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Feature Article

Perspectives

Commentary

Like most members of Congress, I am a frequent user of the national airspace system, traveling between Washington and my congressional district in Alabama on a near weekly basis. This lifestyle requires trips to multiple airports in some of the busiest, most-restricted airspace in the country. Additionally, the US Army Unmanned Aircraft Systems Center of Excellence at Fort Rucker and the Air Force's Lemay Center for Doctrine Development and Education at Maxwell-Gunter AFB are in my congressional district. As a result, I am very interested in and concerned about how unmanned aircraft systems (UAS) will affect the areas of safety and mission training.

Airspace regulation is a concern not only for my personal travels but also because of my duties as a member of the House Armed Services Committee. It is particularly pertinent to my assignment to the Terrorism and Unconventional Threats and the Air and Land Forces Subcommittees. Over the last year, I have traveled to Iraq, Pakistan, and twice to Afghanistan on congressional delegations. I have seen firsthand how valuable the entire spectrum of UAS platforms is to intelligence gathering, tactical warning, and taking the war to our enemies. After taking a flight over the Hindu Kush in an Mi-17 "Hip" that looked and felt like it was built in another era—and was older than the two Pakistani pilots flying it—I can certainly understand the value of unmanned aircraft.

Several questions are posed by the increasing proliferation of UAS platforms. How can they be safely integrated into the national airspace system while retaining the operational flexibility and increased training airspace these systems will demand? How might we begin to meet the challenges facing the future of UASs?

While UAS technology is growing at a rapid rate, it is important to remember that this is not a new issue. The first sustained use of unmanned aircraft systems was during the Vietnam War, with over 3,400 reconnaissance sorties flown between 1964 and 1975. Many of the first pictures of SAM sites, North Vietnamese airfields, and Haiphong Harbor were taken by these early systems.

As the technology developed, so did the capability of these systems. What began with a few hundred unmanned aircraft at the beginning of the decade has grown tremendously. We now have thousands of unmanned

aircraft, which are employed on important missions around the world. They provide our Soldiers on the ground with an invaluable tool for reconnaissance and intelligence gathering. This information gives the troops a better way to assess their environment and identify impending danger while also providing a certain level of comfort that they will not be surprised.

Unmanned systems have also grown into lethal weapons, giving us the potential to strike our enemies wherever they might be. Our "Hunter-Killer" platforms are responsible for taking down some of the world's most notorious terrorists in some of the least hospitable locations on Earth. Further underscoring their effectiveness, UASs have even been debated by some as a viable alternative to sending more troops into Afghanistan. Clearly, our unmanned systems play an integral part in our operations around the world, and their role only stands to grow.

Growth in UAS operations could be an important factor in our military success, and we should embrace it. However, with such growth comes a certain number of obstacles and problems that may well impede our UAS effectiveness, readiness, and continued leadership in this critical technology. In the immediate future, we have to find ways to streamline the certificate of authorizations (COA) and Federal Aviation Administration waivers that allow UAS platforms to operate in the national airspace system. Currently, the COA process takes too long, even for renewal of an existing authorization. We also need to develop reasonable operational and safety standards. From the FAA's point of view, safety is the number one concern when it comes to unmanned systems flying over our residential areas and highways.

Federal Aviation Administrator Randy Babbitt gave a speech recently that left little doubt about the FAA's position on unmanned aircraft systems. He believes they are not technically mature enough for seamless and routine use in civilian airspace. Administrator Babbitt views "see and avoid" as a primary part of operations. He says the definition of see and avoid for unmanned aircraft systems is "the capability of an unmanned aircraft system to remain well clear from and avoid collisions with other airborne traffic and vice versa." But it is encouraging that the FAA has taken the lead by working with industry partners to study ways to integrate UAS platforms into the national airspace system.

Another imperative will be expanding the training airspace to accommodate exponentially increasing demand. Finding ways to do this without infringing on the legitimate concerns of general aviation users, such as airspace reductions and additional equipment requirements, will require

coordination from that important community. Congress is only beginning to catch up with the rapid developments in the UAS field. My goal is to help nurture UAS progress, not hinder it. This process will logically include discussions with the military, our intelligence agencies, and the FAA. It will also entail congressional hearings so all sides have an opportunity to bring operational and safety concerns to light. But we should not stop there.

I believe Congress has a real opportunity to show leadership on this issue. Too often various federal agencies experience problems when trying to coordinate activities across their respective jurisdictions. In this case Congress can be the honest broker for all parties involved as we meet the challenges associated with UAS expansion.

Though Congress may be late to the game, some action has been taken. Already, an executive committee consisting of the FAA, the Defense Department, Homeland Security, and NASA leaders has been created to address these issues.

Another action Congress can take is to support policies that encourage the FAA, industry, and DoD agencies to work together to develop operational, airworthiness certification, and flight standards for the UAS platforms. There must be a realization from industry that these systems should not be in the marketplace until there is better assurance of safety and control link reliability.

A recent Congressional Research Study noted that the unmanned aircraft accident rate is 100 times that of manned aircraft. Though the accident rate is much too high, there has been marked improvement in the last few years as our Airmen and Soldiers gain experience and these systems mature. The Army has reduced the accident rate of UASs by 50 percent in each of the last two years; likewise for the Air Force. Continued emphasis on safety will help reduce flight limitations and should allow the services to rely more heavily on unmanned aerial vehicles.

Congressional benchmarking could also help improve UAS data-sharing requirements and overall capabilities. Right now there is not a single clearinghouse for operational and safety data reporting. In UAS operations, it is like the Wild West out there, with each service doing its own thing. In the current rush to field capabilities and get these systems from the marketplace to the combat zone, we are not taking the time as a group of users to collect and learn from incident data across the system. A single-service lead-role concept within the DoD as well as within other agencies who wish to operate in the national airspace system would help develop

standards and collect useful information. In the coming months, I will request an Armed Services Committee hearing so this Congress can begin addressing some of these important issues.

Regardless of what happens on the UAS horizon in the near future, one fact is abundantly clear: our ability to successfully and quickly integrate UAS platforms into our civilian airspace will help meet increased training requirements and safety concerns. Ultimately, this will provide UAS platforms greater performance and effectiveness in their primary mission—supporting the war fighter.

CONGRESSMAN BOBBY BRIGHT
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The Illogic of the Biological Weapons Taboo

Phillip M. McCauley
Rodger A. Payne

In an important monograph published in 1961, Thomas Schelling and Morton Halperin argued that arms control and military policy should be committed to the same fundamental security purposes—preventing war, minimizing the costs and risks of arms competition, and curtailing the scope and violence of war in the event it should occur.[1] The strategists, writing primarily about the budding nuclear age and the missiles then being deployed, additionally emphasized that arms controllers and military planners alike should be committed to developing secure arsenals that do not invite war. In particular, especially vulnerable and dangerously provocative weapons systems should be limited because they might tempt or encourage preemptive or even preventive war. In the preface to the 1985 reprint edition, Schelling and Halperin note that this strategic understanding of arms control "is now widely accepted."[2] Indeed, their strategic logic continues to have significant influence.[3]

Despite the continued utility of the "strategy of arms control," we argue in this article that the international community is constructing an ill-considered and potentially dangerous biological weapons taboo that rebukes its fundamental logic. For decades, states attempted to develop an arms control regime that limited both the acquisition and use of biological weapons. However, efforts to limit biological weapons capabilities have now stalled, even as prohibitions on biological weapons use have been maintained and even strengthened. The resulting regime effectively allows states to retain suspicious capabilities

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that are inevitably viewed as threatening by many of their peers. In turn, relying upon states to uphold a taboo against using these weapons seems increasingly irrelevant in a world where nonstate actors might too readily acquire or develop dangerous capabilities. These developments are particularly worrisome in an international context featuring a large number of states embracing the logic of preventive counterproliferation—and attributing hostile intentions to "evil" or "outlaw" states defined by their domestic political structure, nonsecular leadership, alleged links to transnational terrorist groups, and/or perceived hostility toward other states.

We begin with a brief review of the classic strategic logic of arms control. Next, we provide a description of the evolution of the biological weapons regime, ending with an overview of the 2001 proposed verification protocol to the Biological Weapons Convention (BWC) and subsequent efforts to strengthen the regime. Finally, we conclude with a discussion of the perils of a biological weapons taboo that appears to preserve deadly capabilities while greatly fearing and absolutely prohibiting their use. While many political observers are hopeful that Barack Obama will rebuff the preventive counterproliferation policy emphasized by George W. Bush's presidential administration, we argue that the Obama administration is preserving reckless elements of the so-called Bush Doctrine.

The Strategy of Arms Control

Schelling and Halperin persuasively argued that arms control—including informal or tacit agreements as well as disarmament measures which they subsumed as arms control—should involve collaborative adjustment of military force postures so as to avoid war, minimize the costs and risks of arms competition, and curtail "the scope and violence of war in the event it occurs." As the authors wrote, "The aims of arms control and the aims of national military strategy should be substantially the same" and should "serve the security of the nation."[4] In other words, the goal of arms control should be entirely consistent with the central purpose of a military strategy like deterrence. The preeminent purpose is the reduction of the risk of war, which they claimed could be significantly influenced by the character of the military force posture. As Schelling and Halperin noted, "A main determinant of the likelihood of war is the nature of present military technology and present military expectations."[5] Indeed, the monograph explicitly encouraged security policy makers to think in broad strategic terms about both arms control and military force postures.

Arms control does not mean simply reducing the quantity of accumulated weapons or foregoing all new technological developments. Rather, arms controllers and military planners should be strategists seeking to eliminate the most dangerous kinds of weapons, even as they preserve—and perhaps increase—forces that contribute to security.

According to this logic, if weapons provoke especially perilous responses from a potential opponent, then arms controllers and military planners should seek to limit those weapons in favor of systems that can achieve security objectives like deterrence and stability without the heightened risks. In particular, Schelling and Halperin were concerned with characteristics of weapons that might invite preemptive or even preventive war. In the case of nuclear arsenals, for example, experts in the 1970s and early 1980s debated whether land-based missile systems make for especially vulnerable and tempting first-strike targets. Historically, these arms have often been vulnerably deployed in fixed silos and featured capabilities that make them especially threatening to a foe—very accurate guidance systems and substantial warhead throw weight that assures significant hard-target kill capability.[6] Such systems are viewed as far more dangerous and confrontational than are more mobile and survivable weapons that are more likely to be perceived as second-strike retaliatory systems, such as long-range bomber forces or nuclear-armed submarines. Schelling and Halperin also argued that arms control can reduce the risk of accidental war, primarily via improvements in command, control, and communication.

