, no. 2 (Fall 2008): 45–70; S. Paul Kapur, “Ten Years of Instability in a Nuclear South Asia,” *International Security* 33, no. 2 (Fall 2008): 71–94; Michael Quinlan, “India-Pakistan Deterrence Revisited,” *Survival* 47, no. 3 (Autumn 2005): 103–16; Waheguru Pal Singh Sidhu, “Regional Dynamics and Deterrence: South Asia (1),” *Contemporary Security Policy* 25, no. 1 (April 2004): 166–78; Naeem Ahmad Salik, “Regional Dynamics and Deterrence: South Asia (2),” *ibid.*, 179–201; and Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W. W. Norton, 2003), 88–124.

2. I apply prospect theory to this situation because, as Tversky and Kahneman point out, it provides a richer texture than rational choice regarding the human psychology of decision making. See Amos Tversky and Daniel Kahneman, “The Framing of Decisions and the Psychology of Choice,” *Science* 211 (30 January 1981): 453–58. Additionally, the rich body of work on escalation theory could be applied to this case to further assess the potential of nuclear war between India and Pakistan during future militarized crises. I thank Gary Schaub of the Air War College for this suggestion.

3. Robert T. Batcher, "The Consequences of an Indo-Pakistani Nuclear War," *International Studies Review* 6, no. 4 (December 2004): 140n10. Also, excellent discussions about the 1998 tests are available in Sumit Ganguly, "India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program," *International Security* 23, no. 4 (Spring 1999): 148–77; and Samina Ahmed, "Pakistan's Nuclear Weapons Program: Turning Points and Nuclear Choices," *ibid.*, 178–204.
4. Stephen Cohen and Sunil Dasgupta quote a senior Indian official who averred that India cannot risk attacking Pakistan because it does not know the location of Pakistani military assets. Presumably Pakistan encounters a similar limitation that also compels restraint. See Cohen and Dasgupta, *Arming without Aiming: India's Military Modernization* (Washington: Brookings Institution Press, 2010), 63.
5. S. Paul Kapur, "India and Pakistan's Unstable Peace: Why Nuclear South Asia Is Not Like Cold War Europe," *International Security* 30, no. 2 (Fall 2005): 144.
6. *Ibid.*
7. Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca, NY: Cornell University Press, 1984), 31.
8. The basic concept for the stability-instability paradox is Glenn H. Snyder, "The Balance of Power and the Balance of Terror," in *Balance of Power*, ed. Paul Seabury (San Francisco: Chandler Publishing Co., 1965), 185–201. Kapur, "India and Pakistan's Unstable Peace," 131, identifies two interpretations of the stability-instability paradox in the literature: one interpretation wherein "the possibility of lower-level conflict spiraling to the nuclear threshold facilitates regional violence" and an interpretation wherein "the paradox allows lower-level violence in South Asia through a lack of escalatory potential."
9. Kapur, "India and Pakistan's Unstable Peace," 138.
10. *Ibid.*, 141.
11. A superb discussion of the Kargil conflict, its causes and consequences and lessons learned, is available in Peter R. Lavoy, ed., *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict* (Cambridge, UK: Cambridge University Press, 2009). The brief discussion of the conflict in this paragraph draws on Peter Lavoy's essay in this book.
12. Maj Gen Afsir Karim, retired, "Kargil—The Pakistan Gamble," in *Kargil Blunder: Pakistan's Plight, India's Victory*, ed. Maj Gen Y. Bahl, retired (New Delhi: Manas Publications, 2000), 121.
13. See, for example, John H. Gill, "Military Operations in the Kargil Conflict," in *Asymmetric Warfare in South Asia*, 121–22.
14. P. R. Chari, Pervaiz Iqbal Cheema, and Stephen P. Cohen, *Four Crises and a Peace Process: American Engagement in South Asia* (Washington: Brookings Institution Press, 2007), 122.
15. Karim, "Pakistan Gamble," 123.
16. Afsir Karim, "Pakistan's Aggression in Kashmir," in *Kargil Blunder*, 37.
17. Simla Agreement, 2 July 1972, <http://www.jammu-kashmir.com/documents/simla.html>.
18. Kapur, "India and Pakistan's Unstable Peace," 138.
19. Ganguly, "Nuclear Stability in South Asia," 59.
20. Peter R. Lavoy, "Introduction: The Importance of the Kargil Conflict," in *Asymmetric Warfare in South Asia*, 22.
21. Chari et al., *Four Crises and a Peace Process*, 150.
22. Ganguly, "Nuclear Stability in South Asia," 59.
23. *Ibid.*, 61.
24. Chari et al., *Four Crises and a Peace Process*, 153.

25. President Pervez Musharaf's Address to the Nation, 12 January 2002, <http://www.satp.org/satporgtp/countries/pakistan/document/papers/2002Jan12.htm>.
26. Chari et al., *Four Crises and a Peace Process*, 154; and S. Paul Kapur, "Ten Years of Instability in a Nuclear South Asia," *International Security* 33, no. 2 (Fall 2008): 81.
27. Celia W. Dugger, with Thom Shanker, "India Sees Hope as Pakistan Halts Kashmir Militants," *New York Times*, 9 June 2002, sec. 1.
28. Ganguly, "Nuclear Stability in South Asia," 65.
29. Ibid.
30. Cohen and Dasgupta, *Arming without Aiming*, 55.
31. Walter C. Ladwig III, "A Cold Start for Hot Wars," *International Security* 32, no. 3 (Winter 2007/08): 159–60.
32. Ibid., 160.
33. Ibid., 162.
34. Vipin Narang, "Posturing for Peace: Pakistan's Nuclear Postures and South Asian Stability," *International Security* 34, no. 3 (Winter 2009/10): 74.
35. Ladwig, "Cold Start for Hot Wars," 162–63.
36. Cohen and Dasgupta, *Arming without Aiming*, 60.
37. See *ibid.*; Narang, "Posturing for Peace," 74; and Kapur, "India and Pakistan's Unstable Peace," 89.
38. Kapur, "India and Pakistan's Unstable Peace," 89.
39. I use the term *fully implemented* because the current operational status of Cold Start is not clear. Although Cohen and Dasgupta state (p. 61) that "there is evidence that offensive units are now forward deployed, and that supporting infrastructure for the Integrated Battle Groups is being built," India's army chief stated as recently as December 2010 that India does not "have anything called 'Cold Start.'" Quoted in Francisco Aguilar, Randy Bell, Natalie Black, Sayce Falk, Sasha Rogers, and Aki Peritz, *An Introduction to Pakistan's Military* (Boston: Belfer Center for Science and International Affairs, July 2011), 11. Since Cold Start may not be fully implemented, this could account, at least in part, for India's military restraint following terrorist attacks by Lashkar-e-Toiba in 2008 against targets in Mumbai that left 160 people dead. Or, India's civilian leaders may yet be reluctant to use conventional military force against Pakistan for indirect attacks fearing escalation.
40. See the *Draft Report of the National Security Advisory Board on Indian Nuclear Doctrine*, 17 August 1999, <http://www.pugwash.org/reports/nw/nw7a.htm>. An update of this doctrine was provided in a press release on 4 January 2003 by the Cabinet Committee on Security Reviews, <http://girder.docuweb.ca/India/news/pr/pr-0301.html>.
41. Paolo Cotta-Ramusino and Maurizio Martinelli, *Nuclear Safety, Nuclear Stability and Nuclear Strategy in Pakistan* (Como, Italy: Landau Network, 21 January 2002), 6.
42. Ibid., 5. Scant information is available from Pakistan about its nuclear doctrine. An article in *Dawn* on 15 July 2011 referred to a handout provided after a meeting of the National Command Authority (NCA), stating only that Pakistan would "continue to pursue its policy of credible minimum deterrence" and that the "NCA expressed satisfaction at the security and safety of Pakistan's strategic programmes and facilities, and operational readiness of weapons." See "N-deterrence to be Pursued," <http://www.dawn.com/2011/07/15/n-deterrence-to-be-pursued.html>.
43. Cotta-Ramusino and Martinelli, *Nuclear Safety*, 6.
44. Ladwig, "Cold Start for Hot Wars," 169.

45. Some anticipated this move long ago. See, for example, Ladwig, "Cold Start for Hot Wars," 169; and Air Commodore Tariq M. Ashraf, Pakistan Air Force, "Doctrinal Reawakening of the Indian Armed Forces," *Military Review* 84, no. 6 (November–December 2004): 58.

46. "Pak Test Fires Hatf-9 N-capable Missile," *Indian Express*, 20 April 2011, <http://www.indianexpress.com/story-print/778505/>.

47. "Pakistan Tests Short-Range Ballistic Missile," *Hindu*, 19 April 2011, <http://www.thehindu.com/news/international/article1709352.ece?css=print>.

48. Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, no. 2 (March 1979): 263–92.

49. Jeffrey D. Berekjian, "A Cognitive Theory of Deterrence," *Journal of Peace Research* 39, no. 2 (March 2002): 170.

50. Kahneman and Tversky, "Prospect Theory," 287.

51. The framing effect is illustrated in data obtained from participants in experiments related to risk acceptance and risk avoidance. Tversky and Kahneman found that a framing effect shaped respondents' choices in ways that are contrary to rational choice theory. They routinely found that respondents' choices correlated strongly with how they framed problems. For example, in experiments conducted at Stanford University and the University of British Columbia, some students were given the following scenario:

Imagine the United States is preparing to respond to an Asian disease expected to kill 600 people. Two alternative programs are available to respond to the disease:

(1) If Program A is adopted, 200 people will be saved, or

(2) If Program B is adopted there is a 1/3 probability that 600 people will be saved.

Although the outcome of either program is identical, 72 percent of the respondents chose Program A because they framed their choice in terms of the certain prospect of saving 200 people versus the more "risky" prospect of a 1/3 chance of saving 600. This framing effect illustrates risk aversion in a gain domain.

Another group of respondents was given the same scenario, but with a different framing of choices:

(3) If Program C is adopted, 400 people will die, or

(4) If Program D is adopted, there is a 1/3 probability that nobody will die.

Although the outcome of either program is identical, 78 percent of the respondents chose Program D because they framed their choice in terms of 400 certain deaths being less acceptable than a 2/3 chance that 600 will die.

This framing effect illustrates risk acceptance in a loss domain. The only difference between the two scenarios is that the first is framed by the number of lives saved and the second by the number of lives lost.

See Tversky and Kahneman, "The Framing of Decisions," 453–58.

52. Berekjian, "Cognitive Theory of Deterrence," 174n13.

53. Ladwig, "Cold Start for Hot Wars," 166.

54. Ibid.; and Ruhee Neog, *Pakistan's Nuclear Posturing: Is Hatf-9 a Response to Cold Start?* (New Delhi: Institute of Peace and Conflict Studies, 20 June 2011), http://www.ipcs.org/print_article-details.php?recNo=3439.

55. The results of nuclear war on the subcontinent would be devastating. The Natural Resources Defense Council (NRDC) developed two scenarios to illustrate the consequences of

nuclear war in South Asia. In the first scenario, 10 Hiroshima-size explosions occur over five Indian and five Pakistani cities with no fallout. In this scenario, nearly two million people in India would be killed, and slightly more than one million would die in Pakistan. Additionally, nearly three million Indians would receive varying levels of injuries, while nearly two million Pakistanis would be injured. In the second scenario, 12 25-KT weapons are detonated at ground level in Indian cities, and the same number and yield weapons are detonated at ground level in Pakistani cities. Since the fireballs from these weapons would touch the ground, large amounts of terrestrial material would be vaporized, irradiated, and carried aloft, ultimately returning to Earth as radioactive fallout. The NRDC study estimated that in addition to millions killed directly in these attacks, tens of millions would die or be sickened due to radiation poisoning. Robert Batcher assumes 50-KT weapons “will be attainable in the near term,” and “these weapons will be reserved for population targets.” See Batcher, “Consequences of an Indo-Pakistani Nuclear War,” 140. The NRDC scenarios were developed in 2002, so population growth and density in the target areas would undoubtedly result in higher deaths and injuries today. See NRDC, “The Consequences of Nuclear Conflict between India and Pakistan,” 4 May 2002, <http://www.nrdc.org/nuclear/southasia.asp>.

56. See Michael J. Mills, Owen B. Toon, Richard P. Turco, Douglas E. Kinnison, and Rolando R. Garcia, “Massive Global Ozone Loss Predicted Following Regional Nuclear Conflict,” *Proceedings of the National Academy of Sciences* 105, no. 14 (8 April 2008): 5307–12.

57. International Institute for Strategic Studies, *The Military Balance: 2011* (London: Routledge, March 2011), 469.

The United States in Multilateral East Asia

Dealing with the Rise of China

Chika Yamamoto

THE RISE OF China as an economic and military actor has rapidly gained attention from the United States and elsewhere in the world. Whether China will challenge US hegemony and leadership has been at the forefront of international political debate, and many scholars and researchers have attempted to answer the question from various aspects. However, there is no easy answer. Not only does a deepening economic relationship between China and the United States pose difficulty for Washington to clearly determine its view of China as a rival or threat, but to a lesser extent there is also uncertainty in the emergence of China itself. Debates continue over whether China's development in economic and security fields will be sustainable. Former US deputy secretary of state Richard Armitage observed in 2009, "Until China can be more transparent, we will continue to have questions."¹

Yet a deeper concern has remained—Is Washington fundamentally capable of dealing with China? One must wonder if US leadership is too inflexible to grasp the dynamics and complexity surrounding the rise of China. Francis Fukuyama points out that while Washington may have been attentive, such behavior may arise from its inability to adjust its view to comprehend the emergence of China. He doubts there is a "well-thought-out, long-term strategy."² Washington simply may not know how to respond to China. Marc Beeson posits, "The fact that the United States finds it too difficult to react to China's rise with any consistency tells us much about the constraints on and counterproductive nature of American leadership in the contemporary era."³ He raises a similar question to Fukuyama—whether or not Washington is capable of understanding what exactly the rise of China is and how it may impact US policy. These questions

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are worth considering—not to directly suggest a practical policy but to provide greater understanding and awareness of latent issues of US leadership in dealing with China.

The central argument compares the contemporary, power-oriented leadership role of Washington to Beijing's multilateral approach toward East Asia and maintains that the difficulty of Washington to draw a practical policy toward China is attributable to a conceptual difference in thinking about how leadership is obtained and exercised.⁴ Beijing's multilateral approach toward East Asia demonstrates the profound impact of China, which Washington may not have been able to fully capture. This implicates Washington's insufficient attention to how Beijing exercises its leadership role in a relative and indirect manner, while tending to give greater diligence on power projection at a bilateral level.

US Power Politics and Unilateralism

According to previous works, Washington views the emergence of China as a hegemonic rivalry between the United States and China. It primarily has encountered policymaking toward China as if the rising China urgently and solely relates to a competition for *who will lead the world*. The principal analysis compares power capabilities—both tangible and intangible, such as military capability, economic size, and ideational powers to influence others—which are the main sources determining a nation's strategic choices. Right or wrong, much of the current literature on China has supported such an analytical framework.⁵ One way to think of this trend is as a long-existing influence of realist thought on the discipline of international relations. As one of the mainstream ideas of Western scholarship, realism assumes that the primary purpose of states is to strive for power and to survive in an anarchic world. Neorealists, in particular, draw attention to the idea of balance of power. States are likely to measure power capabilities to secure their interests and maintain influence so they can pursue their interests.⁶ John Mearsheimer explains that hegemony is an ultimate form of power balancing. He argues that “states recognize that the best way to survive in such a system is to be as powerful as possible relative to potential rivals.”⁷ Mark Beeson notes, “One state will assume a paramount position” because hegemony can “organize political, territorial, and especially economic relations [globally] in terms of their respective security and economic interests.” Consequently, hegemony will “try

and suppress rivals.”⁸ As the United States has reached such a hegemonic status, a large volume of literature has, thus, been linked to realist insights. One outcome is a spread of conventional wisdom not only within a circle of political scientists, but also to many observers across the world—a rising power (China) would inevitably challenge the existing hegemon (the United States).⁹

Washington’s power-oriented view toward China is not merely a theoretical matter. Modern history has revealed a continuous clash between great powers. Mearsheimer points out that Britain in the nineteenth century, Imperial Germany (1900–18), Imperial Japan (1931–45), Nazi Germany (1933–45), and the Soviet Union during the Cold War (1945–89) have all confronted the United States, in particular, for the purpose of obtaining supreme authority.¹⁰ Beeson also argues that such competitions between great powers, along with a few cases that have shown cooperation between these powers, have increasingly become accepted as a “cyclical” trend—one power will be replaced with another because they cannot coexist with each other on the same status quo.¹¹ Joseph Nye adds that the source of American power then had to be predominantly based on its military capability.¹² Hence, it is plausible for Washington to think that a hegemonic power and a rising power would always confront each other for greater influence; it is inevitable for it to view China within a context of a hegemonic rivalry.

The US unilateral practice as hegemon in East Asia after World War II not only gave legitimacy to the power-oriented nature of US politics, but also built such practice as a crucial element necessary for successful foreign policy. The regional order of East Asia has been strongly influenced by American power since 1945, characterized as the US unilateral, military-dominant, “hub-and-spoke” system embedded in the region today.¹³ The core of such a regional order was a bilateral tie between the United States and its various allies. This arrangement not only enabled the United States to be engaged in both security and economic matters of the region but also involved it in critical moments that determined much of the geopolitical fates of East Asian nations and regional order. For instance, the United States was a major actor in military conflicts in the region—the Korean War (1950–53), the Vietnam conflict (1960–75), and a series of Taiwan Strait crises (1950–95). The Cold War between the United States and the Soviet Union further exemplified the power-oriented nature of the US hub-and-spoke system in East Asia. A consequence of the US desire to contain communism in the region resulted in a clear divide between US

allies and nonallies as well as a continuous belief that the existing counter hegemony would always confront each other for paramount authority.

Equally important, US unilateral leadership gained substantial support from its allies in the region. Through bilateral ties, the United States has been separately involved in several countries' developments; for example, it initiated Japan's postwar reconstruction in extensive ways, from drafting a new constitution to developing its capitalistic economy as well as those of South Korea, Taiwan, and the Philippines. Japan's growth to become the world's second-largest economy by the 1980s is one example that proved to East Asian allies that the US model of development in economies and politics was the key for success and prosperity. US involvement in regional organizations to date—such as the Asia-Pacific Economic Cooperation (APEC) and the Six-Party Talks (SPT) regarding North Korea's nuclear issue—has also consolidated the positive view of US unilateral leadership, as other regional organizations without such involvement have continuously failed. John Ikenberry notes that China was well aware of the US hub-and-spoke system, essential to maintain the political stability of the region, and even tacitly supported the system.¹⁴ The collapse of the Soviet Union helped strengthen the positive view of US leadership; the US security regime and American values, such as democracy and capitalism, were not only legitimized but also embraced. Hence, Washington learned that the way to practice leadership was to act overtly and unilaterally with, for the most part, a militaristic approach and has continuously sought the hub-and-spoke relationships in East Asia. It was reasonable for Washington to consider its status primarily based on power. Its unilateral leadership practice was coherent with the regional order.

Washington's power-oriented view has continued into the 2000s. The Bush administration (2001–9) strongly sought maintenance of the US-led security system of East Asia, especially through the US-Japanese bilateral alliance. The rise of China was largely seen as another Soviet Union because China reflected a "classic power transition" through Washington's eyes.¹⁵ Today President Obama seems more open to multilateral leadership shared with a rising China. For instance, a strong condemnation on the lack of transparency in Chinese economic and military development policies was removed from a US white paper in 2009, shifting to a more cooperative and closer relationship with China. Addressing the US-China relationship as one of the most important diplomatic relations for the administration, President Obama visited Shanghai and Beijing immediately

after his inauguration in 2009. The current Chinese leader Hu Jintao reciprocated by attending the Nuclear Security Summit as well as bilateral talks with Obama.¹⁶ However, as Scott Snyder finds, while the administration avoids unilateral rhetoric, it still emphasizes policies to retain “bilateral ties with traditional allies.”¹⁷ Mistrust between Washington and Beijing is apparent at a certain level as Washington seems to consistently hold what China calls a “Cold War mentality.”¹⁸ Washington has a mindset that it is highly possible for China to become an enemy or threat to the United States. The collision between a Chinese fishing vessel and a Japanese patrol boat on 7 September 2010 near the disputed Senkaku/Diaoyutai Islands in the East China Sea revealed the lack of a needed structure for multilateralism while reinforcing the hub-and-spoke system. When Japan arrested the captain of the Chinese boat, China halted the export of critical materials to Japan and the United States. This resulted in the new, tighter US-Japan security agreement, which specifically points to how to deal with China.¹⁹ In short, it is understandable that Washington’s contemporary thoughts on leadership have been influenced largely by great-power politics. It has learned to exercise a leading role by overtly claiming and securing its interests through power.

China’s Multilateral Approach

Is China likely to take such a leadership role? Studies on Beijing’s “peaceful rise” or strategy of “peaceful development” have demonstrated that it is unlikely. Research indicates an alternative course for Beijing—to appear as a recognizable power, if not to challenge US hegemony. Put simply, Beijing’s approach is seen as multilateralism in contrast to US unilateralism. Denying an overt claim to obtain sole leadership in the world or in East Asia implies that China’s motivation is to develop its own economy and security, which intends not to harm or pressure other nations. In practice, China has attempted to emerge within the international community by becoming a *responsible* member and participant in liberal organizations and communities.²⁰

One way to analyze Chinese strategy is through its history and political culture and the significant differences in comparison to the West, of which Washington may not be fully aware. Kuik Cheng-Chwee argues that China has viewed the history of the twentieth century through a different lens. Although it recognizes that US unilateral leadership was essential to

the extent that it stabilized the region at a bipolar level, the history China experienced was “a century of humiliation.”²¹ China was rather a witness and victim of rises and falls of regional powers, including the Soviet Union and Imperial Japan. In this sense, China is opposed to overtly claiming unilateral leadership. It is aware that doing so can be not only conflictive but also cruel to states that are forcibly involved in competitions between great powers.

Similarly, studies on the origin of the rise of China have given greater attention to philosophical ideas advocated by Deng Xiaoping, who first coined the term “peaceful rise.” Deng pictured a peaceful rise of China since the 1970s. Communism was soon to die out in 1978, and Deng began to seek “four modernizations,” which list “China’s industry, agriculture, national defense, and science and technology.”²² This concept specifically leads China’s economic and, later, military development in a reciprocal manner such that both are meant to serve subordinately to enhance each other. As Kuik noted, one significant idea of Deng was to deny traditional realist thinking that “world war is inevitable” for a nation to rise.²³ The history of the twentieth century revealed an endless competition between great powers. Steve Tsang and Neil Renwick concur that Deng found it unwise to play traditional power politics because great powers would attempt to prevent a rising power from affecting the status quo.²⁴

Chinese white papers on national defense in the 2000s have continuously carried the legacy of Deng Xiaoping. Current Chinese leader Hu Jintao stated in 2008, “We will continue to follow the guidance of Deng Xiaoping Theory.”²⁵ Recent reports, titled “China’s National Defense,” released by the Chinese government in 2008 and 2010 have continuously emphasized “peaceful development” as the principal theme that denies China’s intention to challenge US leadership or its hegemonic position.²⁶ In 2011, China released an additional report called “China’s Peaceful Development.” It attempts to clarify what is meant by listing “scientific,” “independent,” “open,” “peaceful,” “cooperative,” and “common” aspects of the strategy, assuring that, once again, this peaceful strategy is primarily designed to develop China’s own economy and defense, securing its own favorable environment that is intentionally not hostile toward other nations. Recognizing itself as an important global player, China has also stressed in the report its emergence through organizations and institutions, or within the international community, by becoming a responsible and trustworthy member of these organizations and institutions.²⁷ Since the 2000s, China has joined

multiple organizations and concluded cooperative regional agreements, including the World Trade Organization (WTO), APEC, and the Shanghai Cooperation Organization (SCO).²⁸ It has become active particularly in constructing closer relationships with neighboring states in East Asia as well as promoting regional cooperation and integration, so-called East Asian regionalism. Fukuyama adds that China has not interfered in any affairs of others as a main actor or militarily, nor has it imposed the Chinese model of political and economic development on other nations.²⁹ Christopher Dent also recognizes that Beijing has not claimed to obtain leadership, allowing it to focus on its own economic development and stability, as Deng's philosophy posits.³⁰

Coping with the *Hedged* Chinese Aspiration

*Observe calmly, secure our position, cope with affairs calmly, hide our capacities and bide our time, be good at maintaining a low profile, and never claim leadership.*³¹

—Deng Xiaoping (1988)

There are interpretations that Beijing has deployed the multilateral approach as a strategic tool to indirectly weaken or limit US hegemony. There is an increasing apprehension in Washington that China has directed its multilateral approach to drive out US influence in East Asia, offering intergovernmental cooperation and building closer relationships with East Asian nations, including US allies. According to William Tow, Beijing has used fine-tuned words and behaviors to *hedge* its actual aspiration, which may involve the will to challenge the hegemony.³² Hidetaka Yoshimatsu indicates that Beijing's devotion to emerge from liberal institutions and the international community therefore serves to mitigate the "China threat" in the world.³³ Beijing wants to pursue its own goals without triggering a plausible reason for Washington to condemn its rise, which could hinder China's path to achieve its goals and interests. Similarly, Beijing's multilateralism may attempt to distract Washington's attention to investigate China's capability of becoming the hegemon, as Deng's guidance advises to "hide our capacities and bide our time." Zhang Yunling and Alan Alexandroff have stated that as "an insider in the international system . . . China has thus far escaped a more searching examination as a challenger and possible threat to the United States."³⁴ If Beijing wanted to pursue a supreme position, it would hide this intent

until it was comfortable and confident to demonstrate the capability to do so. Equally important, China has taken a clear stance toward the United States in the security area. An official report from the Chinese government in 2008 has specified, “In particular, the United States continues to sell arms to Taiwan in violation of the principles established in the three Sino-US joint communiqués, causing serious harm to Sino-US relations as well as peace and stability across the Taiwan Straits.”³⁵ “China’s National Defense in 2010” stated that the US alliance with Taiwan will be “severely impeding Sino-US relations.” This report added, “Relevant major powers are increasing their strategic investment. The United States is reinforcing its regional military alliances, and increasing its involvement in regional security affairs.”³⁶ These documents clearly indicate that “peaceful development” does not mean that China would never militarily confront the United States in the future. It is important to acknowledge that security relations between the United States and China will remain conflictive, especially as long as the US-Taiwan alliance is kept strong.