Against the backdrop of the Cold War, the strategic approach to arms control emphasized and urged joint American-Soviet management of military capabilities rather than political efforts to reduce hostile intentions.[7] Reducing the "capabilities for destruction" is a central goal of arms control, after all, and Schelling and Halperin devoted most of their attention to the manipulation of armaments to reduce the incentives for war. Put differently, the strategists emphasized the "direct relation of arms control to the military environment" rather than to the political or psychological realm. They did not promote arms control primarily as a "confidence building measure" (CBM), even though they recognized that arms control might "create confidence and trust."[8] By Holst's classic definition, CBMs are "arrangements designed to enhance such assurance of mind and belief in the trustworthiness of states and the facts they create;" thus, arms control might serve to increase "the trustworthiness of the announced intentions of other states in respect of their security policies."[9] Yet, Schelling and Halperin

pointed out that arms control might in some circumstances "create suspicion and irritation" and thus "worsen tensions rather than relieve them."[10] This seems to have been a prescient forecast about contemporary politics as many states worry that other states might develop arsenals that call into question their nonproliferation commitments. Estimates of another state's intentions are "necessarily . . . uncertain," emphasize Schelling and Halperin. By contrast, "Measures reciprocally [structured] to reduce capabilities for preclusive attack may help" all parties in an arms agreement.[11]

Given this emphasis on manipulating capabilities rather than intentions, the strategic approach to arms control is consistent with well-known theories of international relations (IR). Most prominently, many realists have long argued, as John Mearsheimer recently did, that "states can never be certain about other states' intentions. . . . intentions are impossible to divine with 100 percent certainty." He continued, "Potential adversaries have incentives to misrepresent their own strength or weakness, and to conceal their true aims."[12] Realists, therefore, focus on the material capability of states "to threaten each other," and such tangible means are said to be the "key factor that drives fear levels up and down."[13] While classic realists like Hans Morgenthau built an IR theory around national interests and human nature (a "will to power"), they nonetheless generally agree that state intentions are difficult to ascertain. Interests for Morgenthau were defined in terms of power, which is primarily evaluated in terms of a state's material capabilities. It "is both futile and deceptive," argued Morgenthau, to search for motives "because motives are the most illusive of psychological data, distorted as they are, frequently beyond recognition, by the interests and emotions of actor and observer alike."[14]

In sum, strategists view arms control as a mechanism for achieving primary security goals, such as reducing the likelihood and costs of war. Additionally, arms control should be primarily concerned with manipulating material capabilities rather than signaling or understanding national intentions. States fear accumulated capabilities, largely because intentions are very difficult to determine.

Limiting Biological Weapons: Arms Control or Taboo?

This section briefly surveys the history of efforts to limit the development and potential use of biological weapons. The evidence reveals that initial arms control efforts in this area sought only to restrict the use of these "poison" weapons. Ultimately, the agreements were broadened to limit capabilities as well. The most recent changes, however, reflect a form

of backtracking. Arguably, stymied by states' failure to agree about verification procedures, a sweeping arms control and disarmament regime has been transformed into a taboo that attempts primarily to preclude the use of bioweapons. Contemporary limits on capabilities have been weakened politically, and the prospects for stronger limits do not look good.

Attempts by mankind to utilize human disease as a weapon of war has an ancient lineage. According to Thomas J. Johnson, "The use of biological pathogens—bacteria, viruses, fungi and toxins—to kill or incapacitate one's enemies has a long pedigree that includes not only Scythian arrows, but the poisoned wells of Sparta, Persia, Rome and others."[15] Before the advent of modern medical science, combatants projected infected human corpses into enemy encampments, released plague-infested rats, or distributed contaminated clothing to civilian populations in the hopes of spreading human disease to the enemy.[16] Largely because of the lack of medical and scientific knowledge at the time, these crude methods of biological warfare were of limited military effectiveness. However, the discovery of the germ theory for human disease in the nineteenth century potentially changed how biological warfare could be waged. The introduction of the agar plate and sterile technique methods made it possible for scientists to isolate pathogenic bacterial strains. While the development of closed sterile fermentation processes during the 1940s allowed scientists to grow large-scale quantities of microbes for the production of vaccines and antibiotics, it also became possible for medical scientists to harness the reproductive power of human pathogens for military means. Furthermore, the advent of recombinant DNA technology in the 1970s bestowed upon scientists the power to manipulate the genes of microbes. While recombinant DNA technology made it possible to produce human insulin on a large scale, it also provided the potential means for scientists to produce more infectious pathogens through the use of genetic manipulation. Indeed, the reproductive capacity of bacteria and viruses make such organisms more deadly on a per-weight basis than conventional or chemical weapons.

Ultimately, the discovery, production, and utilization of chemical weapons in wartime provided the impetus for banning the use of biological weapons. In the public mind, the histories of chemical and biological weapons are linked.[17] Both types of weapons were first discovered in research laboratories, although chemists were much further along in developing chemical weapons during the late nineteenth and early twentieth centuries than biologists or medical scientists were with biological armaments. In any case, the scientific achieve-

ment of creating poison gases instigated the first international attempts to ban the use of chemical weapons during war. A similar ban on bioweapons eventually followed.

A relatively small group of states, most of them European, attempted to draft international rules restraining the conduct of war at the First Peace Conference at The Hague in 1899. The discussion at this conference was aimed at limiting the use of certain newly developed weapons—including submarine mines and torpedoes, balloons, and explosives. All warfare and weapons are potentially deadly; thus, the conference focused on reducing "the excessive armaments which weigh upon all nations." According to Richard Price, "Technologies were not regarded as in and of themselves immoral; their moral value was understood to depend upon how they were used."[18] Chemical weapons were treated uniquely as an absolute ban was applied only to chemical weapons and dum-dum bullets. The ban on chemical weapons was reaffirmed at the second Hague Conference of 1907. The conferees failed to enact the other parts of the arms control agenda outlined for the meeting.

The Hague Conference results can be viewed as extraordinary because chemical weapons had not been fully developed and, in fact, had not yet been used in battle. Usually, newly implemented technologies of war are denounced by victims, or by competitors who lack these new weapons. In this case, the conferees proscribed an undeveloped and untried military technology.[19] Unfortunately, the chemical weapons ban included no enforcement mechanism, and this shortcoming became crucially important during World War I as foes in the conflict used chemical weapons on a large scale. In turn, reports from the warfront about the use of chemical weapons painted pictures of horror for civilians back home. Indeed, contemporary accounts, which revealed significant casualties from the use of chemical agents, undoubtedly influenced the debate about the status of such weapons:

> During the World War a total of about 100,000 tons of gas was used by the various nations involved. The gas casualties produced have been estimated at 534,000 for France, Great Britain, the United States, Italy and Germany and of those casualties approximately 4.2 percent resulted in death. As regards Russia the facts are uncertain. Her troops were poorly protected against gas, however, and suffered heavily; the gas casualties in the Russian armies have been estimated at 475,000, of which 11.7 percent resulted in death.[20]

Today, it is estimated that about 1.3 million people were injured and over 90,000 died as a result of gas use in the First World War.[21] France, Ger-

many, Great Britain, and the United States employed these weapons during the conflict.

Public disgust with the use of chemical weapons in WWI pushed states to further limit their potential use. After the war, in fact, states held a series of international peace and disarmament conferences in hopes of limiting the awfulness of armed conflict. One tangible product of these meetings was the Geneva Protocol of 1925, which reaffirmed the ban on the use of chemical weapons. This agreement also included a prohibition on the use of biological weapons—then typically called bacteriological weapons—in warfare. The formal *Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Gases, and of Bacteriological Methods of Warfare* (Geneva Protocol) did not restrict biological weapons research programs, nor did it bar the development and stockpiling of bioweapons. Furthermore, states that signed and/or ratified the Protocol insisted on maintaining a right to retaliate in-kind if they were attacked with biological or chemical weapons. Many nations used this opening as an entryway to develop bioweapons. As noted by Jeanne Guillemin, France started a biological weapons research program in 1921 and continued it until 1940. Japan began a biological weapons program in 1929, and the Soviet Union initiated a biological weapons program in the 1930s.[22]

British and US biological weapons programs were precipitated by the behavior of other major powers during World War II.[23] Following the familiar logic of the security dilemma, Britain and the United States acted out of fear that Germany and Japan were working to develop biological weapons. In order to have a retaliatory capacity against potential biological weapons attack, "the US Army established a biological warfare research program in 1941 through its Chemical Warfare Service."[24] As explained by biological weapons specialist Jonathon Tucker, this biological warfare research program was initiated "despite the deeply rooted international norm against the military use of poison and disease."[25] The Allied victory at the end of WWII did not eliminate fears related to the potential use of biological weapons. The Cold War competition with the Soviet Union motivated the United States, for example, to continue its efforts to develop biological weapons. In fact, recent scholarship notes that the US government enacted policies to place biological warfare research on par with the far more prominent nuclear weapons program.[26] At its height in 1969, the US biological weapons program employed approximately 3,000 scientists, technicians, and other workers.

In due course, events in the 1960s conspired against supporters of the US biological weapons program. For example, American military forces utilized tear gas and herbicides during the Vietnam War on a massive scale.[27] The executive branch argued that the use of these agents did not violate the Geneva Protocol because the treaty ostensibly banned only lethal chemical weapons. However, an overwhelming number of UN General Assembly member states condemned the American interpretation as contrary to international law.[28] Moreover, domestic critics of this policy and rationale, including many prominent congressional figures, pointed out the fallacy of nonlethality. Tear gas and herbicides were employed to roust enemy combatants from cover or to control rioting in South Vietnam. Reports from Vietnam revealed that helicopters targeted large numbers of tear gas grenades on Vietcong strongholds, a tactic which was followed immediately by B-52s dropping high-explosive or antipersonnel fragmentation bombs. The attacks seemed to be conducted to flush out those hiding in tunnels (whether civilian or combatants), to incapacitate them with gas, and then to wound or kill them with bombs rather than to capture them. This tactic appeared to be wholly inconsistent with the humanitarian justifications offered publicly by the United States.[29]

Additionally, accidents during testing and transport publicly highlighted the dangers of poison weapons.[30] Because of the perceived link between biological and chemical weapons, negative press on chemical weapons usage and development spilled over to taint the biological weapons research program as well. In fact, public outcry over the use of chemical weapons led the Congress in 1967 to begin hearings on US chemical and biological weapons programs. Moreover, the Nixon administration ordered a review of those programs, which continued to be linked together.[31] The review concluded that the United States should forgo the development and use of biological weapons. As a follow-up, President Nixon announced in 1969 that the United States would unilaterally destroy its stockpile of biological weapons, though the US government would continue a small defensive research program. Nixon's words were soon followed by visible and concrete disarmament actions. From May 1971 to May 1972, the Department of Defense destroyed its antipersonnel biological agent stockpiles stored at the Pine Bluff Arsenal in Arkansas, "including 220 pounds of dried anthrax bacteria, 804 pounds of dried tularemia bacteria, 334 pounds of dried Venezuelan equine encephalitis (VEE) virus, 4,991 gallons of liquid VEE viral suspension, 5,098 gallons of Q fever rickettsia suspension, and

tens of thousands of munitions filled with biological and toxin agents and stimulants."[32] Furthermore, the Pentagon cut the biological research budget in half—from $20 million per year to $10 million—and switched the focus of the programs exclusively to defensive purposes.