However, the real challenge is neither how Washington copes with the hedged realism of China’s aspiration to become a unilateral leader nor how it confronts China’s clear suspicion toward the United States in security matters. As long as Beijing refrains from explicitly claiming such an intention to take unilateral leadership and does not wage an actual military confrontation with the United States, there are no legitimate reasons for Washington to be assertive—nor does it want to be, considering its close economic interaction with China. Rather, scholars argue that a principal problem centers on a limited scope of US thoughts on leadership. Although China’s closer relationship may be directed at constraining US influence in East Asia, scholars are more concerned that a whole region may be moving away from US unilateral leadership.³⁷ They believe that, as mentioned, a “Cold War mentality” is still deeply embedded into Washington’s view. Nye points out that Washington lacks an ability of “getting others to want what you want,” when “military force plays no role in international politics.”³⁸ Gerald Curtis also notes that such a tendency of Washington limits it from understanding East Asian regionalism along with China. He states, “East Asia does not need a new security architecture. It needs an attentive US government that engages with countries in the region flexibly and with imagination.”³⁹ While previous studies reveal that the continued presence of US leadership was partly due to support

from East Asian allies, East Asian nations today are mindful of the benefits of accepting a rising China in constructing economic ties and delivering spillover benefit on political issues. In other words, China's closer relationships may be due not only to its practical effort but also to the willingness of East Asian nations to work with China, not the United States.

The promotion of East Asian regionalism since the late 1990s is particularly indicative of this fact. Wu Xinbo has noted, "A rising China must be conceived in the context of East Asian integration, rather than putting East Asian integration in the shadow of a rising China."⁴⁰ He suggests that, as discussed, East Asia as a whole has moved toward multilateralism, though China plays a crucial part of the progress. According to the Asian Development Bank, East Asian regionalism refers to a regional cooperation and an attempt for integration, meaning to address issues "that are inherently regional in scope. . . and cannot be solved at a global or national level."⁴¹ After the Asian financial crisis of 1997–98 revealed a lack of intergovernmental communication and cooperation, East Asian nations have sought improvement in their capability and capacity to handle their issues, possibly aside from US leadership. It is a mutual effort of East Asian nations, including China and Japan, to embrace multilateralism, bringing hope that the intergovernmental cooperation in economic/business and political fields integrates state and nonstate actors; these players together make economic prosperity and political stability possible.

This view also argues the consequence of China's great emergence. A process of East Asian integration finds a valuable role that China could play, while the role of the United States as a non-East Asian nation is unclear. It is also uncertain that the United States would be in accordance with multilateral governance of the region, since Washington has a tendency to expect unilateral governance. Congressional analyst Bruce Vaughn has worried that "fundamental shifts underway in Asia could constrain the U.S. role in the multilateral affairs of Asia. The centrality of the United States is now being challenged by renewed regionalism in Asia and by China's rising influence."⁴² His idea indicates the profound impact of the rise of China and the relative influence of its practical policy on US leadership such that the sustainability of that leadership is now in question. In a particular case where Washington desires to maintain the current regional order and leadership, this idea then suggests it pay greater attention to the whole region of East Asia, particularly the process of integration called East Asian regionalism.

The Role of China in East Asian Regionalism

China has become a leading actor in promoting so-called East Asian regionalism in the last decade. It has now played crucial roles in regional organizations, particularly ASEAN Plus Three (APT) and the East Asian Summit (EAS). China has also put a large amount of effort into building closer ties with neighbors in both Southeast and Northeast Asia, offering free-trade agreements and other cooperation in political, economic, and security fields.

In Southeast Asia, China alone has held a series of meetings with ASEAN to ameliorate political and economic relations. In 2000, China and ASEAN agreed to launch the ASEAN-China Free Trade Area (ACFTA). The FTA between China and six nations of ASEAN—Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, and Thailand—was concluded in 2010, and another among China, Cambodia, Laos, Myanmar, and Vietnam is planned by 2015. China has also arranged the Chiang Mai Initiative (CMI)—now called the Chiang Mai Initiative Multilateralization (CMIM)—with Thailand, Malaysia, Indonesia, and the Philippines.⁴³ In response to the Asian financial crisis in 1997, the bilateral currency swap arrangement among APT countries was launched to provide liquidity that can ease issues of balance of payments and monitor the flow of capital. As China grows into a major economic power, it has increased its contribution from \$4 to 30 billion to the CMI and has also offered a similar bilateral swap that can be worth \$26 billion. Similarly, China has given a larger contribution in official development assistance (ODA) to ASEAN, especially Cambodia, Laos, Myanmar, and Vietnam. It promised \$10 billion to the China-ASEAN Fund on Investment and Cooperation as well as “\$15 billion for commercial credit, \$200 million to Asian Bonds Market Initiative, and \$100,000 to the ASEAN Foundation in strengthening cultural ties.”⁴⁴

In Northeast Asia, China created closer cooperative ties with Japan and South Korea. A trilateral summit among China, Japan, and South Korea has taken place since 2000 to construct a horizontal network within Northeast Asia, especially with the idea of a Northeast Asia Free Trade Area (NEAFTA).⁴⁵ In 2003, these three countries agreed to study the architecture of NEAFTA and have extensively discussed greater cooperation in a variety of areas, such as security, technology, environmental issues, and human resource development. In 2010, China also concluded the Economic Cooperation Framework Agreement (ECFA)

with long-standing rival Taiwan, putting aside the issue of who is the *true* China.⁴⁶ In this respect, China's close work with another rival, Japan, is also worth highlighting. Despite their rocky relationship fraught with historical tension, especially due to wars in the twentieth century, China and Japan are now both members of various regional institutions, including the APT, the EAS, and the APEC. Since 2006, Beijing and Tokyo have repeatedly announced strengthened cooperation in various fields. In 2008, Chinese president Hu Jintao spoke at Waseda University in Japan, announcing that China and Japan must "increase strategic mutual trust . . . deepen mutually beneficial cooperation . . . [and] promote Asian rejuvenation."⁴⁷ In practice, China and Japan launched a joint study in 2006 on the different interpretations of modern history—especially the era of Japanese aggression during World War II—aimed at establishing a common history that China and Japan can share while resolving controversies over Japanese textbooks. Beijing and Tokyo have also promoted cultural exchanges of students, films, and music to ameliorate their relations at a fundamental level.⁴⁸

The Role of the United States in East Asian Regionalism

While these cases show the active role of China in promoting cooperation in East Asia, the United States had little to do with the process. Put simply, the process of East Asian regionalism seems not to favor US engagement, and it exposes the issue of unilateralism that the United States has long exercised in the region. While the 1997 financial crisis revealed a lack of intergovernmental cooperation within the region, the United States failed to respond to the crisis by acting as a leader in the region, as noted by David Hale.⁴⁹ This brought East Asian nations not only a vulnerable hope of relying on the United States but also a reluctance to follow US-led initiatives, namely the IMF and the APEC. In other words, inadequate responses of the United States, the IMF, and the APEC to the crisis have become inevitable causes for East Asian nations to pursue cooperation strictly within the region and have accelerated their reluctance of welcoming US involvement.

While the United States has insisted that the APEC should be the platform for Asia-Pacific regional cooperation, East Asian nations have vigorously sought regionalism based on the APT and the EAS, in which the United States has never participated. Poor functions of the APEC as a

regional forum crucially shifted East Asia's view from what Ming Wang calls "open regionalism" to an exclusive one.⁵⁰ The APEC has grown as a transregional organization that includes East Asian, Pacific, and North and South American nations and imposes no legal rules or enforcement to maintain negotiations. It was chiefly designed to "facilitate wider global processes."⁵¹ It was not meant to cope with regional affairs and issues. Having the APEC alone to represent East Asia was, therefore, compelling for East Asian nations to seek a smaller but more practical regional grouping to manage regional matters. The former minister of finance of Japan, Eisuke Sakakibara, stated in 2001,

I think that the era of APEC was already over. This is because APEC includes the US. However, APT does not include the US. Regional co-operation including the US is rarely meaningful, because the inclusion of the US is nearly a synonym of global co-operation. The role of such a framework is merely to supplement the ongoing international system owned by the US.⁵²

So the US push for the APEC is critically challenged, and it has further invited a bitter critique to Washington's insufficient attention to APT and the EAS. A main criticism is that Washington has primarily been seeking a consolidation of the US-Japanese alliance as an integral approach to East Asia. The United States has assigned Japan to ensure US interests in summits of APT and the EAS, insisting that a process of a regional co-operation and integration, or East Asian regionalism, should not exclude the United States. However, this US bilateral approach does not seem to be dependable. As China plays a significant role in the process, Japan's bargaining ground is contested with that of China. Since the United States is not qualified to join APT,⁵³ Japan alone proposed to utilize the EAS for the basis of the regionalism and to include the United States as an observer in the first meeting in 2005. However, Shintaro Hamanaka finds that the concluding report of APT and EAS meetings in 2005 adhered to APT as the platform of regional integration in the future, partly showing Japan's compromise. China advocated an exclusive APT grouping for the main vehicle.⁵⁴ Kazuhiro Togo also points out that Japan is well aware that some degree of agreement with China is necessary to advance the multilateral process.⁵⁵ This indicates that Japan's effort to contribute to East Asian regionalism could dilute US influence. Lately a debate has emerged over the reliability and duration of Japanese resistance to US pressure to sustain its interests in the presence of China's consolidation influence.

Concluding Remarks

This analysis has revealed a gap between Washington's and Beijing's thinking on the acquisition and practice of leadership. It has recognized a realist and power-oriented consensus of Washington to embrace a hegemonic position in contrast to Beijing's multilateral approach in gaining leadership in East Asia. Previous literature has acknowledged a realist insight in Beijing's approach that multilateralism could be used to *hedge* its real aspiration to pursue a hegemonic position. However, examining East Asian regionalism demonstrates that, regardless if Beijing's intention is possible, its multilateral approach has had a practical and profound impact on the region. As the region recognizes the important role of China, this fact points out a limitation of Washington's view toward China. While the United States waits for China's confrontational attitude to claim leadership, the impact of China on the current US leadership grows in a relative and indirect manner. Increasing interest in regional integration among East Asian nations assists the growth of China's influence. This suggests that Washington need not only pay greater attention to promoting regional cooperation, but also actively engage and contribute to building a cooperative mechanism in the region.

To be sure, East Asian regionalism is by no means a single factor that alone can determine the decline of US leadership in the region and replacement by Chinese leadership. There are numbers of challenges for East Asian nations to overcome in the process of regional cooperation, as well as a need of further research on how to resolve these challenges. The Sino-Japanese rivalry, for example, while showing a cooperative aspect not only impedes the process at early stages, but also divides nations. Although efforts by China and Japan to cooperate are seen, they are as yet noncommittal—the Sino-Japanese rivalry of over a century will not die overnight. In this sense, Nye points out that US leadership is necessary for other East Asian nations to maintain regional stability.⁵⁶ In addition, the latest incident between Chinese and Japanese vessels, as mentioned, has halted the top-officials' meetings and further emptied a national-level interaction creating the "worst spat in years," as noted in the *China Post*.⁵⁷ In other words, none of the developments in the newly emerging East Asian regionalism are concrete enough to mean the exclusion of the United States, nor do they mean a dismissal of US leadership.

Nonetheless, the profound impact of China's multilateralism on neighboring states is substantial; the shift in East Asian nations' mentality to accept the emerging China and to embrace multilateralism is recognizable in discussing an intraregional framework of integration. It poses a fundamental challenge to

Washington, not because it posits that US leadership is at stake, but it invites a question of how Washington should adopt its leadership to the dynamically changing environment of the region. Realist insight is important; yet, East Asian regionalism has sparked a nonrealist aspect of the region to embrace a multilateral framework. The US unilateral hub-and-spoke system, then, does not seem to be a perfect match for the region. ASEAN announced at its 2010 meeting that it has invited the United States and Russia to the EAS meeting to be held in 2011.⁵⁸ This will be an opportunity for Washington to pay greater attention to the whole region by becoming actively involved in said regionalism, especially if it wants to maintain its leadership. ■■■■

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Book Essay

Airpower: Two Centennial Appraisals

Karl P. Mueller

Airpower for Strategic Effect by Colin S. Gray. Columbia University Press, 2011, 398 pp., \$55.00. (Air University Press hardbound edition may be ordered by military members at no cost or downloaded in PDF format at <http://aupress.maxwell.af.mil>.)

The Age of Airpower by Martin van Creveld. Public Affairs, 2011, 512 pp., \$35.00.

For airpower enthusiasts who enjoy commemorating anniversaries of historically significant dates, 2011 has been a big year.¹ It is the decennial of Operation Enduring Freedom, when US, British, and allied airpower and special operations forces joined with the Northern Alliance to topple the Taliban regime in Afghanistan and drive al-Qaeda's leadership out of the country in an unexpectedly rapid campaign, as well as the 20th anniversary of Operation Desert Storm—the defeat of Iraq and the liberation of Kuwait by air and ground forces of a US-led coalition in an even swifter war. Seventy years ago, 1941 saw not only Japan's naval air attack on Pearl Harbor, but also the establishment of the US Army Air Forces as a military arm formally equal in status and independence to Army ground forces. This year also marks the 90th anniversary of the sensational sinking of the battleship *Ostfriesland* by Billy Mitchell and his team of Army Air Service airmen. Finally, perhaps least familiar of all these events, airplanes were first employed in combat 100 years ago by Italy in Libya during the Italo-Turkish War, making 2011 arguably the centennial of military airpower.²

A century later, another war for control of Libya is winding down as I write this essay. It is a very different conflict and one in which airpower has played an infinitely more important part, though like its predecessor it merits greater attention than it has received. However, there are more powerful factors than historical coincidence that make this a good time to take stock of the past and the potential of airpower. The ongoing US military withdrawal from Iraq and the gradual waning of NATO's presence in Afghanistan portend a future in which major, land-power-centric counterinsurgency operations will no longer

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dominate US and allied defense activity. Meanwhile, shrinking European and, almost certainly, American defense budgets are forcing leaders to make difficult choices about how much and what types of military capabilities to retain in the future. It is therefore timely that two major books about airpower writ large by prominent and prolific authors have appeared on the scene in recent months. Martin van Creveld's *The Age of Airpower* and Colin S. Gray's *Airpower for Strategic Effect*³ each combine a survey of the history of airpower with an examination of its nature and an assessment of its current state and future prospects. Yet, the two reach strikingly different conclusions about their common subject, and in the end, it must be said, only one of the books makes a genuinely useful contribution to our knowledge about airpower.