The Nixon administration also successfully negotiated the Biological Weapons Convention of 1972, which was accomplished in a UN disarmament forum. President Nixon and other administration officials involved with the negotiations often emphasized Washington's desire to prohibit the use of biological weapons under any conditions.[33] However, the BWC banned the development and stockpiling of biological weapons as well. It was signed and ratified by the United States and many other countries, becoming effective in 1975. As of March 2009, 163 states are parties to the treaty. John Parachini of RAND describes the BWC, along with the chemical weapons convention (which went into force in 1997), as "declarations that the international community bans germ and chemical weapons as taboo instruments of war."[34] In fact, the 1972 Biological Weapons Convention is considered the first multilateral disarmament treaty banning the production and use of an entire category of weapons. It arguably reflects a strong international normative consensus as biological weapons programs were stripped of any claim to military legitimacy. Essentially, any nation pursuing an offensive program had to do so secretly and illegally. Unfortunately, at the time the treaty was completed, this was not considered an especially onerous task. As authors Marie Chevrier and Iris Hunger note, "Effective verification was thought to be impossible, and the treaty was therefore given quite modest provisions to address compliance issues."[35] Nonetheless, the total prohibition of the development and possession of biological weapons distinguishes this second phase of bioweapons arms control from the first. Under the prior Geneva Protocol, as noted, neither the development nor the possession of such weapons had been outlawed.[36]

Activists who viewed biological weapons as immoral applauded Nixon's decision to end American involvement in offensive biological weapons development, but the policy reflected strong strategic considerations as well. First, National Security Advisor Henry Kissinger emphasized that the unpredictability of biological weapons limited their utility for retaliation and deterrence; hence, their greatest value was as a first-use weapon.[37] Potentially, such an attack could be quite devastating as relatively small quantities of biological agents could infect thousands of people (or more), create a genuine health care emergency, and thereby incite national panic.

Second, Nixon and his advisors sought to prevent a biological arms race with non–status quo nations, or so-called challenger states.[38] Then, as now, the United States viewed biological weapons as "a poor nation's weapon of mass destruction," and officials recognized great potential American vulnerability to deadly attack.[39] In comparison to nuclear weapons, for instance, bioweapons are both easier and less expensive to manufacture and require almost undetectable laboratory space. The estimated capital infrastructure cost of a 200-square-foot laboratory to produce anthrax is estimated to be around $220,000 dollars.[40] Low economic costs may lend an allure to biological weapons as an easy pathway to power for challenger states that lack the economic resources for nuclear weapons development and production, which is infrastructure heavy and almost surely requires a minimum investment of billions of dollars.[41]

In addition to their low cost, biological weapons are potentially attractive to challenger states because they represent a knowledge-intensive enterprise. The expertise for biological weapons development is based upon research that is widely disseminated by government agencies, universities, and other scientific organizations for the purpose of stimulating scientific process or finding practical applications to human medicine. Vaccine development and biological weapons programs alike utilize the same highly desired biotechnology. Conceivably, challenger states could use legitimate pharmaceutical manufacturing sites intended for vaccine production as cover for biological weapons research and development.[42] Indeed, tens of thousands of scientists and technicians all over the world already possess some of the basic knowledge necessary to perform biological weapons research.[43]

The dual development problem is not merely a theoretical concern. As former Russian president Boris Yeltsin publicly acknowledged in 1992, the Soviet Union grossly violated the terms of the BWC by actively weaponizing several human pathogens as part of a clandestine biological weapons program.[44] Though the Soviet Union was an advanced industrial state, its subterfuge in this area could be emulated and duplicated by smaller and poorer nations. In fact, though Iraq signed the BWC in 1972, the Iraqi government, too, hid a secret biological weapons program under the guise of legitimate pharmaceutical research. This was not discovered by the rest of the world until inspectors entered Iraq after the Persian Gulf War in 1991. The apparent Soviet and Iraqi ability to avoid treaty limits on research and development casts significant doubt about the ability of the BWC to provide meaningful limits on bioweapons proliferation.

The Verification Protocol to the BWC

Given the violations of the BWC by nations that ratified the treaty and the continued expectation of scientific advances in biotechnology, the Third Review Conference of the BWC in 1991 recommended convening a group of scientific and technical experts (called "VEREX," for verification experts) to consider verification procedures for biological research programs. Based upon carefully agreed parameters, the VEREX group soon recommended and established a forum for negotiating legally binding verification methods for the BWC. This forum, known as the Ad Hoc Group, worked from 1995 to 2001 to draft a protocol creating meaningful new verification procedures.[45] In 2001, the final draft was presented to the membership of the BWC for consideration. However, the United States rejected the draft protocol that July and called for terminating the Ad Hoc Group at the December meeting of the parties. The United States objected to the proposed verification regime, primarily because it viewed the planned procedures as insufficient for detecting cheating, though officials also argued that the procedures would be prohibitively expensive and unworkable. Amb. Donald Mahley, the US special negotiator for chemical and biological arms control issues, argued in 2001 that no accurate, timely, or comprehensive inventory of potential bioweapons facilities could be compiled given the fact that almost any serious biological research facility would be "capable under some parameters, of being diverted to biological weapons work. Trying to catalog them all would be tantamount to impossible."[46] Moreover, American officials often claimed that the procedures would jeopardize trade secrets of the pharmaceutical industry and compromise the security of US biodefense programs. Critics of the US position argued that the superpower obstinately and severely damaged efforts to build an effective biological weapons regime based on arms control and disarmament.[47] US officials responded by pointing to proposed substitute measures that would further criminalize bioterrorism, strengthen export controls, and encourage non–legally binding compliance protocols. In general, however, as shall be explored more extensively in the following section, the United States all-too-often highlights "the issue of BWC compliance solely by 'naming names' of countries it suspects of violations."[48]

The US suggestion to criminalize bioterrorism was adopted unanimously by the UN Security Council in April 2004. Specifically, UNSC Resolution 1540 obligates states "to refrain from supporting by any means non-State actors from developing, acquiring, manufacturing, possessing,

transporting, transferring or using nuclear, chemical or biological weapons and their delivery systems." Additionally, Resolution 1540 imposes binding obligations on all states "to establish domestic controls to prevent the proliferation of nuclear, chemical and biological weapons, and their means of delivery, including by establishing appropriate controls over related materials."[49] Finally, the resolution also encourages additional international cooperation on existing nonproliferation measures.

A 1540 Committee was established to collect written reports from UN member states and to establish a database to evaluate states' efforts to implement the resolution. So far, implementation of UNSCR 1540 has been mixed. By the end of the first deadline for submitting comprehensive reports, only 54 states had reported to the 1540 Committee.[50] While some states provided detailed and lengthy reports on their governments' efforts on nonproliferation of nuclear, chemical, and biological weapons, others filed cursory documents that arguably failed to address their obligations. Reporting requirements in this area may be useful, but Resolution 1540 simply makes clear that the international community opposes state transfer of biological weapons to nonstate actors. In Article II, the BWC already broadly prohibits the development of biological weapons; thus, this self-reporting requirement was not a giant leap forward in arms control. Moreover, without an effective verification mechanism, many states will continue to be concerned about shadowy connections between "rogue" regimes and terror networks.[51]

A number of cynical analysts and scientists accuse the United States and other advanced states of opposing a verification protocol because they covertly possess advanced biological weapons capabilities.[52] If spotlighted, such capabilities could undermine the arms control regime. Setting aside this accusation, even defensive (or "protective" in the words of the BWC) and thus technically legal research potentially invites the collapse of the biological weapons arms control regime. Put simply, biological research programs in the United States, Europe, and throughout the developed world are vast in scope and serve to highlight the problem of dual development. In the guise of defensive biowarfare, for example, the United States has constructed a vast research base constituted by an impressive infrastructure of labs and equipment. The anthrax attacks of fall 2001, particularly if they were the work of a single attacker—as the FBI has concluded—at a minimum reveal that American scientists working in defensive biological weapons programs can produce bioweapons with deadly capabilities. This

is no small matter. As Ambassador Mahley pointed out when explaining the US rejection of the BWC verification protocol, America has "tens of thousands" of facilities "potentially relevant to the Convention."[53] Presumably, the world's other advanced industrial states likewise have thousands of technical facilities with "dual use" capability. Analysts at the Center for Arms Control and Non-Proliferation worry that US biological weapons research "appears to be encouraging increased biodefense research around the world. Such research is precisely the type that raises the greatest dual-use concerns." The center's statement continues:

> Even worse, because of their dual-use nature, biodefense activities undertaken as a hedge against technological surprise and the unpredictability of potential adversaries can generate significant uncertainty among outside observers about their true intent. This problem is most severe for threat assessment research, which is usually conducted in secret.
>
> Secrecy in biodefense is increasing, both in the United States and around the world. Secretive biodefense activities threaten to provoke a very real biological arms race as countries react to the suspected capabilities and activities of others and seek to anticipate and counter potential offensive developments by potential adversaries.[54]

Because of the failure to secure biological weapons disarmament, the existing flawed arms control regime could soon collapse and bioweapons capabilities could proliferate widely.

On the plus side of the equation, the supplies and equipment necessary for large-scale biological dual-use research and development are primarily produced by a small number of technologically advanced states.[55] At present, only a few states possess the means for large-scale vaccine production.[56] Lacking domestic suppliers, challenger states interested in biological weapons, especially those in the global south, will have to rely upon international sources to obtain dual-use supplies and equipment. For those nations, such dependency upon international sources creates a potential bottleneck for the proliferation of biological weapons. States that possess the means for large-scale production of bioweapons effectively control access to dual-use biotechnology. These biotechnology supplier states can restrict or even deny the sale or transfer of dual-use biotechnology to developing ones, especially to those deemed as potential challengers.