Attacking without Precision

The Age of Airpower is an engagingly written account of the evolution of airpower since its inception but not the sort likely to appeal to contemporary airmen. The story that van Creveld presents is of a relatively brief era, roughly from the late 1930s to the late 1960s, when airpower achieved its greatest prominence before being left behind by the tide of history and its own gradual loss of essence. Since World War II, he declares, "Far from growing, the power of airpower has undergone a slow but steady decline" (p. 424).

This is likely to strike many as a remarkable thesis given the things that airpower has done in the past several decades, so it is worth unpacking van Creveld's arguments in some detail. These involve two principal themes. The first is that airpower is very important in major conventional wars—"no large scale conventional campaign is feasible in the teeth of enemy command of the air" (p. 398)—but such conflicts have become a thing of the past, principally because the spread of nuclear weapons makes major powers unwilling to fight each other lest doing so lead to cataclysmic escalation. They have been supplanted by "wars among the people" involving irregular enemies, van Creveld argues (crediting Gen Rupert Smith for both the idea and the label),⁴ and "the use of airpower in such wars has been the record of almost uninterrupted failure" (p. 338).

Van Creveld's argument that airpower has become largely irrelevant to today's and presumably tomorrow's wars is noteworthy mainly for the extreme terms in which he makes it (including his failure to acknowledge that many categories of military forces, not only airpower, matter much less if major war is obsolete). Others before him have argued more compellingly that major conventional war is disappearing. It is certainly true that since 1945 wars among modern industrialized states have been very rare; however, which of a number of possible explanations for this pattern are actually driving it has been the subject of much debate.⁵ Nuclear proliferation is not a very satisfactory explanation, at least in isolation from others, for a number of reasons, the most obvious being that the number of nuclear-armed states still remains in the single digits. Yet van Creveld could be correct about the phenomenon, even if his explanation for it is

unpersuasive. The questions that follow are whether such conflicts are so impossible that preparing for them is no longer desirable, whether their unlikelihood is due in significant part to the deterrent effects of airpower, and whether it is really true that airpower is irrelevant in subconventional conflicts.

The basic idea that airpower is, by its nature, not merely a supporting actor but indeed a big player in counterinsurgency is all too widespread.⁶ It is certainly true that the need for face-to-face contact with local populations when fighting insurgencies tends to make forces on the ground in substantial numbers indispensable and to cause such campaigns to be naturally more “ground centric” than comparable conventional wars.⁷ The challenges of identifying irregular targets mingling with civilian populations or located in complex or urban terrain also limit what airpower (and also naval power, though van Creveld does not mention this) can achieve from stand-off ranges. Yet, airpower tends to be invaluable in such conflicts and has often contributed notably to success in them.⁸ How then can van Creveld make the claim of “almost uninterrupted failure”? Remarkably, in addition to overequating airpower with ground attack, he declares that “had airpower been as dominant as some people have claimed, then the outcome ought to have been the rapid and complete defeat of the insurgents . . . In practice, things turned out quite differently” (pp. 337–38). In other words, airpower persistently fails when fighting irregulars because it does not lead to easy victories—just as ground power does not.

Where *The Age of Airpower* truly breaks new polemical ground is with its second argument that the age of airpower is behind us—that setting aside whether or not it is a relevant tool in today’s security landscape, airpower is actually degenerating—becoming less and less potent as its costs rise, its numbers fall, and its effectiveness fails to grow. This would seem to be no easy claim to make in light of developments over the past 45 years in precision-guided munitions (PGM), airborne sensors, stealth, and electronic warfare,⁹ and in the face of the improving performance of airpower as an instrument for attacking land forces during the 1972 Easter Offensive, the 1991 Gulf War, and the recent invasions of Afghanistan and Iraq, among other conflicts.¹⁰ The author rises to the challenge by examining airpower out of context, making unsupported assertions, and citing bogus evidence.

Van Creveld discusses at length the rising costs of buying and maintaining aircraft and the resulting decline in their numbers, and much of what he says is correct: Western air forces have been shrinking for decades as emphasis shifts from quantity to quality (as well as for other reasons), and even the Russian and Chinese air forces have more recently been following suit.¹¹ Although van Creveld exaggerates in saying that aircraft are now nearly as expensive as naval combatants, they have certainly tended to become dearer to their owners. However, it is important to note that this trend toward less-numerous, more-expensive systems is not peculiar to airpower, applying as well to ships, submarines, armored fighting vehicles, and other systems.¹² Similarly, the rise of missiles and remotely piloted aircraft to supplement and, in some cases, supplant manned

aircraft is an important trend (though not everyone would agree with van Creveld that a drone is less representative of airpower than is a fighter) but needs to be accompanied by recognition that aerial systems, both manned and unmanned, are also taking business away from terrestrial providers as sensors and weapons improve.

The typical military response to complaints about the rising costs of weapons and platforms is that the effect of declining numbers of systems is offset, and indeed more than made up for, by the improving capabilities of individual aircraft or weapons. Here van Creveld avidly and consequentially differs, insisting that newer systems are not in fact much more capable than their predecessors, so a decline in numbers really does mean a decline in value. In air-to-air combat, he argues, technological progress cancels out, so that while a modern fighter is more capable than one from World War II, an F-15 that has to fight a MiG-29 is no more useful than a Spitfire that has to fight a Bf 109 (p. 202). This is wrong on several levels, but even if it were not, it applies no less to other weapons that are designed to fight against their peers, such as tanks. Most significantly, van Creveld claims that PGMs and other modern aerial weapons are not much more lethal than older and unguided ones: “A Stuka was quite as capable of knocking out a World War II tank as an A-10 Warthog is of doing the same to a present-day one. Similarly, P-47 Thunderbolts in 1944–45 did not take many more sorties to bring down a bridge or hit a locomotive than an F-16 did six-and-a-half decades later” (p. 431).

These claims, which as generalizations are patently incorrect—consider that F-4s armed with primitive PGMs in 1972 were vastly more efficient at destroying targets like bridges than were F-105s with iron bombs a mere few years earlier—are offered without reference to any sources. Van Creveld similarly argues that modern fighters are no more effective at providing close air support than their World War II predecessors, simply because both need to loiter near the battlefield to have very rapid response times.

In short, van Creveld argues that all that PGMs really accomplish is to allow aircraft to attack their targets from farther away, where it is safer. Even if this were true, the implication is militarily nonsensical. It is equivalent to insisting that a snub-nose pistol is as accurate as a sniper rifle because either one will consistently hit if it is pressed against the target’s forehead before firing—or that bourbon is no stronger than beer because either one can make you drunk.

Analytically, *The Age of Airpower* misses its target quite badly, substituting shaky assertions for solid logic and relying on dubious or mischaracterized evidence for much of its empirical support. But does it nevertheless constitute a worthwhile history of airpower if one sets aside its policy-related arguments? It is certainly sweeping in its scope, aside from giving rather short shrift to a number of recent conflicts, such as the wars in the Balkans in the 1990s and the 2001 campaign in Afghanistan, and van Creveld provides detailed discussions of some usually neglected topics, including the 1911–12 war in Libya.

Alas, no. In fact, the book's history is saturated with scores of errors, giving the strong impression the author does not have a deep knowledge of his subject, and his preference for quantity over quality extends to research and writing, at least in this case. Many of the mistakes relate to details that are not essential to the main arguments, but collectively they undermine quite significantly the reader's confidence in anything the book has to say, not least when they turn out to be due to misreading the Wikipedia articles that are so often cited in the end-notes. These minor errors run the gamut from characteristics and designations of aircraft¹³ and their armaments,¹⁴ to details of naval vessels,¹⁵ to dates and descriptions of events,¹⁶ to orders of battle.¹⁷ But other historical errors are quite relevant to van Creveld's arguments, such as claiming that in 2001 no land-based fighters could fly sorties over Afghanistan (p. 265; in fact, F-15Es and other jets flew hundreds of sorties from bases in the Middle East), that strategic airlifters do not fly directly into Afghan bases (p. 417), and that modern bombers are so inefficient for delivering conventional bombs that using them in this role almost amounts to "a bad joke" (p. 196). Elsewhere, details that are central to making sense of the strategic history are missing, particularly with respect to some important recent conflicts.¹⁸

Perhaps most disturbingly, van Creveld concludes the book with a brief but caustic coda in which he blames increasing numbers of women in uniform beginning in the 1970s for emasculating macho air force culture, driving strippers from their traditional and proper place in officers' clubs, and undermining pilots' attitudes that had once made airpower great (pp. 439–41). This tirade reaches its lowest point when van Creveld suggests that women are underrepresented in combat roles in the US Air Force relative to other specialties not because of long-standing prohibitions on their serving in combat, or even biologically based physical disadvantages, but because they are not courageous.

Of course, there is a great deal of history in *The Age of Airpower*, and most of it is not incorrect, but there are few historical books about which that much cannot be said. A history of the American revolution that was mostly accurate but claimed that rifled muskets were not more accurate than smoothbore ones, confused Sam and John Adams with each other, described Valley Forge as being in New Jersey, and attributed the absence of women in the Continental Congress to the fairer sex's indifference to politics would not be welcomed on military or civilian college syllabi and neither should this book, with its far more pervasive inaccuracies, great and small.

Thinking Strategically

On a superficial level, Colin Gray's *Airpower for Strategic Effect* has much in common with *The Age of Airpower*—a survey of airpower history from its beginnings to the early twenty-first century, arguments about the relationship between airpower and other categories of military power, and historically based policy prescriptions. Yet a comparison of the two works is a study in profound contrasts.

Perhaps the most obvious difference between the volumes is that Gray's assessment of contemporary airpower is considerably more positive than van Creveld's, though it is not an unalloyed panegyric: "In the global strategic history of the past 100 years, airpower probably has been the greatest success story." Gray's book also gives proportionately greater emphasis to airpower after 1945; more consistently pays attention to aspects of airpower other than fixed-wing, air-to-air and air-to-surface combat; and, it must be said, as a rule it gets its facts right.

Airpower for Strategic Effect gives the impression of being a considerably more disciplined book than the sometimes rambling, and occasionally ranting, *Age of Airpower*. The first three chapters are a deliberately theoretical examination of strategy, airpower, and the relationship between the two; this is the unifying theme of the entire volume, which Gray declares is intended "to reset the theory of airpower." Here Gray establishes himself as a Clausewitzian student of strategy as science and art—as it happens, exactly the sort of mind-set van Creveld spent much of his previous book criticizing.¹⁹ Throughout the next five chapters, which constitute the historical narrative, Gray remains focused on the strategic dimension of the story, frequently addressing technical and tactical details but only to the extent that they bear on the strategic level, as his title suggests. Readers interested in an encyclopedic, descriptive history of airpower will find much of value here but will also encounter topics that are deliberately elided.

The resulting history is perhaps unexpectedly humanistic after the intellectual formality of the opening chapters and given the scientific emphasis of the project. Gray repeatedly emphasizes the importance of recognizing that strategy is made by people who are far from omniscient and whose choices should be evaluated with the limitations imposed by their circumstances kept firmly in mind—"Context rules!"—and that when airpower fails to achieve an impossible goal it does not constitute a strategic failure (at least for those who had no say in choosing the objective). He notes the costs that airpower has suffered from its more extreme advocates promising more than it could realistically deliver—as exemplified by van Creveld berating it for not fulfilling the most extravagant promises made on its behalf, and even a few that were never made at all—while acknowledging the compelling political and organizational imperatives that often led them to oversell their product. Similarly, Gray is quite sympathetic to John Boyd and John Warden for their contributions to reinvigorating strategic thought about airpower while also pointing out the considerable shortcomings in their theories, including the inappropriate application of Boyd's OODA loop to the strategic level of war and the overly Jominian, rigidly mechanistic aspects of Warden's targeting concepts.

It is a testament to Gray's execution of his project that a reader not inclined to tackle three chapters of rather heavy-going theory could easily start reading with the first historical chapter—about airpower during and after World War I—and by the end of the book would have missed out on relatively little of its value. As a history of its subject this is an outstanding work, presenting the experience of airpower in the world wars, Korea, Vietnam, and the wars of the past 11 years in

their broader strategic context and with plenty of insights. There are places with room for debate—for example, like van Creveld, Gray aptly credits the Combined Bomber Offensive with the all-important destruction of the Luftwaffe but has relatively little to say about the destruction of the German war economy that the bombers ultimately achieved.²⁰ But such quibbles are minor when placed beside a history that has so much that is worthwhile to say in an account of relatively modest size for the scale of its subject.

Airpower for Strategic Effect culminates with a presentation of Gray's general theory of airpower, embodied in 27 strategic dicta. These merit close attention by both students and practitioners of airpower, strategy, or both. They do not represent the final word in airpower and strategy but rather a set of principles that may serve as a basis for further efforts in the field. Being focused on making strategy for the real world, there is much that emphasizes the timeless strategic bedrock, "it depends" (which a decade and more ago at the School of Advanced Airpower Studies [as it was then], we used to say was the only SAAS "school solution"). Thus, for example, Gray emphatically, and in my view correctly, rejects the shibboleth that airpower is inherently offensive in favor of recognizing that it has the potential to be strategically useful in a variety of offensive and defensive roles.