Indeed, the so-called Australia Group (AG), an informal arrangement of states created in 1985, exploits such bottlenecks by relying upon export controls and licensing measures to limit the proliferation of chemical and biological weapons.[57] The AG originally focused on chemical weapons pro-

liferation but turned its attention to biological weapons in the early 1990s after disclosures about the illicit Iraqi program. One serious weakness of the AG is that Russia, with its dubious history of noncompliance with the BWC, does not belong to the group. Challenger states might also be able to evade the AG by "using transshipment points and shell companies."[58] Unfortunately, the AG is a voluntary consultative regime and member states are under no legally binding agreement to adhere to the established export controls on dual-use biotechnology. This lack of specific enforcement provisions makes it somewhat likely that states will eventually have to rely upon interdiction at sea to assure compliance. More than 90 states are partners of the Proliferation Security Initiative (PSI), in fact, which promises to force confrontations between member-state naval vessels and ships carrying cargo from rogue states.[59] Alleged "outlaws" targeted by the AG and the PSI will undoubtedly complain about great-power application of double standards to maintain oligopoly control of biotechnology. Moreover, while the purpose of such actions would be to seize technologies capable for use to develop "weapons of mass destruction" (WMD), it is certainly possible that such confrontations could provide the kind of concrete evidence about proliferation that would lead worried states to undertake more dangerous preemptive or preventive military actions.

Some legal scholars note that despite the breakdown of the verification protocol and the technological weakening of the arms control regime, various states have taken measures to strengthen the taboo against bioweapons use. Primarily, this has been accomplished by states withdrawing their previous reservations to the original Geneva Protocol and thereby renouncing their right to retaliate in-kind to a bioweapons attack.[60] Most recently, the state parties to the BWC met in Geneva in 2006 for the Sixth Review Conference on the treaty. The results of this conference were unremarkable, as states did not agree to new verification procedures. Rather, states are supposed to adopt "national measures" to implement BWC prohibitions and to establish and maintain security and oversight over pathogenic microorganisms and toxins. Conferees also called for enhanced international capabilities for "responding to, investigating and mitigating the effects of cases of alleged use of biological or toxin weapons or suspicious outbreaks of disease" and "strengthening and broadening national and international institutional efforts and existing mechanisms for the surveillance, detection, diagnosis and combating of infectious diseases affecting humans, animals, and plants." In addition to these health-related

measures, states are supposed to develop and adopt codes of conduct applicable to their scientists.[61] Finally, the parties reaffirmed all articles of the BWC. To facilitate confidence-building measures and assist in administrative duties with regards to the BWC, the member states agreed to establish an implementation support unit in Geneva. Again, however, the final document did not include a legally binding verification protocol for the bioweapons treaty. Clearly, despite the wishes of many other states, the United States continues to be sufficiently powerful to preclude any agreement requiring on-site inspections of potential biological weapons facilities.[62] Bioweapons specialist Jonathan Tucker recently pointed out that the Democratic Clinton administration did not act forcefully to battle domestic interests opposed to a strict bioweapons verification regime—and that those interests became even more powerful in the George W. Bush era. As a result, Tucker is not optimistic that the new political administration in Washington will alter the US negotiating position.[63]

As demonstrated throughout the last two sections, states have long attempted to develop arms control and disarmament measures that limit both the acquisition and the use of biological weapons. However, the latest efforts to limit biological weapons capabilities by the creation of a verification protocol have been effectively abandoned, even as the normative taboo against the use of these weapons has remained in place—and been strengthened. Recent efforts to limit capabilities, such as UNSC Resolution 1540, the Australia Group, and the Proliferation Security Initiative, are arguably linked fairly directly to so-called counterproliferation strategy.[64] These measures address state capabilities but are intended to focus on specific national regimes allegedly tied to terrorists. As will be shown in the concluding section, this is a worrisome development given that more and more states have signaled their willingness to embrace military counterproliferation tactics that would feature anticipatory attacks against specific "outlaw" states that they believe will use WMDs. The next section explains the strategic implications of a biological weapons taboo in an era of counterproliferation and a global "war on terrorism."

The Dangers of a Bioweapons Taboo

Utilization of biological, chemical, or nuclear weapons is now generally understood to be abhorrent and illegitimate. In an interesting and growing literature, a number of scholars of international relations have examined the development of taboos that prohibit the use of these weapons of mass

destruction.[65] Their research explains how the taboos developed over time and came to be widely shared in world politics. In his study of the chemical weapons (CW) taboo, for instance, Richard Price identifies a "tradition of practice that forbids the use of CW and characterizes it as abnormal behavior among the society of states."[66] Price points out that these weapons are uniquely stigmatized among "countless cruel technological innovations in weaponry."[67] Similarly, Nina Tannenwald examines the development of "a normative prohibition on nuclear use," widely acknowledged as a "nuclear taboo," which has proven "essential to explaining why nuclear weapons have remained unused."[68] Numerous scholars and policy actors have similarly referenced a long-standing taboo against biological weapons use.[69]

A taboo prohibiting use of a particular kind of weapon is not the same as an arms control prohibition banning the production or maintenance of weapons capabilities. In fact, the taboo outlawing nuclear use explicitly does not extend to development and deployment of those weapons. As Tannenwald notes in regard to nuclear weapons, it is "easier to ban the use of nuclear weapons than to ban the weapons themselves."[70] Though great powers promised under Article VI of the Nuclear Non-Proliferation Treaty to negotiate "in good faith" towards "nuclear disarmament," their disinterest in that outcome clearly limits the overall meaning of the taboo banning nuclear use. For example, the prohibition against nuclear use has certainly not eliminated all security fears related to the proliferation of nuclear weapons. Throughout the nuclear era, activists and analysts alike have worried that the existence of atomic weapons poses a real threat to global security. Nuclear anxiety clearly undergirded the 1950s efforts to ban the bomb, the 1980s attempts to establish a nuclear freeze, and growing post–9/11 acceptance of the logic of preventive attacks. In the case of the overall nuclear weapons regime, however, the force of a taboo is obviously strengthened by the reality of deterrence.

In contrast, the current biological weapons regime is overly reliant upon the taboo against use, making it ill-considered and potentially antithetical to security goals. First, biological agents produce a less detectable production and delivery "footprint," making retaliation (and thus deterrence) much more difficult and problematic.[71] Effectively, the current international regime allows many states to retain bioweapons capabilities that will be viewed by other states as illegal, immoral, and threatening. This is especially worrisome in a global context that finds various state leaders publicly challenging deterrence theory, embracing the logic of preventive war, and

attributing hostile intentions to other states—occasionally labeled as evil, rogue, or outlaw countries—because of their domestic political structure, nonsecular leadership, alleged links to transnational terrorist groups, and/or perceived hostility to other states.[72] As John Borrie of the UN Institute for Disarmament Research (UNIDIR) predicted at a September 2005 briefing about the Biological Weapons Convention, "Understanding hostile intent [is] going to become more important than merely recognizing where capacity exists, because the latter will become widespread."[73] In August 2009, Amb. Kenneth Brill, director of the National Counterproliferation Center, suggested that this forecast future had arrived. He pessimistically summarized the spread of dual-use biological technologies and declared, "To put it plainly then, the WMD proliferation challenge in the 21st Century is keeping states and nonstate actors from doing what they *can* do if they *choose* to do so . . . we are dealing with WMD counterproliferation as more than a technical issue and increasing the emphasis on issues like intentions and motivations."[74]

Ultimately, we do not argue for complete rejection of the current biological weapons taboo. We do worry, however, that additional bioweapons proliferation seems inevitable, particularly if states do not adopt more sweeping arms control measures. We attempt to demonstrate the additional great need for an arms control and disarmament component of the regime that might altogether eliminate bioweapons and extend the meaning and scope of the taboo. The current bioweapons taboo against use needs to be paired with meaningful arms control to form a regime and strengthened taboo resembling the efforts to limit chemical weapons proliferation and use. Precisely because biological weapons attacks are considered abhorrent, states will continue to fear the development and potential use of these weapons. Failure to control the proliferation of biological weapons capabilities could substantially increase the likelihood of war as states pursue counterproliferation policies that will attempt to prevent surprise attacks. Indeed, the United States and other nations may well have already embraced national strategies that exhibit zero tolerance for bioweapons proliferation—at least toward worrisome challenger states. The counterproliferation initiatives and preventive war threats embraced by the United States have to date been tied to alleged intentions of certain rogue states to pursue weapons of mass destruction rather than to specific material capabilities. In addition to developing the regime to include more sweeping arms control and disarmament measures, we would call on states

to use great caution before launching anticipatory strikes against other states. Indeed, states should reduce the risks tied to the current taboo by using multilateral mechanisms to determine the gravity of threats and to decide appropriate solutions to those threats.

It seems clear that many states possess or will soon develop bioweapons capabilities that other states view as threatening. In August 2002, then–US undersecretary of state for arms control and international security John Bolton declared, "The United States believes that over a dozen countries are pursuing biological weapons."[75] The James Martin Center for Nonproliferation Studies (CNS) similarly estimates that 14 states maintain active biological weapons research programs: Algeria, China, Cuba, Egypt, India, Iran, Israel, Libya, North Korea, Pakistan, Russia, Sudan, Syria, and Taiwan.[76] From that list, the US government has long accused Cuba, Iran, Libya, North Korea, Sudan, and Syria of sponsoring terrorism, though Libya and North Korea were recently removed from the official State Department listing.[77] Potentially, the roster of states pursuing worrisome WMD capabilities of any type could be much longer and the threshold for implementing counterproliferation policies concomitantly lower. Former US special advisor David Kay, who originally led the Iraq Survey Group effort to locate WMD, told Congress in January 2004 that "probably 50 countries" are developing "weapons of mass destruction–related program activities."[78] In his 2004 State of the Union address, then-president George W. Bush used that exact phrase to describe Iraqi WMD developments and to justify in hindsight the US decision to go to war. Indeed, Bush reminded his audience that a crucial "part of the offensive against terror" involves "confronting the regimes that harbor and support terrorists, and could supply them with nuclear, chemical or biological weapons."[79]

As Schelling and Halperin explained decades ago, certain weapons systems seem especially threatening to other states and might provoke war. Such weapons should be the prime concern of arms controllers. Arguably, biological weapons pose exactly this kind of threat—feared especially by the United States in recent years, but by other states as well. The very political leaders who might decide to use force to counter the risks posed by tyrannical regimes or suicidal terrorists argue that deterrent threats will be insufficient.[80] For this reason, since 2001, under the so-called Bush Doctrine, the United States has threatened to attack states that it fears might use WMDs or transfer these arms to terrorists. In December 2002, the Bush White House released a *National Strategy to Combat Weapons of*

Mass Destruction that declared simply, "We will not permit the world's most dangerous regimes and terrorists to threaten us with the world's most destructive weapons."[81] The 2002 *National Security Strategy of the United States of America* was even more direct about the need for preventive action "to stop rogue states and their terrorist clients before they are able to threaten or use weapons of mass destruction . . . even if uncertainty remains as to the time and place of the enemy's attack."[82]

It is important to note that the Bush White House was neither the first nor the last US administration to threaten war or preventive strikes because of the proliferation of WMD. Moreover, the United States is not the only state to threaten proliferant states with preventive war. As Scott Sagan and Marc Trachtenberg have documented, many US government officials supported preventive war options against new Soviet nuclear capabilities during the 1950s and against other subsequent proliferants.[83] For example, John F. Kennedy's administration "came dangerously close" to ordering strikes against nascent Chinese nuclear capabilities in 1963.[84] Somewhat more recently, ad hoc hostility to new proliferant states was turned into a more concrete antiproliferation policy. In December 1993, Bill Clinton's then–secretary of defense Les Aspin announced a defense counterproliferation initiative, which the DoD defined even then as a mission in "support of proliferation prevention and intelligence activities; deterring the use of nuclear, chemical, and biological weapons; defending against such weapons and their effects; and maintaining a robust ability to find and destroy delivery forces and infrastructure elements with minimum collateral effects, should this become necessary."[85] Secretary Aspin noted that counterproliferation provided "a military planning process for dealing with adversaries who have weapons of mass destruction. And our concerns are by no means limited to the nuclear threat." He noted, for instance, a new effort "to oversee all DoD biological defense programs."[86] Historian Marc Trachtenberg points out that the Clinton counterproliferation policy was tested in 1994 when he colorfully concludes that "the smell of war was in the air" vis-à-vis North Korea. He claims, in fact, that "the policy the Clinton administration pursued toward North Korea in 1994 was cut from the same cloth as the Bush strategy."[87] Apparently, the central difference between the Clinton and Bush strategies is that the more recent administration was more overt about its plans in the post–9/11 era and actively sought to emphasize "counterproliferation" rather than traditional nonproliferation strategies, which at least partly reflected the Bush

government's publicly stated doubts about the utility of arms control.[88] The Proliferation Security Initiative is effectively a formalized organizational measure, backed by the US Navy and nearly 100 states, which will assure continuation of counterproliferation strategy into the future.

Will Pres. Barack Obama abandon counterproliferation, or has he, too, threatened to use preventive military measures against such threats? While it seems likely that the Obama administration will not refer publicly or admiringly to a "Bush Doctrine," the new president has frequently signaled that he shares his predecessors' worries about the threats posed by biological and nuclear weapons—and the need to take the offensive against the states and their potential terrorist partners that pose these threats. His 2008 campaign document on *Confronting 21st Century Threats* listed "biological attacks," along with nuclear weapons and cyber warfare, as "three potentially catastrophic threats" faced by the United States.[89] At a Purdue University Summit on Confronting New Threats, Obama claimed that "the successful deployment of biological weapons . . . could kill tens of thousands of Americans and deal a crushing blow to our economy."[90] Moreover, like many within the Bush national security team, Obama has expressed concern that "there are certain elements within the Islamic world right now that don't make those same calculations" that the Soviet leadership did about the basic logic of deterrence ("they don't want to be blown up, we don't want to be blown up").[91] In an interview with the *Chicago Tribune* in 2004, Obama specifically worried about an inability to deter radicals within Iran and Pakistan.

Moreover, President Obama has often expressed a willingness to use force to address threats posed by rogue states and terrorists. Echoing Bush, Obama has frequently said that he "won't take any options off the table, including military, to prevent" one worrisome "game changing" scenario—Iran "obtaining a nuclear weapon."[92] To define precisely what this might mean, Secretary of State Hillary Clinton openly speculated in June 2009 about a United States "first strike" against Iran like the prior attack on Iraq to remind Tehran that "their pursuit of nuclear weapons will actually trigger greater insecurity."[93] President Obama has similarly said he would act preventively against biological threats. In an interview with *Arms Control Today*, he noted, "To prevent bioterror attacks, I will strengthen US intelligence collection overseas to identify and interdict would-be bioterrorists before they strike."[94] In the case of Pakistan, where Osama bin Laden and other al-Qaeda terrorists have apparently fled, candidate Obama pointed

to a willingness to strike against "al-Qaeda in their [Pakistani] territory . . . if they could not or would not do so, and we had actionable intelligence." He continued with a more sweeping statement a few moments later: "My job as commander in chief will be to make sure that we strike anybody who would do America harm when we have actionable intelligence to do that."[95] Even though Obama embraces the traditional international legal standard limiting the ability to strike other states to cases when the United States faces an "imminent threat," he has written that "al-Qaeda qualifies under this standard, and we can and should carry out preemptive strikes against them whenever we can."[96] In practice, the Obama administration has continued the Bush policy of making strikes inside Pakistan using Predator drone aircraft armed with missiles. Indeed, the current administration reportedly expanded attacks well beyond tribal border areas more deeply into Pakistan.[97]

The United States is certainly not the only country that has embraced preventive counterproliferation and counterterrorism policies in the post–9/11 era. Dombrowski and Payne find that while "views expressed by other states do not align perfectly with the positions held by US officials," who embrace a rationale for preventive war, "they do suggest that the international community is beginning to embrace some of the Bush Doctrine's underlying logic. A sizeable number [of states] seem to agree that the risk of calamitous surprise attacks, especially with chemical, biological or nuclear weapons, might well justify preventive strikes against terrorists or preventive wars against their state sponsors."[98] The United Kingdom, Italy, and Australia willingly joined Washington in its attack on Iraq and used much the same rationale for publicly justifying this action. Israel has threatened to attack Iran, and both Russia and India have at times openly admired the logic of America's counterproliferation initiatives. In all, Dombrowski and Payne find that the world seems to be embracing a new international norm allowing preventive strikes to address threats associated with weapons of mass destruction.

These counterproliferation policies are particularly worrisome when threats are said to be defined by perceived hostile intentions rather than by imminent military threats. In fact, by linking alleged threats to national regime type, the United States and other states have embraced a double standard that arguably threatens the nonproliferation regime. American policy makers openly define "evil" or "outlaw" states by their domestic political structure, nonsecular leadership, alleged ties to transnational terror-

ists, and/or perceived animosity. Washington, for instance, has frequently accused Iran, Saddam-era Iraq, Libya, Syria, and North Korea of pursuing biological and other weapons of mass destruction, even as it turned a blind eye toward Israeli WMD status over the years.[99] Alleged WMD activity is described as illegal, illegitimate, and inhumane, but only when pursued by certain kinds of regimes. In contrast, as former undersecretary of state John Bolton admitted, "There are still other states with covert BW programs that we have not named in Biological Weapons Convention fora. The United States has spoken to several of these states privately."[100] As Michael Krepon explains, by dividing the world "between responsible states—US friends and allies—and evildoers" in Conference on Disarmament negotiation forums, "the Bush administration postulated and sought to enforce separate [arms control] norms for each camp."[101] For example, the *Final Declaration of the Sixth Review Conference* on the BWC does not include a key statement about compliance standards found in the *Final Declaration of the Fourth Review Conference* in 1996 (the *Fifth* made no declaration): "Any noncompliance with its provisions could undermine confidence in the Convention. Noncompliance should be treated with determination in all cases, without selectivity or discrimination."[102] Diplomats often charge that such inequitable application of standards undermines the legitimacy of nonproliferation norms.[103] Further proliferation, in turn, increases the risk of the most worrisome implication of duplicity. States said to be evil, nondemocratic, hostile sponsors of terror wear a counterproliferation bulls-eye because they cannot be allowed to develop biological or other weapons of mass destruction.

Conclusion

The international community is constructing an inadequate and potentially dangerous biological weapons taboo that rebukes the fundamental logic of arms control. Historically, states attempted to develop an arms control regime that limited both the acquisition and the use of biological weapons. However, in the most recent decade, efforts to limit biological weapons capabilities have stalled, even as prohibitions on biological weapons use have been maintained and even strengthened. The new regime effectively allows states to retain suspicious capabilities that will be viewed as threatening by their peers. The United States is especially concerned about proliferation, though it embraces a double standard whereby it seems to tolerate WMD in the arsenals of friendly or democratic states. In any event,

the neglect of an arms control approach is particularly troublesome in an international context that embraces counterproliferation and the logic of preventive war—and attributes hostile intentions to "evil" states defined by their domestic political structure, nonsecular leadership, alleged ties to transnational terrorists, and/or perceived hostility to major powers.

It is beyond the scope of this article to develop a workable inspection regime, but many experts in the field have offered what looks to be viable options.[104] Specifically, we would strongly urge consideration of the kinds of detailed recommendations offered by a team of experts from the drug and biotechnology industries, defense contractors, and weapons inspection community assembled by the Stimson Center.[105] According to these professionals, a robust verification regime requires deployment of teams of on-site inspectors with scientific and technical expertise in "biosafety engineering, aerobiology, molecular biology, and computers" as well as scientists with years of experience in pharmaceutical purification development (from research laboratory bench scale to large-scale manufacturing) and auditing.[106] Inspectors should initially perform open-source document reviews of facilities, which should include facility blueprints and diagrams and personnel lists. Satellite photos would also be very helpful. Any discrepancies between the actual layout and the blueprints, diagrams, or photos would be investigated and accompanied by interviews with facility staff. Ideally, in fact, on-site teams should observe staffers in their research laboratories or manufacturing areas while they are working—then talk to them about their daily work and routines. Concerns about suspicious activities would trigger sampling of HEPA (high-efficiency particulate air) filters and waste treatment equipment in addition to laboratory countertops. Storage refrigerators and freezers should be inspected and samples taken for testing, especially stored samples that are incorrectly labeled. Furthermore, to assure reliability, only validated assays or tests should be performed on the facility samples. The Stimson Center's experts pointed out that the now-abandoned Verification Protocol assigned an inadequate number of inspectors to biological facilities and did not allot sufficient time for on-site inspections.

Another group of experts from the University of Maryland's Center for International and Security Studies has more recently proposed a somewhat unique international oversight system. The "International Pathogen Research Authority" they imagine would establish routine oversight protocols for a range of activities that trigger extreme, moderate, or only

potential concern.[107] As with any effective system, it would have to be implemented globally and applied without exception to all scientists engaged in relevant biological research. The proposed protocols include licensing, disclosure, and peer review processes geared around the kinds of risk-benefit calculations already developed for other areas of scientific research. The Maryland group favors video and electronic monitoring of work areas and equipment and places less emphasis on adversarial inspection processes. To work effectively, the entire enterprise must be backed by adequate resources and imbued with legitimate legal authority, likely as a result of an interstate treaty. To prevent abuse of power, the oversight system must include credible protections for industrial secrets.