This is not to say, however, that Gray recognizes no enduring, prescriptive principles. Notably, he is quite emphatic about the importance of strategic education, observing that "the effectiveness of airpower is highly dependent upon the quality of (variably joint) air strategy that directs it, and that quality rests on the quality of strategic education absorbed, understood, and applied by air strategists." Moreover, "It is paradoxical that air forces willing and able to spend billions of dollars on technical and tactical education typically devote a trivial amount to understanding what they do or might do strategically and why they are asked to do so by their political owners." As the US Air Force and those of its allies decide how to tighten their belts in the coming years, this is guidance that should be kept very much in mind.

Odyssey Dawn's Early Light

So here we stand a century after Italian aircraft in Libya flew the world's first aerial reconnaissance and bombing missions as the dust settles from another war in the same place. If the past decade was sometimes labeled as the beginning of the "post-post-Cold War" era to distinguish it from the years of peace dividends, peacekeeping, and peace enforcement in the 1990s, the NATO intervention in Libya can fairly be said to represent the first "post-post-9/11" war for the United States. It was also the first major use of airpower since van Creveld and Gray finished writing their recent works on the subject, so it provides something of a test case against which to apply their theories.

Van Creveld's arguments do not fare well in this case. The Libyan conflict was very much a war among the people (albeit one in which geography was relatively

favorable for airpower), yet the aerial intervention by France, Great Britain, the United States, and their partners was no strategic failure. Instead a relatively modest deployment of forces succeeded in achieving its objectives (though dynamic at best and ill defined at worst) of preventing the Qaddafi regime from crushing its opposition and then enabling the tide in the conflict to turn in a matter of months from seemingly inevitable defeat for a weak rebel movement to the overthrow of a well-funded, heavily armed government. As in Iraq, Bosnia, Kosovo, Afghanistan, and Iraq again, the enemy was far from being a top-flight adversary, but given that the intervention was conducted at a cost in resources that paled beside the ongoing expense of the war in Afghanistan and involved no NATO casualties at all, its success is very far from insignificant.

In contrast, the Libyan intervention was all about airpower for strategic effect and helps to illustrate the soundness of a number of the arguments Gray proffers. We see an improvisational, politically untidy strategy nevertheless leading to game-changing results, with airpower operating as a prominent player on a joint battlefield. NATO's initial and ultimately most significant success came in using airpower on the strategic defensive to protect the Libyan rebels at their time of greatest vulnerability. In the latter stages of the conflict, the strategic effect of helicopters—with which Gray is much taken—was greatly in evidence. If there is a place where Gray's dicta come up short in comparison to the evidence from Libya, it is in the extent to which the conflict points out the importance of airpower's capacity to apply force with relatively little risk of casualties among its operators. Although one might debate the extent to which this is truly an enduring property of airpower, a good case for it becoming the basis of a 28th dictum could certainly be made.

At the time of writing, much remains uncertain about the results of the Libyan war, and it may yet appear in the long run to have been a strategic misstep, although that possibility appears relatively unlikely. Whether it will turn out to be a harbinger of future US military operations to come in an era where neither major wars nor large occupations appear strategically enticing is also yet to be determined—and may depend in no small part on how the preceding uncertainty resolves itself. But however these questions turn out, the intervention should be reckoned as a case of airpower successfully achieving the strategic effect it was directed to pursue and, once again, defying traditional military expectations.

Notes

1. Among other airpower commemorations that could be added to this list are the 30th anniversary of Israel's tactically brilliant but strategically counterproductive Osirak raid; the 35th anniversary of Operation Entebbe, the air landing of Israeli commandos in Uganda to rescue the passengers of a hijacked airliner; the 50th anniversary of the cancellation of the B-70 Valkyrie bomber program; the 75th anniversary of the first Chain Home radar station on the English Channel coast; and the centennial of the first landing of an airplane on a naval vessel.

2. For an alternative dating, see Air Vice Marshal Tony Mason, *Air Power: A Centennial Appraisal* (London: Brassey's, 1995).

3. In the text that follows, page numbers are provided for references to *The Age of Airpower* but not to *Airpower for Strategic Effect*, as the final pagination of the latter was not yet available at the time of writing.

4. Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (New York: Knopf, 2007).

5. See among others, Richard N. Rosecrance, *The Rise of the Trading State* (New York: Basic Books, 1986); John Mueller, *Retreat from Doomsday: The Obsolescence of Major War* (New York: Basic Books, 1989); Michael E. Brown, Sean M. Lynn-Jones, and Steven E. Miller, eds., *Debating the Democratic Peace* (Cambridge, MA: MIT Press, 1996); and John Mueller, *Atomic Obsession* (New York: Oxford University Press, 2009).

6. The relegation of airpower to a brief appendix in FM 3-24, *Counterinsurgency*, is often cited—including by van Creveld himself—as one indicator of this pattern.

7. This is true even if one does not subscribe to the paradigm of population-centric counterinsurgency. Strategies that focus on attrition against irregular enemies—Israelis refer to this as “mowing the grass” in the West Bank—generally depend heavily on local presence for intelligence collection.

8. James S. Corum and Wray R. Johnson, *Airpower in Small Wars* (Lawrence: University of Kansas Press, 2003).

9. Benjamin S. Lambeth, *The Transformation of American Air Power* (Ithaca, NY: Cornell University Press, 2000).

10. David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era* (Santa Monica, CA: RAND, 2007).

11. The one genuinely bizarre part of van Creveld's argument on this point is a claim that air forces have become smaller in part because national leaders have “without exception” pursued a policy of deliberately emasculating their generals to reduce their ability to drag their nations into wars that might lead to nuclear escalation (p. 427).

12. “There are historical grounds for suspecting that the combination of very high quality and very small numbers is a typical sign of military degeneration” (p. 433). This assertion is promptly undermined, however, when van Creveld illustrates it with two examples drawn from naval history, the evolution of Hellenistic oared warships and of armored battleships, both of which he mischaracterizes to a startling degree.

13. For example, van Creveld confuses the Spitfire and the Hurricane (p. 99), credits the B-17 with an enormous 17,600-pound bomb load, says that the B-24 was already approaching obsolescence when it entered service (p. 120), indicates that the Bear and Bison were the same Soviet aircraft (p. 196) rather than two completely different (and competing) bombers, and describes India's “Sabre Slayer” Gnat fighters as jet trainers (p. 286; the Gnat trainer, famously flown by the Red Arrows, was a different and larger aircraft that India never operated), among many other errors.

14. Van Creveld notably confuses the characteristics of radar-guided and infrared-homing air-to-air missiles and of optically guided and laser-guided bombs (p. 301).

15. The text describes HMS *Glorious* as being considerably larger than HMS *Courageous* (they were actually sister ships; the author compared the tonnage of one before her conversion from battle cruiser to aircraft carrier to the postconversion displacement of the other); says World War II merchant aircraft carriers had to lift their planes from the sea with cranes (p. 133; they did not); and purports that Argentina's *Venticinco de Mayo* was a former escort carrier converted from a merchantman (p. 269; she was not).

16. “What was definitely not a figment of the imagination was a Viet Cong attack on the air base at Bien Hoa, near Saigon, on November 1, 1963, which destroyed many U.S. and South

Vietnamese aircraft, including 13 B-57s and six A-18s [*sic*]” (p. 382). The attack in question was actually on 1 November 1964 and is reported to have destroyed five B-57s; the larger number of B-57s and A-1Es to which the book refers was destroyed in an accidental explosion and conflagration at Bien Hoa on 16 May 1965.

17. Van Creveld describes the North Vietnamese air forces as having routinely launched fighter sorties from Chinese airfields during Operation Rolling Thunder (p. 391; they did not) and says they used SA-3 missiles against US aircraft (p. 391; these entered service after US forces left).

18. Van Creveld notes the interwar belief that “the bomber will always get through” without explaining why theorists of the pre-radar era believed that effective defense against bombers was impossible. In noting that most military cargo is still moved by sea and land transport, van Creveld says that these are not only cheaper but also more secure than airlift—a remarkable generalization to make following years of road convoy attacks in Iraq and Afghanistan (pp. 321–22). There is much disdain for the conduct of the air campaign against Serbia in 1999, but no explanation of why van Creveld does not consider it ultimately to have been a significant success for airpower, and little attention to the 2001 air campaign in Afghanistan beyond noting that the Taliban were a weak adversary and that a lack of sufficient ground forces allowed enemy leaders to escape at Tora Bora.

19. Martin van Creveld, *The Culture of War* (New York: Ballantine, 2008).

20. For more on this subject, see Adam Tooze, *The Wages of Destruction: The Making and Breaking of the Nazi Economy* (New York: Viking, 2007).

Book Reviews

Cyber War: The Next Threat to National Security and What to Do about It by Richard A. Clarke and Robert K. Knake. HarperCollins, 2010, 290 pp., \$25.99.

A few years back, the US Air Force presented me with a professional development opportunity that proved to be a tremendous personal challenge. I received orders to become the director of war-fighting integration in SAF/XC, the communications and computers directorate in the Pentagon. The SAF/XC job piqued my interest in this fascinating new domain through which we project airpower in defense of our nation.

This interest is what inspired me to select *Cyber War* as my first book off the Chief's 2011 Reading List. Former White House national security coordinator Richard A. Clarke and Council on Foreign Relations international security fellow Robert K. Knake have written a book that is remarkably readable and remarkably relevant. I highly recommend this fine work to anyone who wants to learn more about "the next threat to national security and what to do about it."

There are three big takeaways in this book. First, and perhaps most significant for the citizenry of this country to comprehend, is the fact that cyber war is so much more than just a military security matter; it is a genuine national security issue that demands a fully coordinated "whole of society" strategy, one developed and executed by all the key players in government and the private sector. The authors rightly acknowledge the challenges posed by any governmental role in dealing with private-sector vulnerabilities, but they come down hard on the side of increased federal regulation in a domain originally conceived and birthed as open and free. While any proposal for more government involvement often generates potent antibodies among those associated with both ends of the political spectrum, Clarke and Knake present a compelling case that is worthy of further debate.

The second big takeaway is the authors' "hard to argue with" assertion that cyber war presents a greater threat to our United States than it does to any other nation. This observation flows naturally from the recognition that cyber dependence equals cyber war vulnerability. From sea to shining sea, people enjoy the ease and power of e-mail, Google, Facebook, and other "net goodies" to be found in fluffy, friendly cyber clouds. But as Clarke and Knake note, we have critical infrastructures throughout the 50 states and US territories that are frighteningly net dependent with no non-net backups; their main concern being (say it with me; say it loudly; let me hear you say it; all together now) our nation's electric power grid. (Peruse the last chapter to appreciate the aforementioned parenthetical comments.)

The third big takeaway is the most sobering of all. The cyber problem set is evolving more rapidly than the cyber solution set. Put another way, we lag behind, and are falling even further behind each passing nanosecond, due to the lightning-quick pace of change in the information age. As you turn the pages in *Cyber War*, this reality will eventually sink in and drive you to beg for answers to the question “So what can we do about it?” And that is where the authors do not let their readers down. Clarke and Knake propose an innovative six-step agenda to address this rapidly emerging national security threat.

That agenda begins with a call for open, informed public dialogue about cyber war, or as the authors describe it, “thinking about the unseeable.” Because this threat is not as visible as a Cold War mushroom cloud or a hot war attack by terrorist-piloted airplanes, cyber war is something that some people would rather not think or talk about. But just as “hope is not a strategy,” neither is “wishing it away.” The second step defines a defensive triad that focuses on securing the Tier 1, or backbone, Internet service providers (ISP), the electric power grid, and the Defense Department’s networks and cyber-dependent weapon systems. The third step advocates a more aggressive approach to combating cyber crime. When one contemplates a “fee for service” use of the tools of cyber criminality by, say, the perpetrators of 9/11, one fully understands why this particular step is on the agenda.

The fourth “must do” is adoption by the United Nations of a cyber war limitation treaty. Clarke and Knake detail what the first CWLT would look like, but I leave that for you to discover on your own. Suffice to say, this proposal recognizes the importance of some form of international agreement on behavioral norms in the cyber realm. Step five simply highlights the need for research on more-secure network designs, with an emphasis on tomorrow’s software fixes for today’s software glitches that make us so vulnerable to cyber war. The sixth and last step reemphasizes the authors’ earlier observation that cyber war is a *national* security threat that demands presidential involvement. Entitled “It’s POTUS,” this final section concludes with some proposed remarks for our president to deliver at a future UN General Assembly session. As Clarke and Knake conclude, “It could be a beautiful speech, and it could make us safer.”

Cyber War also includes an interesting discussion on rethinking deterrence strategy. The interesting twist is that the authors focus less on the oft-mentioned attribution difficulties and more on the challenges associated with achieving a cyber “demonstration effect” similar to that provided by nuclear tests during the twentieth century. Such a demonstration effect would serve to underscore both key ingredients of successful deterrents— capability and will—but may not be feasible in the cyber era.

Clarke and Knake also describe the importance of “resilience” in the face of cyber attack. I found this portion particularly interesting in light of what I perceive to be an encouraging shift in DoD strategy away from a “Maginot Line” defense mentality toward a mind-set of “mission assurance.” Interestingly, this new idea for handling cyber war mirrors a concept we still exercise in operational

readiness inspections when under simulated attack from nuclear, biological, chemical, and other life-threatening weapons—a concept known as the “ability to survive and operate.”

Whether you consider yourself an expert or a novice, you will find *Cyber War* to be informative and well worth your time. While the contents are alarming, I do not believe that the authors are alarmists. Richard Clarke and Robert Knake have issued and justified a strong call for action. It is a call which I believe our great nation ignores at its own peril.