Regardless of the precise contours, the international community clearly needs to redouble its efforts to build a more effective and verifiable biological weapons arms control regime to augment the existing taboo. This will likely entail a comprehensive global system of peer oversight or inspection that is adequately funded and ideally linked to the BWC. While a relatively intrusive inspections regime might well cost billions of dollars, any such spending is likely to be dwarfed by the costs of "preventive" war or a biological weapons attack.[108] SSQ

Notes

1. Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control* (New York: Pergamon-Brassey's Classic, 1961; 1985 reprint).

2. Ibid., xi.

3. See, for example, Jeffrey A. Larson, "An Introduction to Arms Control," in *Arms Control: Cooperative Security in a Changing Environment*, ed. Larsen (Boulder, CO: Lynne Rienner, 2002), 1–15. Larson argues (p. 5) that the Schelling and Halperin logic is a "founding premise of arms control theory."

4. Schelling and Halperin, *Strategy and Arms Control*, 1, 142–43.

5. Ibid., 3.

6. For an overview, see Pavel Podvig, "The Window of Vulnerability that Wasn't," *International Security* 33, no.1 (Summer 2008): 118–38. In their 1985 preface, Schelling and Halperin note that the "ABM Treaty was almost the ideal model" of what they had proposed. "Imperfect defensive systems inherently increase the risk of war by creating on both sides an incentive to strike first." Also, ABM deployment would likely have increased the costs of the arms race as both the United States and Soviet Union would have deployed more offensive forces in response. See Schelling and Halperin, *Strategy and Arms Control*, xi.

7. The strategists conceded (p. 121) that arms control might actually entail increased deployment of certain kinds of weapons. However, this is not a major theme of the book. Nonetheless, see Thomas C. Schelling, "Reciprocal Measures for Arms Stabilization," *Daedalus* 134, no. 4 (Fall 2005): 101–17. The journal republished his 1960 essay.

8. Schelling and Halperin, *Strategy and Arms Control*, 6.

9. Johan Jørgen Holst, "Confidence–Building Measures: A Conceptual Framework," *Survival* 25 no.1 (January/February 1983): 2.

10. Schelling and Halperin, *Strategy and Arms Control*, 6, 45.

11. Ibid., 13.

12. John J. Mearsheimer, *The Tragedy of Great-Power Politics* (New York: W. W. Norton & Co., 2001), 31, 38.

13. Ibid., 43.

14. Hans Morgenthau, with Kenneth Thompson, *Politics among Nations*, 6th ed. (New York: Knopf, 1985), 5–6. Constructivist scholars have also argued that "real motives" cannot be ascertained. See Ronald R. Krebs and Patrick Thaddeus Jackson, "Twisting Tongues and Twisting Arms: The Power of Political Rhetoric," *European Journal of International Relations* 13, no. 1 (March 2007): 35–66.

15. Thomas J. Johnson, "From Scythian poisoned arrows to anthrax dispersal, bombs, biological warfare has always been with us," *Military History* 19, no. 3 (August 2002): 24.

16. Maurice R. Hillman, "Overview: Cause and Prevention in Biowarfare and Bioterrorism," *Vaccine* 20, no. 25 (August 2002): 3055–56.

17. Jeanne Guillemin, *Biological Weapons: From the Invention of State-Sponsored Programs to Contemporary Bioterrorism* (New York: Columbia University Press, 2005).

18. Richard Price, "A Genealogy of the Chemical Weapons Taboo," *International Organization* 49, no. 1 (Winter 1995): 90.

19. Ibid., 90–91.

20. James E. Mills, "Chemical Warfare," *Foreign Affairs* 10, no. 3 (April 1932): 444.

21. Demetrious Evison, David Hinsley, and Paul Rice, "Chemical Weapons," *British Medical Journal* 324, no. 9 (February 2002): 332.

22. See Guillemin, *Biological Weapons*, 24–26, 75–91, 131–47.

23. Jonathon B. Tucker, "A Farewell to Germs: The US Renunciation of Biological and Toxin Warfare, 1969–1970," *International Security* 27, no. 1 (Summer 2002): 107–48. See also Guillemin, *Biological Weapons*, 57–74. The United States did not become a party to the Geneva Protocol until 1975.

24. Tucker, "A Farewell to Germs," 109.

25. Ibid.

26. Guillemin, *Biological Weapons*, 92–111.

27. J. B. Neilands, "Vietnam: Progress of the Chemical War," *Asian Survey* 10, no. 3 (March 1970): 209–29. See also Guillemin, *Biological Weapons*, 112–17.

28. The vote was 80–3. The US dissenting vote was matched only by Australia and Portugal. See Thomas Graham and Damien J. LaVera, *Cornerstones of Security: Arms Control Treaties in the Nuclear Era* (Seattle: University of Washington Press, 2003), 9.

29. George Bunn, "Gas and Germ Warfare: International Legal History and Present Status," *Proceedings of the National Academy of Sciences of the United States of America* 65, issue 1 (15 January 1970): 256.

30. For details, see Guillemin, *Biological Weapons*, 119–21; and Tucker, "A Farewell to Germs," 113–15.

31. Tucker, "A Farewell to Germs," 115–30. See also Guillemin, *Biological Weapons*, 122–25.

32. Tucker, "Farewell to Germs," 139–40.

33. Federation of American Scientists (FAS), *A Report of the Working Group on Biological Weapons: The US Government's Interpretation of the Biological and Toxin Weapons Convention,* November 2002, http://www.fas.org/bwc/papers/usinterpretation.pdf.

34. John Parachini, "Non-Proliferation Policy and the War on Terrorism," *Arms Control Today*, October 2001, http://www.armscontrol.org/act/2001_10/parachinioct01.asp.

35. Marie Isabelle Chevrier and Iris Hunger, "Confidence-Building Measures for the BWTC: Performance and Potential," *Nonproliferation Review* 7, no. 3 (Fall/Winter 2000): 24. The authors found (p. 40) no evidence that CBMs "have increased confidence in countries' treaty compliance or in the effectiveness" of the treaty. They call for a strong compliance protocol.

36. Guillemin, *Biological Weapons*, 13.

37. FAS, *Report of the Working Group on BW*.

38. Tucker, "A Farewell to Germs," 128, 142–43.

39. Lt Col Terry N. Mayer, "The Biological Weapon: A Poor Nation's Weapon of Mass Destruction," in *Battlefield of the Future, 21st Century Warfare Issues*, eds. Barry R. Schneider and Lawrence E. Grinter (Maxwell AFB, AL: Air University Press, September 1995), http://www.airpower.maxwell.af.mil/airchronicles/battle/front.html. The United States, in fact, was a prominent victim of a series of anthrax attacks during fall 2001. However, the FBI has concluded the attacks were committed by a domestic scientist likely acting alone. See Federal Bureau of Investigation, "Anthrax Investigation, Closing a Chapter," 6 August 2008, http://www.fbi.gov/page2/august08/amerithrax080608.html.

40. Dr. Michael Callahan, Testimony, *Engineering Bio-Terror Agents: Lessons from the Offensive US and Russian Biological Weapons Programs, Hearing before the Subcommittee on Prevention of Nuclear and Biological Terror of the Committee on Homeland Security*, House of Representatives, 109th Congress, 1st sess., 13 July 2005, 17, http://www.fas.org/irp/congress/2005_hr/bioterror.pdf.

41. See Jeffrey W. Knopf, "Recasting the Proliferation Optimism-Pessimism Debate," *Security Studies* 12, issue 1 (Autumn 2002): 65–69.

42. For a review of the dual-use dilemma, see William M. Evan and Bret B. Hays, "Dual Use Technology in the Context of the Non-proliferation Regime," *History and Technology* 22, no. 1 (March 2006): 105–13; and Gregory Koblentz, "Pathogens as Weapons: The International Security Implications of Biological Warfare," *International Security* 28, no. 3 (Winter 2003/04): 84–122.

43. For a general review of the advances in biotechnology that may have applications in biological weapons research, see Christopher F. Chyba and Alex L. Greninger, "Biotechnology and Bioterrorism: An Unprecedented World," *Survival* 46, no. 2 (Summer 2004): 143–62.

44. Ken Alibek, with Stephen Handleman, *Biohazard: The Chilling True Story of the Largest Covert Biological Weapons Program in the World—Told from the Inside by the Man Who Ran It* (New York: Random House, 1999). See also the US General Accounting Office, *Biological Weapons: Efforts to Reduce Former Soviet Threat Offers Benefits, Poses New Risks* (Washington, DC: GPO, April 2000).

45. Jonathan B. Tucker, "Strengthening the BWC: Moving toward a Compliance Protocol," *Arms Control Today* (January/February 1998), http://www.armscontrol.org/act/1998_01-02/tucker.asp.

46. Statement by Donald Mahley, US special negotiator, to the Ad Hoc Group of Biological Weapons Convention States Parties, Geneva, Switzerland, 25 July 2001, http://geneva.usmission.gov/press2001/0725mahley.htm.

47. Some analysts argue that the proposed protocol was flawed. For some criticisms of the protocol, see Kenneth D. Ward, "The BWC Protocol: Mandate for Failure," *Nonproliferation Review* 11, no. 2 (Summer 2004): 1–17. Others insist that a workable verification procedure is possible. See a collaborative research report of experts from the US pharmaceutical and biotechnology industries, *Compliance through Science: US Pharmaceutical Industry Experts on a Strengthened Bioweapons Nonproliferation Regime*, Henry L. Stimson Center, Report no. 48, September 2002, http://www.stimson.org/cbw/pdf/ComplianceScience.pdf. For a brief but thorough discussion of much recent literature, see Koblentz, "Pathogens as Weapons," 94–97. The Government Accountability Office (GAO) has suggested that inspections are compatible with protection of

industry trade secrets. See GAO, *Arms Control: Experience of US Industry with Chemical Weapons Convention Inspections* (Washington, DC: GPO, September 2000), http://www.gao.gov/cgi-bin/getrpt?GAO/T-NSIAD-00-249.

48. Peter Crail, "The Sixth Review Conference of the Biological Weapons Convention: Success or Failure?—An Interview with Jonathan B. Tucker," James Martin Center for Nonproliferation Studies, 4 January 2007, http://cns.miis.edu/stories/070104.htm.

49. UN 1540 Committee Web site, 2007, http://www.un.org/sc/1540/.

50. Nuclear Threat Initiative Web site, 2009, http://www.nti.org/f_WMD411/f2n1.html. To date, not all UN member states have delivered comprehensive reports to the 1540 Committee.

51. The Clinton administration used this terminology to refer to relatively minor powers viewed as outlaws because of their authoritarian governments, aggressive behavior, and pursuit of biological, chemical, or nuclear weapons. The prior Bush administration sometimes referred to "renegade" states. See Robert S. Litwak, *Rogue States and US Foreign Policy* (Washington, DC: Wilson Center Press, 2000).