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National Security Dilemmas: Challenges & Opportunities by Colin S. Gray.
Potomac Books, 2009, 334 pages, \$60.00.

Clausewitz was right: war is the province of uncertainty and chance. The future is unpredictable. Politics is or should be the driver of strategy and, in turn, military planning. The United States is seriously deficient on that point. It is excellent at the tactical and operational level in regular warfare but wanting in connecting strategy to policy and in counterinsurgency theory and doctrine. Further, the United States is guilty of presentism and not much given to the study of the historical bases of strategy and defense planning. Those are some of the ideas common in Colin Gray’s recent writing and teaching, and they are presented in convenient form in his *National Security Dilemmas*.

Prof. Colin S. Gray is too well known to most readers of *Strategic Studies Quarterly* to require much introduction. He has been a frequent lecturer at many of the US war colleges and staff schools and is well published in some of our most prestigious academic journals, such as *Foreign Affairs* and *International Security*. One of the leading (perhaps the leading) strategic thinkers in the West, his published books are many. Further, Dr. Gray has long served as a consultant for many defense agencies here and in the United Kingdom. His undergraduate degree is in economics, and he holds a doctorate in international politics from Oxford. He is a professor at the University of Reading, England.

Several chapters of *National Security Dilemmas* are based on previous research Gray did for the Army’s Strategic Studies Institute. That leads to some redundancies here and there, but each chapter is engaging in its own right. One of the most interesting is about the definition of victory. Impatient Americans are often distressed about outcomes because they are not the smashing outcomes like those of World War II. However, Gray makes the valid point that there are many degrees of “victory,” especially if keeping in mind that the goal of war is a better peace. Sometimes even a smashing victory does not result in an improved state of peace, while somewhat lesser achievements on the battlefield *can* improve a state’s situation. Gray cautions against the American tendency to

worship technology, for there are many other factors that can affect outcomes. He repeatedly argues that the incredible complexity of war makes it dangerous to count too heavily on any one of its dimensions—and that surprise in war is not surprising.

Perhaps the most informative chapter is “Maintaining Effective Deterrence.” It argues that in many situations, that *should be* the strategic choice and that many different dimensions of military power can deter—including land power. A common notion has been that deterrence can work in state-on-state conflict but that terrorists are undeterrable. Gray concedes that some terrorists may indeed be beyond reach but holds that deterrence can affect others. One problem is that regular war and irregular war are often seen as polar opposites. Gray argues that they are not. Many wars contain elements of each, and there are various mixes between the extremes—and deterrence can have an effect at many levels. It is fundamental that the ultimate decision in deterrence rests in the minds of the deterred, not the deterrers. That, along with cultural and psychological differences, makes it exceedingly difficult to predict outcomes—or to prove whether deterrence worked in any given instance.

National Security Dilemmas also deals with insurgency. That is not an area of excellence for the US military, but Gray argues that it can be mastered. He also points out that since the future is unknowable, it would be improvident to put all our defense eggs into the counterinsurgency (COIN) basket. He does not think that the “Long War” will go on forever, and in any event the national existence is not threatened by the terrorists—though an overreaction to the threat could wreck us. In short, competency in irregular warfare must become an important element in our military, but it should not dominate. State-on-state war is a possibility in the future, and that *can* threaten our national existence. Incidentally, Gray does not think that a nuclear-free world is a practical possibility, and he says that proliferation is practically certain to continue. Gray also sensibly argues that the United States needs to be careful in deciding when to engage in COIN. Some conflicts would be unwinnable, and others simply would not be worth the effort. One of the redundancies found in the book has been his treatment of the distinction between war and warfare. This is especially important in COIN, because war includes all the instruments of national power but warfare is the conduct of war by mostly military means. As the objective in COIN is typically not the insurgency’s military force but rather the hearts and minds of the civilian population of the area in question, the lethal part of COIN should be subordinate.

For the aspirant strategist, Gray’s work is a treasure chest. His treatment of preemption versus preventive war is golden. Preemption is entirely legitimate and necessary in his mind. However, preventive war is often wrongly labeled as preemption and should be approached with extreme caution—precisely because war and politics are so unpredictable. In the case of preemption, the decision for war has already been made by the prospective enemy, but preventive war is a choice for the political leadership. It can and has led to disaster when predictions

turn out to be false—Hitler’s prediction in 1941 that the USSR would collapse like a house of cards with the first kick on the front door!

Some readers are already quite familiar with the works of Colin Gray. For them, *National Security Dilemmas* would be a fine review. For the rest, the book should be near the top of our reading lists—perhaps at the top. There are many more nuggets in this treasure chest than can be explored here.

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Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century by Roger Cliff et al. RAND, 2011, 306 pp., \$29.00.

In *Shaking the Heavens and Splitting the Earth*, Roger Cliff and a team of five RAND Corporation scholars examine the People’s Liberation Army Air Force (PLAAF) and what its rise means for the United States. Cliff, who holds a PhD in political science from Princeton University, is currently a senior political scientist at RAND and a leading voice on Chinese military matters. While much has been written in recent years on the material side of the Chinese military buildup, this book addresses the unanswered question of how exactly China would employ its arsenal if war were to erupt. The answer, of course, is necessarily a nuanced one.

Shaking the Heavens portrays a Chinese air force in a state of wholesale transformation. What was only decades ago an outmoded, underequipped, and inexperienced institution is now on the fast track to becoming one of the world’s preeminent air forces. While for the most part it remains untested in battle, institutional changes have been stark. As recently as a decade ago, PLAAF pilots flew almost exclusively 1950s-era Soviet aircraft and completed less than 100 hours flight training annually—and what little training took place was performed almost exclusively in favorable weather conditions. Today, pilots train hard—upwards of 200 hours per year, rain or shine—in some of the world’s most sophisticated aircraft. Projecting forward just one decade, the RAND team tells us that “the capabilities of China’s air force could begin to approach those of the US Air Force (USAF) today.”

That this is a transformational moment for the PLAAF is by no means a new or even controversial assertion, but it is one too often supported only anecdotally—for example, that China has in recent years begun indigenous production of fourth-generation fighters and a fifth-generation upgrade appears to be only years away. But air forces do not thrive on cutting-edge technology alone—even the fanciest toys must be flown by skilled and experienced pilots, supported by efficient institutions, and incorporated into command and control systems capable of translating raw firepower into readily employable war-fighting doctrine. It is in fleshing out these latter dimensions of Chinese airpower that *Shaking the*

Heavens positions itself prominently amidst leading literature on the Chinese military.

Such literature is increasingly vital as China becomes ever more assertive—even prickly—about territorial disputes with neighbors. As has been the case since the early 1950s, the most likely military conflict between the United States and China would relate to Taiwan. As part of RAND's Project Air Force, a partnership between the think-tank and the US Air Force, *Shaking the Heavens* is written with an eye toward preparing the USAF for just such a military conflict. And it may have a great deal to prepare for. Not only can Chinese ICBMs reach a sizeable portion of the United States, but the very bases that protect our western flank sit within range of a growing battery of Chinese rockets. The final chapters of *Shaking the Heavens* offer some timely, practical advice to US policy-makers about how best to respond to this mounting threat.

Par for any RAND publication, an immediate strength of the book is the rich source material found in its bibliography. The research team mined more than 20 Chinese military publications, offering many in the English-speaking world a first-ever look at PLAAF doctrine. For linguists and analysts of the Chinese military, here is where the true treasure lies. While literal translations work well for common words like “fighter aircraft” (*zhan dou ji*) or “missile” (*dao dan*), one must painstakingly pour over source material to pick up on important nuances in the more nebulous realm of doctrine. *Shaking the Heavens* does this for us.

For an answer to thorny questions of terminology, the RAND team has turned quite sensibly to authoritative sources like the *China Air Force Encyclopedia*, which the PLA published in 2005. In one place, for example, we learn how an “offensive air campaign”—which can mean 10 different things to 10 different militaries—might be carried out by the PLAAF. In another, we are given a detailed explanation of the cryptic Chinese military concept of “hide the real and show the false, conceal the attack against the defenses.” This type of linguistic analysis provides an important step forward in open-source Western literature on the Chinese military—as it transitions into a more sophisticated fighting force, our understanding about it must become more sophisticated, too.

One weakness of the book—if it may be called that—is an unavoidable one: heavy reliance on Chinese publications is a double-edged sword. Traditional Chinese military strategy emphasizes deception—as Sun Tzu counseled, “When deploying troops, appear not to be; when near, appear far; when far, appear near.” Reliance on sources like the Chinese National Defense University and the *China Air Force Encyclopedia* risks taking the bait. This point is certainly not lost on the RAND team, and they appropriately warn readers that methods used to develop an open-source book carry a certain amount of risk. But this is a strength too: at the very least, this book does the best job possible describing how the Chinese government *claims* it will put its air force to use.

All in all, this is an excellent resource for those with a serious interest in the military side of China's rise. The heavy emphasis on defining military terms makes it less appropriate for recreational reading or as a primer on the PLA.

But by placing such heavy emphasis on core doctrinal concepts and by getting terminology straight, we now have essential reading for anyone who wants to understand the PLAAF in its upcoming era of global prominence.

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Rivals: How the Power Struggle between China, India, and Japan Will Shape Our Next Decade by Bill Emmott. Mariner Books, 2009, 352 pp., \$15.95.

Bill Emmott's *Rivals* preceded the recent flurry of publishing on the rise of China and India, which included Robert Kaplan's *Monsoon: The Indian Ocean and the Future of American Power* and Henry Kissinger's *On China*. Acknowledging the perils of predictive writing, this 2009 paperback edition of *Rivals* contains a foreword updating Emmott's conclusions (originally published in 2008) in light of the Great Recession and the then-recent election of President Obama. The author, an English journalist and former editor in chief of the *Economist*, has published several earlier books about Japanese business and politics. *Rivals* uses historical events, personal anecdotes, and economic data to envision the future of a region defined by rivalry among ascendant China and India as well as a declining but still powerful Japan.

Emmott introduces his theme with a discussion of the US-India Civil Nuclear Agreement of 2005, in which President Bush agreed to sell nuclear fuel and technology to India outside the framework of the Non-Proliferation Treaty. He compares this departure from Bush's counterproliferation objectives to Nixon's courtship of China as a counterweight to the USSR. *Rivals* argues that more than the global war on terrorism, "the most important long-term trend in world affairs does indeed remain the shift in economic and political power to Asia" (p. 7). The author supports this contention with a number of economic statistics, the most telling of which is the 6 percent rise in Asia's share of world gross domestic product (GDP) since 1990. (Other regions lost ground or maintained their share.)

The second chapter gives an account of Asian integration—in terms of ideology, markets, and diplomacy—since the nineteenth century. According to Emmott, to the extent that any pan-Asian ideology has succeeded as a motive force, it is "economic development and the accompanying reduction of poverty" (p. 33). He traces the history of Asian economic development through the "flying geese" construct: postwar Japan became an economic powerhouse through export-led trade followed within two decades by the Four Asian Tigers and then Thailand, Malaysia, and Indonesia—and eventually Deng Xiaoping's China. Chapters 3–5 offer an in-depth look at the recent past and the foreseeable future of China, Japan, and India, respectively. Japan will have to deal with an aging population and increasing pressure to amend its pacifist constitution to

permit greater military preparedness. In the cases of China and India, the common denominator is that even if the most optimistic forecasts prove accurate, rapid growth can be as socially destabilizing as economic decline. Chapters 6 and 7 examine two different pitfalls for the region as a whole—the disputed politics of climate change and the long shadow of Asia’s own history.

Chapter 8 looks at five potential conflict “flash points” throughout the region. The author emphasizes each major player’s incentives for seeking stability, noting that the region is home to four states possessing nuclear weapons. Nonetheless, unpredictable future events could lead to conflict in one or more of these areas—for example, a crisis related to the succession of the Dalai Lama or the next leader of North Korea. Indeed, some commentators attributed the artillery bombardment of Yeonpyeong Island by North Korea in November 2010 to succession-related saber rattling. Emmott’s final chapter offers nine policy recommendations for securing the peaceful growth and integration of Asia. They include continued American support for India, greater diplomacy between India and its immediate neighbors, and US support for the East Asian Summit and the Association of Southeast Asian Nations Regional Forum as the primary regional vehicles for economic and security cooperation, respectively (in order to supplant several ineffective and duplicative forums).

Rivals is well served by Emmott’s extensive experience in the region. Unlike the other works mentioned earlier, Emmott’s appropriately emphasizes the importance of Japan. China has passed that country since the book’s publication to become the second-largest economy in the world, but Japan remains still a close third. More importantly, China and India are still impoverished. They both lag far behind Japan (and the world average) in terms of GDP per capita. Japan will remain an important diplomatic and economic player for some time, and the author does a good job sketching out what that country’s best-case scenario might look like. The governmental bureaucracy will have to continue to reform (Emmott uses the phrase “‘rule by law’ rather than ‘rule of law’” to describe the bureaucracy at the height of its power, prior to the financial crisis of the 1990s), with “scarce labour [providing] a new source of discipline” (p. 115) for the private sector. As American influence declines, Japan will also have to mend its relationship with South Korea and consider expanding its military.

Readers must understand that *Rivals* is a work of long-form journalism rather than political science as such. In his discussion of Asia’s conflict flash points, Emmott chose not to engage a wealth of theoretical literature about the causes of war—an unfortunate choice because some of it (e.g., Charles Doran’s power cycle theory) seems tailor-made for assessing potential conflicts between established declining powers and newer ascendant ones. Furthermore, events have already supplanted some of Emmott’s analyses. For instance, he argues that a G14 or G20 should replace the G8 to give China and India a seat at the table (p. 264). This has since occurred, but the G20 has proven no more successful at promoting freer trade and financial stability than its predecessors.