52. Oliver Meier, "The US Rejection of Bioweapons Verification and Implications for Future Negotiations," *International Network of Engineers and Scientists against Proliferation Information Bulletin* 21 (April 2003): 73, http://www.inesap.org/sites/default/files/inesap_old/pdf/INESAP_Bulletin21.pdf.

53. Mahley, statement.

54. Center for Arms Control and Non-Proliferation, "Biological and Chemical Weapons," http://www.armscontrolcenter.org/policy/biochem/.

55. See Table III.1 identifying "The number of biotechnology companies, research institutions and industrial associations in selected regions and countries," in *UN Conference on Trade and Development, The Biotechnology Promise: Capacity-building for Participation of Developing Countries in the Bioeconomy* (New York: United Nations, 2004), 49, http://stdev.unctad.org/docs/biotech.pdf. India and Mexico have far more biotechnology companies than other developing countries. See also William Hoffman, "Global biotechnology clusters map," 20 August 2009, http://www.mbbnet.umn.edu/scmap/biotechmap.html.

56. Susan Foster, Richard Laing, Bjørn Melgaard, and Michel Zaffran, "Ensuring Supplies of Appropriate Drugs and Vaccines," in *Disease Control Priorities in Developing Countries*, 2nd ed. (New York: Oxford University Press, 2006), http://www.dcp2.org/pubs/DCP/72/Section/10409.

57. The Australia Group Web site, 2007, http://www.australiagroup.net/en/index.html.

58. Michael Barletta, Amy Sands, and Jonathan B. Tucker, "Keeping Track of Anthrax: The Case for a Biosecurity Convention," *Bulletin of the Atomic Scientists* 58, no. 3 (May/June 2002): 60.

59. See US Department of State, Bureau of International Security and Nonproliferation, *Proliferation Security Initiative*, http://www.state.gov/t/isn/c10390.htm; and Andrew C. Winner, "The Proliferation Security Initiative: The New Face of Interdiction," *Washington Quarterly* 28, no. 2 (Spring 2005): 129–43.

60. David P. Fidler, "Facing the global challenges posed by biological weapons," *Microbes and Infection* 1, no. 12 (October 1999): 1059–66.

61. The United Nations Office at Geneva (UNOG) Web site, 2008, "Sixth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, (Geneva, 20 November–8 December 2006), Final Document," 19, http://daccessdds.un.org/doc/UNDOC/GEN/G07/600/30/PDF/G0760030.pdf?OpenElement.

62. See Voice of America News, "UN Conference Aims to Reduce Threat of Biological Weapons," 20 August 2007, available from Federal Information and News Dispatch, Inc., Lexis-Nexis.

63. Crail, "Sixth Review Conference."

64. CDR Joel Doolin, USN, for example, argues that PSI interdictions might be justified by referencing Resolution 1540. See Joel A. Doolin, "The Proliferation Security Initiative: Cornerstone of a New International Norm," *Naval War College Review* 59, no. 2 (Spring 2006), 45–46, 51.

65. For a review of the security implications of taboos, see Leonard A. Cole, "The Specter of Biological Weapons," *Scientific American* 275, no. 6 (December 1996); and T. V. Paul, "Nuclear Taboo and War Initiation in Regional Conflicts," *Journal of Conflict Resolution* 39, no. 4 (December 1995): 696–717. For a cultural-historical argument, see John Ellis van Courtland Moon, "The Development of the Norm against the Use of Poison: What Literature Tells Us," *Politics and the Life Sciences* 27, no. 55 (September 2008), 55–77.

66. Price, "A Genealogy," 103.

67. Richard M. Price, *The Chemical Weapons Taboo* (Ithaca: Cornell University, 1997), 1.

68. Nina Tannenwald, "The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use," *International Organization* 53 (Summer 1999): 433–68.

69. For example, see FAS, "Strengthening the Ban on Germ Weapons," press release, 7 November 2001, http://www.fas.org/bwc/news/FASPressRelease7Nov2001.html; Joseph W. Foxell, "Trends in Bio-Terrorism: Two Generations of Weapons," *Journal of Contingencies and Crisis Management* 7 (June 1999): 102–18; and Fidler, "Facing the global challenges posed by biological weapons."

70. Nina Tannenwald, "Stigmatizing the Bomb, Origins of the Nuclear Taboo," *International Security* 29 (Spring 1995): 48.

71. David P. Fidler and Lawrence O. Gostin, *Biosecurity in the Global Age, Biological Weapons, Public Health, and the Rule of Law* (Stanford: Stanford Law and Politics, 2008), 25–26.

72. Experts on biotechnology and biological warfare vigorously debate the threat posed by nonstate actors. Using an analogy to Moore's Law for the production of computer chips, Dr. Rob Carlson of Biodesic, an engineering firm in Seattle, argues that near-term biotechnological discoveries will give potential bioterrorists the ability to genetically engineer and produce new biological weapons for only tens of thousands of dollars. For details of his thesis, see Robert Carlson, "The Pace and Proliferation of Biological Technologies," *Biosecurity and Bioterrorism: Biodefense Strategy* 1, no. 3 (September 2003): 203–14, http://www.synthesis.cc/writing/Carlson_Pace_and_Prolif.pdf. However, other experts posit that the near-term threat of a large-scale bioterrorist attack is exaggerated. Dr. Milton Leitenberg of the Center for International and Security Studies at the University of Maryland argues that terrorist groups have had difficulty obtaining pathogens and toxins, producing them in large enough quantities for a mass attack, and developing delivery systems for their dissemination. For details on the technological hurdles, see Milton Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat* (Carlisle, PA: US Army War College, Strategic Studies Institute, December 2005), http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB639.pdf. Bioterrorism seems to be a potential future threat, while state-sponsored biological warfare programs are a present danger to international security.

73. John Borrie, "The evolution of the biological weapons threat and the BTWC, A joint briefing by the UN Department for Disarmament Affairs and the UN Institute for Disarmament Research," 13 September 2005, 13, http://www.unog.ch/80256EDD006B8954/(httpAssets)/1D1FF77A60E56AC6C1257193003A0FC9/$file/BWC+seminar+Sept+05+-+Brief+History+of+BW.pdf.

74. Kenneth C. Brill, "Remarks by the Director of the National Counterproliferation Center," Washington Institute for Near East Policy, 4 August 2009, http://www.dni.gov/speeches/20090804_speech.pdf .

75. John R. Bolton, "The US Position on the Biological Weapons Convention: Combating the BW Threat," Remarks at Tokyo America Center, Tokyo, Japan, 26 August 2002, http://usinfo.org/wf-archive/2002/020827/epf201.htm.

76. James Martin Center for Nonproliferation Studies, 2002, http://cns.miis.edu/research/cbw/possess.htm.

77. See Department of State, "State Sponsors of Terrorism," http://www.state.gov/s/ct/c14151.htm. The listings can seem fickle as Iraq was on the list from its inception then off during the Iran war then back on at the time of the Persian Gulf War and finally removed during the latest Bush presidency.

78. Senator Mark Dayton (D-MN) asked David Kay, "Just based on your general knowledge, how many countries would you say in the world today would qualify under the category of developing weapons of mass destruction–related program activities or having such activities?" Kay "hesitate[d] to give . . . an off-the-cuff number" but ultimately said that "you're talking about probably 50 countries that have programs that would fall somewhere in that broader vernacular." *Hearing on Iraqi Weapons of Mass Destruction and Related Programs, Senate Armed Services Committee*, 28 January 2004, http://globalresearch.ca/articles/KAY401A.html.

79. George W. Bush, "State of the Union Address," 20 January 2004, http://georgewbush-whitehouse.archives.gov/news/releases/2004/01/20040120-7.html.

80. For a scholarly argument on deterrence, see Koblentz, "Pathogens as Weapons," 107–10.

81. White House, *National Strategy to Combat Weapons of Mass Destruction*, December 2002, 1, http://georgewbush-whitehouse.archives.gov/news/releases/2002/12/WMDStrategy.pdf.

82. White House, *The National Security Strategy of the United States of America*, September 2002, 14–15, http://georgewbush-whitehouse.archives.gov/nsc/nss/2002/nss.pdf.

83. Scott D. Sagan, "More Will Be Worse," in *The Spread of Nuclear Weapons, A Debate Renewed*, eds. Scott D. Sagan and Kenneth N. Waltz (New York: W. W. Norton & Co., 2005), 56–59; and Marc Trachtenberg, "Preventive War and US Foreign Policy," *Security Studies* 16, no. 1 (January–March 2007): 1–31.

84. Gordon H. Chang, "JFK, China and the Bomb," *Journal of American History* 74, issue 4 (March 1988): 1310.

85. Committee for National Security, National Science and Technology Council, *National Security Science and Technology Strategy, 1995*, 8, http://handle.dtic.mil/100.2/ADA298630.

86. Les Aspin, "Counterproliferation Initiative," Presidential Decision Directive PDD/NSC 18, December 1993, http://www.fas.org/irp/offdocs/pdd18.htm.

87. Trachtenberg, "Preventive War and US Foreign Policy," 17, 19.

88. Bolton described the "frontlines" in the Bush administration's "forward" strategy as "counterproliferation" rather than "nonproliferation." John R. Bolton, "Preventing Iran from Acquiring Nuclear Weapons," Remarks to Hudson Institute, 17 August 2004, http://www.hudson.org/files/publications/Bolton%20Speech.pdf. See also Jason D. Ellis, "The Best Defense: Counterproliferation and US National Security," *Washington Quarterly* 26, no. 2 (Spring 2003): 116–17.

89. "Confronting 21st Century Threats," Obama campaign Web site, 16 July 2008, http://www.barackobama.com/2008/07/16/fact_sheet_obamas_new_plan_to.php.

90. Barack Obama (speech at Purdue University, 16 July 2008), http://www.cfr.org/publication/16807/barack_obamas_speech_at_the_university_of_purdue.html.

91. David Mendell, "Obama would consider missile strikes on Iran," *Chicago Tribune*, 25 September 2004.

92. "Obama Says Economy, Iraq Are Top Issues," *CBS News*, 21 September 2008, http://www.cbsnews.com/stories/2008/09/21/60minutes/main4463342.shtml.

93. "Transcript: Secretary of State Hillary Clinton on 'This Week'," 7 June 2009, http://abcnews.go.com/print?id=7775502.

94. "2008 Presidential Q&A: President-elect Barack Obama," *Arms Control Today*, December 2008, http://www.armscontrol.org/system/files/Obama_Q-A_FINAL_Dec10_2008.pdf.