This well-written book offers extensive insight into a region that is rapidly becoming a central concern to all airmen. Although Kaplan and Kissinger have trod similar ground in more recent books, only *Rivals* can claim a career Asia specialist as its author. Its ground-level perspective and economic focus more than earn it a place alongside the others.

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Communication in China: Political Economy, Power, and Conflict by Yuezhi Zhao. Rowman & Littlefield, 2008, 384 pp., \$29.95.

Yuezhi Zhao's *Communication in China* is a study of how recent social changes have influenced China's communication industry. An associate professor in communication at Canada's Simon Fraser University, Zhao's specialty is the study of political economy and communication. Her previous work, *Media, Market, and Democracy in China*, explored the Chinese media's relationships with the Communist Party governing apparatus, capitalism, and political liberalization. Her new book takes a broader perspective.

In *Communication in China*, Zhao examines the interplay between the communication system, the "party-state" government, and Chinese society during a period of massive change caused by accelerated market reforms and China's reintegration with the world economy following its accession into the World Trade Organization in 2001. She begins by discussing the litany of government institutions and how their policies impact the media. At the top of this complex pyramid lies the Propaganda Department. Responsible for censoring and disciplining the media, this department provides "guidance" on how media outlets should report on particular events. Such institutions exist to ensure that the Communist Party maintains control over the media. Though often perceived as a monolithic entity rigidly enforcing specific policies, Zhao reveals that the Propaganda Department's "party line" actually shifts (sometimes drastically) according to current political priorities and understanding of developing situations. In one blogger's words, the party line is "not a straight line, but an ever-changing and hard-to-grasp curve" (p. 25).

The party also maintains its control over the media through a dynamic, adaptive system of personnel control and certification, prepublication review, and postpublication monitoring. But with the decentralization of the communication industry resulting from globalization, Zhao argues that the party has also decentralized control and attempted to minimize political costs in two ways: passive censorship (e.g., internal media bans, quietly alienating subversive writers) and private media outlets' self-censorship (i.e., in trying to outcompete their rivals, they seek to avoid costly punishment levied by the party). Zhao explains

that China's sophisticated censorship system reflects the party's deep-seated fear of social unrest.

Despite the Communist Party's obsession with maintaining social control throughout the communication industry, some in the domestic media have stirred up controversy by walking the line between what is permitted and what is prohibited. As an example Zhao tells the story of Sun Zhigang, who died in the custody of corrupt police and whose story was reported in the *Nanfang Metropolitan News* in 2003. The paper eventually expanded its "critical commentary into more critical realms of Chinese social life, cultivating a professional culture and a liberal editorial orientation that has pushed the boundaries of what is politically permissible" (p. 252). The *Nanfang Metropolitan News* and other print and Internet media have cautiously expanded their journalism to cover such previously taboo topics as "civil rights, economic and social rights, the rural-urban divide . . . and China's rapidly emerging and consolidating legal system" (p. 245). The *News* again flaunted party censorship regulations by publishing stories highlighting the dangers of the 2003 severe acute respiratory syndrome outbreak.

However, challenging party control of the media comes at a price—the *Nanfang Metropolitan News* faced hostility from the local authorities who bore the brunt of the paper's criticism. The newspaper's top three executives were arrested after local authorities investigated the paper's practice of awarding bonuses to its employees (two were sentenced to lengthy prison terms). Zhao uses the *News* and other stories to emphasize "the rise of business and mass appeal media outlets and the decline of traditional national and provincial party organs" and that these events are "part and parcel of the *transformation* of the party and its communicative relationships with Chinese society" (p. 80).

The emergence of a powerful communication industry in Chinese society is perhaps the most important result of China's social transformation. In response, the Communist Party has continued its "dual objectives of sustaining economic growth and maintaining its hegemony by securing the 'commanding heights' of a reconstructed communication and culture sector" (p. 121). Zhao concludes that China's communication industry has "never been so central to the processes of political legitimation, capital accumulation, social relations restructuring, and cultural transformation" (p. 339). It is through the media that social forces, from the Communist Party to private corporations, are battling to assert their will on a very complex, divided Chinese society that has experienced—and will continue to experience—significant and rapid change.

Though her analysis emphasizes the communication system, Zhao places it within the broader context of Chinese social relations, articulating how communication affects politics and economics as well as how politics and economics affect communication. Ultimately, *Communication in China* reveals China's greatest contradiction—a nominally socialist, single-party authoritarian state that has embraced capitalist open-market economic reforms while avoiding an open society. This tension has unleashed a "struggle between competing bureaucratic

interests, divergent social forces, and different visions of Chinese modernity” (p. 11).

Intended mainly for media and communication scholars, Zhao’s book is sometimes a slow, dense read but always filled with interesting facts and information. For military professionals, *Communication in China* is most relevant for anyone working on strategic-level policy issues concerning China and East Asia. In particular, understanding the dynamics of communication systems is vital for specialists in information operations. After reading *Communication in China*, military professionals and policymakers will be better prepared for anticipating and dealing with Chinese behaviors, attitudes, and opinions.

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Allies of the State: China’s Private Entrepreneurs and Democratic Change by Jie Chen and Bruce J. Dickson. Harvard University Press, 2010, 171 pp., \$45.00.

Accurate and unbiased surveys are notoriously difficult undertakings in China, particularly for researchers in search of agents of political change and challenges to the Communist Party’s unilateral grip on power. Yet *Allies of the State*—the product of a two-year survey conducted in five Chinese provinces—captures a compelling snapshot of the political leanings of Chinese entrepreneurs, commonly thought to be China’s most likely source of democratization. Scholars have long speculated that China’s growing economy will create a middle class that will in turn demand democratic reform. Authors Chen and Dickson, however, offer good reason to question such conventional thinking: Chinese entrepreneurs, it turns out, tend to support the status quo. Rather than a force for change, the emerging Chinese middle class might be a force for stability, preserving communist one-party rule. For it is under communism that China’s nouveau riche have flourished.

This is first and foremost an academic work, written in the style of a seminar textbook tailored to an audience trained in sociological research methodology. Political scientists by training, Chen (Old Dominion University) and Dickson (George Washington University) originally published their findings in the academic journal *China Quarterly* in 2008. *Allies of the State* follows the traditional scholarly script, beginning with a comprehensive review of related research in the field, followed by carefully defined terminology and a discussion about the limitations of research methodologies used. Buried within dense formulae and rhetoric, however, are nuggets of insight of great interest to any self-professed China hand.

The background for this book lies in China’s three-decade-long rise from Maoist self-destruction to economic and geopolitical juggernaut. Deng Xiaoping is rightly credited with transitioning China away from the caustic anti-capitalism

of the Mao era toward support for enterprise and the private economy. During the 1980s, under Deng's stewardship, the party permitted special economic zones to "take the lead in getting rich" in a number of southeastern provinces, allowing freer access to international markets and relaxing state controls over pricing, taxation, and production quotas. These southeastern provinces experienced meteoric economic growth over the subsequent decade, prompting Deng's successor, Jiang Zemin, to maintain the heading toward increasingly open markets. Private firms in China increased from 90,000 in 1989 to over 1.5 million in 1999, and the state sector shrank from 77 percent of economic production in 1978 to only 33 percent by 1996. Recognizing the business community's growing clout, in 2001 the party officially amended its rules and began openly recruiting "capitalists" into its ranks. How this will impact China's future stands as one of the central issues for China analysts.

Allies of the State is an attempt to quantify several aspects of this impact. The Chen-Dickson survey asks and answers four main questions: How "embedded" are Chinese capitalists in the political system, how much do they support democracy, how much do they support the current regime, and in what type of political activities are they involved? The authors draw several conclusions worthy of emphasis. First, while entrepreneurs are entering party ranks in record numbers, survey results suggest that "the party-state carefully screens those who are allowed to participate and uses access to formal institutions as a means of generating political support." Co-opting the business community enables party elders to quiet any threat to one-party rule. But co-optation might not even be necessary: only 28 percent of respondents favored multi-party competition, and only 13 percent opposed the current one-party dictatorship. Rather than a threat to the Communist Party, respondents expressed a strong inclination to preserve and reform the one-party system. Approximately 80 percent of private entrepreneurs supported democratization of the party itself, favoring one-party, multicandidate elections at both local and elite echelons of government.

Chen and Dickson are not the first to caution that economic growth will not necessarily serve as a path to Chinese democracy. One example from Margaret Pearson, predicted a high level of regime support among Chinese entrepreneurs in her description of China as a "socialist corporatist" system. This work should be viewed as a partial vindication of scholars like Pearson. As Chen and Dickson freely acknowledge, however, the survey was limited to five provinces, all of which can be found in the more affluent southeastern region of China in which economic reform has been most robust in recent decades. Further research in other regions is now needed to complete the picture—51 provinces remain to be tested. One wonders, how would entrepreneurs in Tibet and Muslim Xinjiang respond? And would western provinces like Sichuan, where economic reforms were more slowly implemented, be as satisfied with preserving the one-party system? Such questions illustrate why Chen and Dickson's work is best under-

stood as a benchmark for future study—the foundation for an upcoming generation of sociological fieldwork in China.

At the time of this writing, it is perhaps fitting that a cover story for *The Economist* would warn of a coming era of Chinese corporate takeovers. Chinese entrepreneurs have quickly learned to excel in the world of international business by adopting best practices—not by radically altering the way international business is conducted. Perhaps one might expect the same at home: will Chinese entrepreneurs tear down the very domestic political system in which they are beginning to thrive? Or, as *Allies of the State* suggests, will they hold true to form, join the party, use it for personal gain, and make it stronger than ever? The beginning of an answer lies in this book. Those looking to foretell the future of Chinese politics will find Chen and Dickson's work essential reading. But beware: like all good analyses, this book answers some questions but raises even more.

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Arms Control and Cooperative Security edited by Jeffrey Larsen and James Wirtz. Lynne Rienner Publishers, 2009, 288 pp., \$24.50.

Arms Control and Cooperative Security takes the reader on an engrossing journey which begins by outlining historical attempts at arms control prior to the radically new environment created by the disintegration of the monolithic Soviet threat, the explosion of globalization, and the events of 11 September 2001, which shattered America's cozy, albeit naïve, sense of security. The book is an able attempt to demonstrate how old disarmament and nonproliferation regimes, intended to reduce tensions and the possibility of misunderstanding and miscalculation, were reasonably effective but are now outmoded for a much more complex, globalized environment. Many new players, unimagined, or simply ignored under the bipolar paradigm, now populate the international landscape. Globalism—represented by the ubiquity of the Internet, the dissolution of border controls, the growing influence of multinational corporations, transnational movements, nongovernmental organizations (NGO), the increasing challenges that can only be addressed via global cooperation, and so forth—has, in effect, democratized, expanded, and leveled the playing field so that any determined actor, group, or state can now get into the proliferation business—cheaply. This possibility simply did not exist a generation ago. Due to this paradigm shift, the United States has moved away from more-traditional venues for controlling the spread of weapons of mass destruction (WMD) toward initiatives that may, in fact, perform better than more formal regimes that have serious flaws: the amount of time it takes to reach agreement and the difficulties associated with verification and compliance enforcement.

The editors have done a solid job bringing together some of the best minds in the field of arms control. Jeffrey Larsen's brief introduction serves as a useful kickoff for the discussion. In James Smith's succinct history of arms negotiations, he insists arms control will never be dead, despite what naysayers would have us believe. Acknowledging that the current environment is far more complicated, he contends there remains great value in making arms control efforts a significant part of US national security strategy. Kerry Kartchner, describing the evolving international context, proclaims the old arms control paradigm is dead, mainly because it was fatally flawed and those flaws are only magnified by the "new" paradigm confronting strategists today. And yet, he remains hopeful about the future. Noteworthy is the credit he bestows on "Bush 43" operatives for recognizing the changing dynamic and working toward more viable solutions to emerging proliferation problems. He applauds that much-maligned administration for staying ahead of the curve. Jennifer Sims tackles the convoluted domestic political front and the impact it has on the arms control process in a straightforward fashion that delves into the roots of American exceptionalism, evolving unilateralist tendencies (manifested most unashamedly during George W. Bush's watch), and how the growing dissonance between the United States and traditional allies regarding the strategic horizon fuels those developments. Forrest Waller delivers an excellent synopsis of past arms control negotiations before smoothly transitioning to an examination of promising future possibilities. His work dovetails nicely with Leonard Spector's argument that, for all its flaws, the Non-Proliferation Treaty (NPT) and similar constructs still have utility. In essence, we should avoid "throwing the baby out with the bathwater" and, instead, combine elements of legacy regimes with more-innovative and effective programs enabled by technology and overall improvement in state-to-state relationships in the wake of the Cold War.

Michael Moodie's "Regional Perspectives on Arms Control," is largely devoted to "lesser" concerns (small arms and light weapons, for example). The fact is, these "lesser" concerns enjoy center stage in countries and regions that simply do not worry much about more "titanic" issues. In struggling Third World states, the focus is local rather than global. Undoubtedly, regional concerns are important issues in their own right; however, the discussion is less captivating to this American reader because the underlying issues seem more intractable. Lewis Dunn's contribution identifies various "tools" in the cooperative security tool bag that can be leveraged to decrease misinformation, miscalculation, accidents, and tension. These include strategic dialogue and the exchange of information and data; liaison arrangements; joint endeavors; unilateral and reciprocal actions; and traditional arms control agreements. The inherent value of these "tools" is not always obvious to the casual observer, but they can be extremely cost-effective compared with prohibitively expensive armaments, and, in many cases, more effective at achieving political and strategic goals, chief among them security. Due largely to its placement, Guy Roberts' "Beyond Arms Control: New Initiatives to Meet New Threats" pre-

dictably repeats many points mentioned earlier. It would be a fine stand-alone piece, but sandwiched as it is near the end, it only serves to reinforce the ideas of authors with the good fortune to precede him. Rebecca Johnson's decidedly anti-Bush tone conveys the message that universal norms regarding arms control and nonproliferation efforts stand a far better chance of being successful than formal treaties that institutionalize discrimination based on relative power.

James Wirtz's compact conclusion reemphasizes the common thread running throughout: The world has undergone radical change in a flash; going forward, collective efforts—on a scale of magnitude far greater than heretofore—are required; creative solutions, dependent upon rigorous cooperation are needed, if present and future efforts are to succeed.

This volume is a valuable primer for those unfamiliar with the field and a handy and concise resource for those more in tune with the realities of arms control in the new century.

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A Contest for Supremacy: China, America, and the Struggle for Mastery in Asia by Aaron L. Friedberg. W. W. Norton, 2011, 360 pp., \$27.95.

In *A Contest for Supremacy*, Princeton professor and former deputy assistant for national security affairs in the Office of the Vice President, Dr. Aaron Friedberg, provides an extensive overview of US-China relations from the birth of the People's Republic of China (PRC) to the present. He describes the policies of both countries over this 60-year period and provides policy recommendations for moving forward. Friedberg's contention that the United States is underreacting to the growing threat of China and should enhance the balancing aspects of its hedging policy places his book clearly in the hawkish camp of literature on China's rise.

Friedman begins with the premise that "the United States and the People's Republic of China are today locked in a quiet but increasingly intense struggle for power and influence not only in Asia but around the world." He puts forth seven factors that are important in shaping the evolution of Sino-American relations. The first two—a narrowing gap in national power and differences in ideological/political systems—tend to push the two countries toward competition. The effects of the latter five—economic interdependence, democratization of China, China's integration into international institutions, common threats, and the existence of nuclear weapons—are favorable for cooperation and peace.

Throughout the book, Friedberg argues that the first two factors are stronger and more deeply rooted than commonly believed. He lobbies for the United States to engage in "better balancing" by working with friends and allies through various bilateral and "mini-lateral" groupings toward "maintain[ing] a margin

of military advantage sufficient to deter attempts at coercion or aggression.” Though the rise of China will inevitably limit US foreign policy options, competition alone does not warrant the degree of concern this book encapsulates. Though used somewhat interchangeably therein, *rivalry* and *competition* are different, with the former being much more severe in its implications for US national security. Furthermore, if Friedberg is correct that the essential currency in international politics is hard power, then the United States still has plenty of room to breathe.

Second, Friedberg argues that only the democratization of China has the potential to push both countries along a peaceful trajectory. He relies too heavily on domestic political systems to explain and predict future Chinese behavior. The idea that democracies are less inclined to fight each other is conventional wisdom in both academia and the policy realms. But as Friedberg points out, conventional wisdom has failed to apply to China in many cases, most notably the failure of economic openness to spark political reforms. The assumption that a democratic China that dominates the region would protect US interests is a dangerous one.

A more valid starting point for any strategist is to accept Friedberg’s argument that tension exists in the relationship, not because of miscommunication or misunderstanding but because of a fundamental divergence in interests. Again, Friedberg believes the nature of China’s political system is at the root of Washington’s distrust. I am less optimistic, however. American anxiety is fundamentally about losing its primacy; the United States was once quite concerned about the economic rise of Japan, a democratic country with no chance of supplanting the United States as a global power, given its size and limited resources. If China’s alleged desire for dominance and control is the by-product of the political system over which it presides, where does America’s desire come from? In other words, democratization of China is not necessarily the panacea Friedberg makes it out to be. Not only may it do little to change Chinese interests (China will most likely continue to view the United States as the biggest and most dangerous obstacle to its passage from weakness to strength), but it also may fail to change US perceptions of the threat.

Regardless of how he got there, Friedberg is fundamentally correct in his warning that to manage the rise of China, we have to get our domestic house in order. But macro-level dynamics are involved that lay outside the control of any political elite. A great part of the American public is indeed exhausted by war and eager to disengage in world affairs. Friedberg is also correct that a change in American savings and consumption is necessary to ensure the United States is not deeply indebted to any one country, especially one that may emerge as a geopolitical rival. We have not devoted as much time and energy to the region as it deserves, but given current security challenges and the health of the US economy, it is difficult to visualize how any administration could substantially change the course of US policy.

There is no doubt that we are at a pivotal point in history with respect to relations with the PRC. Because of China's strategic importance and current anxiety over the decline of US comprehensive power, strategists feel compelled to come up with a clean and simple grand strategy to help navigate the ever-changing international system. But the presence of so many unknowns makes strategizing a difficult task. What does China want? How are the economic and political systems in China going to evolve, and how will these affect Chinese strategic objectives? How are our own politics and positions going to change with economic challenges and changes in leadership over the next decade?

Friedberg does the reader a great service by outlining alternative futures for China and breaking down how US policy should change to adapt to different scenarios. Readers with a military background will find chapter 9 on the dimensions of the military rivalry of the greatest interest. However, anyone seeking a general understanding of the assumptions underlying US-China policy and what lies ahead will find *A Contest for Supremacy* well worth the read.

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Taiwan's Statesman: Lee Teng-hui and Democracy in Asia by Richard C. Kagan.
Naval Institute Press, 2007, 231 pp., \$26.24.

While the number of English-language biographies of Asian leaders is growing, they remain too few. This biography of Lee Teng-hui, the first directly elected president of Taiwan, by Richard C. Kagan, a self-avowed friend of Taiwan, is an important contribution to the study of Taiwan's political development over the past 25 years. Kagan, a historian at Hamline University in Minnesota, is well positioned to write on this topic. His relationship to Taiwan dates from the mid 1960s when he attended the Stanford Center at National Taiwan University and befriended many of the intellectuals who are active in Taiwan's politico-cultural life.

Lee Teng-hui occupied a unique position in the history of postwar Taiwan. A native Taiwanese who benefited from Japanese largesse in educating its subjects—Taiwan was a Japanese colony from 1895 to 1945—Lee was able to develop a cosmopolitan view of the world at a time when prospects for most Taiwanese were dim. Subsequently, he attended Cornell University to pursue doctoral studies in agricultural economics. Upon his return to Taiwan, he was quickly noticed by the nationalist party, Kuomintang (KMT), which allowed him to progress gradually into its higher ranks until Chiang Ching-kuo, the son of Chiang Kai-shek, made him his vice president, a radical move in this mainland China-dominated government.

Kagan's distinct contribution is in highlighting the various influences on Lee's worldview, including Zen, Christianity, and, perhaps most of all,

Japanese culture. Christianity appears to be an underreported phenomenon in the lives of the Taiwanese. In addition to Lee, both Chiang Kai-shek and Chiang Ching-kuo were Christians. While Christians are a relatively small minority, they often include prominent members of the community. Lee's faith extended to providing sermons in the community throughout his life.

Still, Japanese culture appears to have overshadowed other influences in Lee's heart, if not in his mind. His studies in Japan during the war put him in touch with Zen Buddhism as well as its prominent promoters, notably Nitobe Inazo (1862–1933) and D. T. Suzuki (1870–1966) through his readings. He credits them for shaping his antimilitarist views as well as the importance of maintaining one's unique culture in a pluralist world. These ideas would later clash with Lee's perceptions of Communist China's aggressiveness toward Taiwan.

Kagan's biography is less successful in explaining how these influences blended to shape Lee's personality. How does Zen Buddhism cohabit with conservative Christianity? And how does one justify one's love of Japanese culture in the eyes of compatriots who may have been victims—as many were—of Japanese colonialism?

Here is where Kagan's case is least convincing. Readers may not be entirely convinced that Lee was a genuine Taiwanese nationalist. Neither are some of the other Taiwanese patriots, as reported by Kagan. Lee spent his early childhood under Japanese colonial rule and subsequently studied in Japan, thanks to a scholarship. His love of Japanese culture is not in question; he learned to speak and read Japanese fluently and had an extensive personal library of books in Japanese. Yet he developed a visceral dislike for the Chinese Communists as well as for the KMT nationalists. The 28 February 1947 massacre (when the Kuomintang army went on a rampage against the Taiwanese local elite) notwithstanding, was nationalist Chinese rule that much more ruthless? The answer is never fully articulated by Kagan. It seems the Japanese colonial government left a more positive impact on its protégé during his formative years than did the KMT government. Yet, the same KMT had enough trust in him to accept him into its ranks and let him occupy the highest office in the land. Was Lee so successful at hiding his true intentions that Chiang Ching-kuo never questioned his loyalty? If not, what were Chiang's motives for grooming him? Kagan does not answer these questions.

As for Communist China, it was largely absent in Lee's personal experience until he became vice president of the Republic of China on Taiwan. Kagan does mention that Lee toyed with Marxist thought during his studies in Japan and that he might have joined the local Communist Party. The evidence is inconclusive, and in any case, his interest did not last.

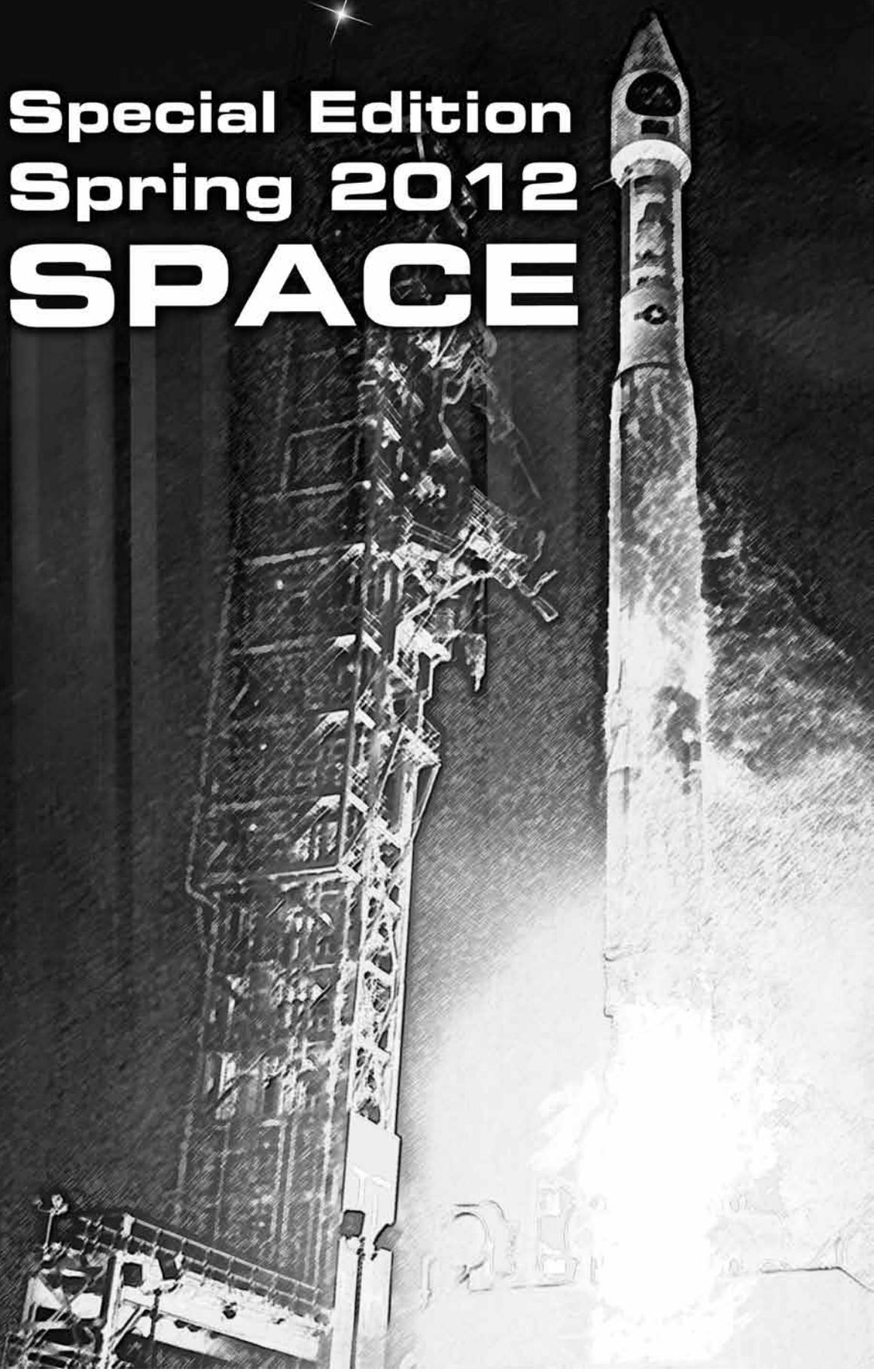
Kagan's coverage of Lee's presidency similarly leaves the reader in the dark as to how he managed to hide his inner feelings about the future of Taiwan in light of the KMT's ambitions regarding recovery of the mainland. While Kagan provides many details of Lee's personal life less well known to a Western audience, the effort did not extend to reconciling the apparent contradictions

Book Reviews

raised by his various beliefs and opinions. Nor are we taken through the internal debates Lee would have had to fight against a reluctant military and party dominated by the old mainland Chinese guard. Despite these inadequacies, Kagan's contribution remains a positive and valuable one to the history of Taiwan's march toward democracy.

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