95. "Transcript: ABC News/Facebook/WMUR Democratic Debate," 5 January 2008, http://abcnews.go.com/Story?id=4092530&page=1.

96. Barack Obama, *The Audacity of Hope: Thoughts on Reclaiming the American Dream* (New York: Crown, 2006), 309.

97. Bill Roggio and Alexander Mayer, "US Predator strikes in Pakistan: Observations," *Long War Journal*, July 21, 2009, http://www.longwarjournal.org/archives/2009/07/us_predator_strikes_3.php.

98. Peter Dombrowski and Rodger A. Payne, "The Emerging Consensus for Preventive War," *Survival* 48, issue 2 (Summer 2006): 115–36. For a somewhat dissenting view, see Gary L. Guertner, "European Views of Preemption in US National Security Strategy," *Parameters* 37 (Summer 2007): 31–44.

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100. Bolton, "The US Position on the Biological Weapons Convention."

101. Michael Krepon, "The Conference on Disarmament: Means of Rejuvenation," *Arms Control Today*, December 2006, http://www.armscontrol.org/act/2006_12/Krepon.asp.

102. Compare UNOG 2006 to "Fourth Review Conference of the Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, Final Document, Part II, Final Declaration (Geneva, 25 November–6 December 1996)," http://www.un.org/Depts/ddar/bwc/bwc.htm.

103. UN Department of Public Information, "Delegates Blame Non-Compliance with Treaty Obligations, Double Standards for Holding Up International Disarmament, Non-Proliferation Efforts," news release, 9 October 2008, http://un.org/News/Press/docs/2008/gadis3364.doc.htm.

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105. For details, see the Joint Research Report of Academic and Research Institute, Pharmaceutical and Biotechnology Industry, Defense Contractor, and Inspection Veteran Brainstorming Groups, *House of Cards: The Pivotal Importance of a Technically Sound BWC Monitoring Protocol*, Henry L. Stimson Center, Report no. 37, May 2001, http://www.stimson.org/cbw/pdf/houseofcards.pdf.

106. Ibid., 90–91.

107. Steinbruner et al, *Controlling Dangerous Pathogens*, 33–34.

108. Linda J. Bilmes and Joseph E. Stiglitz, "The Iraq War Will Cost us $3 Trillion, and Much More," *Washington Post*, 9 March 2008, http://www.washingtonpost.com/wp-dyn/content/article/2008/03/07/AR2008030702846.html. The United States has spent over $50 billion in response to the fall 2001 anthrax attacks. See Bob Drogin, "Anthrax hoaxes pile up, as does their cost," *Los Angeles Times*, 8 March 2009, http://articles.latimes.com/2009/mar/08/nation/na-anthrax-threats8. By comparison, cost estimates for the previously negotiated BWC verification protocol seem trivial. See Lynn C. Klotz, "The Biological Weapons Protocol as a Health Care Intervention," *FAS Public Interest Report: The Journal of the Federation of American Scientists* 55, no. 1 (January/February 2002), http://www.fas.org/faspir/2002/v55n1/bw.htm.

The Art of Military Discovery

Chinese Air and Space Power Implications for the USAF

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Now let any man soberly and diligently consider what the way is by which men have been accustomed to proceed in the investigation and discovery of things . . .

—Sir Francis Bacon, 1620

Among many things, the ancient warrior Sun Tzu admonished military strategists to "know your enemies." But exactly how does anyone come to know their enemies or even if they truly are enemies? Some would view this as merely the sum of fact gathering and analysis, but it is more. Knowledge and understanding of potential adversaries are imbedded in the art of military discovery. The art of discovery, as defined by Sir Francis Bacon, involves first seeking out and setting before you "all that has been said about it by others." This is accomplished in military circles, although not well, through the academic exercises of research, exchange of thoughts and ideas, and debate in areas of military analysis, political and cultural awareness, history, and personal experience. Following these, one is left to what Bacon calls "evoking the spirit to provide oracles,"[1] or in more modern language, seeking inspiration for original thought and insight into an issue. This article attempts to use Bacon's methods regarding the art of "military

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discovery" concerning Chinese air and space power and its implications for the US Air Force while simultaneously analyzing the current methods of military discovery employed by the Department of Defense (DoD) and the USAF community.

Since 2001, the US military has been facing great challenges in the long war against terrorism while continuing to prepare for potential conventional threats, including war with one or more near-peers. The rise of China, the most important change in the global economic and political balance of recent years, raises concerns about Chinese military modernization that might enable Beijing to dominate Asia or challenge US hegemony. Many military planners and defense thinkers are looking to China as the next potential large-scale threat to the United States, and the USAF is no exception, as the People's Liberation Army Air Force (PLAAF) rapidly evolves into an offensive air and space power. However, what methods of assessment and discovery are military planners using to derive future strategies? A general lack of indigenous USAF research and assessment capabilities regarding Chinese aerospace power development has caused the Air Force to place a heavy reliance on outsourced and narrowly focused open-source research. There have been few critical analyses of *how* the USAF has assessed China's progress in the air and space realm. With debates raging about the focus of the US military and the USAF's future in it, these analyses may have a substantial impact on acquisition requirements, systems, and strategies. It is imperative to take a critical look at the methodology associated with the USAF's military discovery process and to understand the implications this may have on contending with a near-peer competitor. As this article uses the art of military discovery to address key challenges to the USAF's assessment efforts, it will first examine some current studies on Chinese air and space power. Second, it will comment on contemporary assessments by the DoD and individual researchers. Third, it will offer an extensive assessment of actual Chinese progress and the problems of the PLAAF. Finally, it will review both the USAF's efforts and the associated challenges in maintaining air and space power superiority in the Asian-Pacific region.

There have been some notable efforts to study Chinese airpower since the end of the Cold War. Highly representative is a USAF-sponsored RAND study in 1995 on the history and capabilities of China's air force. This study opined that the PLAAF professed no coherent strategic doctrine, lacked funds for a comprehensive modernization program, flew outmoded equipment, had ill-trained pilots and ground personnel, possessed

no midair refueling capabilities, and could not rely on domestic Chinese manufacturers to develop and produce advanced airpower weapon systems. RAND concluded that China's air force would be unable to mount a credible offensive threat over the next decade due to challenges in five areas: leadership and strategy, manpower, technology and infrastructure, budgets, and competition from other service branches.[2] Today, although the decade has passed, the RAND study continues to be viewed as a benchmark in understanding China's air and space power and its development. For military discovery to have enduring usefulness, it is essential to understand the extent to which the RAND study remains true and to what extent China has progressed in overcoming the problems identified. Regardless, it is clear the RAND monograph was not immune to the challenges of predicting the future; its authors did not foresee the emergence of new security challenges during the second half of the 1990s which prompted the Chinese to accelerate their air force modernization endeavors.

Current Studies on Chinese Air and Space Power

The predominant role played by air and space power in the conflicts since the 1991 Gulf War has been well recognized in Chinese military writings and appears to have forced the PLAAF to reevaluate its strategy and procurement policies. Beijing's concern about a possible conflict in the Taiwan Strait has also intensified as the PLA debates its air force missions and modernization programs.[3] In a 1999 article, John Wilson Lewis and Xue Litai argue that China's failures in the past decades to create a modern air force led to uncertainty that its *future* efforts will succeed in building credible airpower to deter foreign threats and combat Taiwan's continuing course of separatism.[4] Their propositions found support in official analyses of China's air and space capabilities published since the late 1990s. For example, the 2000 annual report on Chinese military power by the DoD claimed that the shortage of air and command, control, communications, computers, and intelligence (C4I) technologies would continue to place the quality of China's air forces behind that of advanced Western nations and that China would not have "development and deployment of a comprehensive integrated air defense system" until around 2020.[5]

In her quest to characterize Chinese airpower, Jacqueline Newmyer attributes the PLAAF's weakness in offensive capabilities to Chinese culture and politics. These, she maintains, create a hostile environment for

the maturation of airpower development. She argues that Chinese Confucian and Daoist philosophies discourage scientific inquiry and discovery, and that communist authoritarian leadership is afraid of "the potential of technology to empower soldiers."[6] If true, China's culture should play a major role in influencing its air and space strategy toward a defensive emphasis. The author, however, by concentrating on cultural impediments, fails to consider how China's long-backward defense industry and limited resources left the PLAAF with relatively few alternatives for fleet modernization, often leading to unmet requirements. Newmyer's conclusion, which seems to hold true in many contexts, is that China's current success in economic reforms could foster a new attitude toward airpower.

Other intellectual studies regarding Chinese airpower found tacit acceptance inside the USAF. In 2003, the Air Force's *Air and Space Power Journal* published two studies on the PLAAF. Although they do not represent official USAF views, these articles are peer reviewed and represent intellectual efforts that Air Force thinkers find stimulating and representative of innovative thought on the subject. The first was an online article written by an Air Force public affairs officer examining the development of the PLAAF in four specific disciplines: conventional warfare, training, asymmetric or nontraditional warfare, and using asymmetric tactics within information warfare.[7] Without using Chinese sources and relying on outdated publications,[8] Lt Morgan O'Brien argued that despite China's surge toward global power in the twenty-first century, the PLAAF still faced serious challenges, including failures to "develop incremental short-term plans to accomplish a variety of goals over a long period of time" and a shortage of personnel who are well educated in science and engineering. He concluded that "the PLAAF will continue to depend on traditional and cyber-espionage" to compete with the USAF.[9]

The second study was published in the same journal by Lt Col Thomas R. McCabe, an Air Force reservist and intelligence analyst. His analysis focused on the PLAAF's air and space power doctrine and its abilities to execute that doctrine.[10] While recognizing that the Chinese military was preparing to fight a local war under high-technology conditions, the author found no evidence to suggest that the PLAAF was transforming toward a USAF-like organization with an emphasis on all-weather offensive, precision strike, and sophisticated command and control (C2) or intelligence, surveillance, and reconnaissance (ISR) capabilities. He contended that modernization of the PLAAF was challenged by three restraints: PLA

tradition that regards the ground army as the "preeminent service," economic limitations that make the replacement of the PLAAF's antiquated equipment costly, and technological limitations that necessitate the PLAAF invest years or decades in the development of high-technology weapons.[11] The study concludes the PLAAF would not be able to compete with the USAF in the "foreseeable future."

Despite the conclusions asserting China's air and space power development was nonthreatening, the 1995–96 Taiwan Strait crises[12] and alleged Chinese espionage at the US Department of Energy's Los Alamos laboratory[13] generated intense apprehension among US policy makers and leadership regarding the long-term intentions of China toward both its neighbors and the United States. Congressional legislation was passed to regulate activities and matters pertaining to China's military. This continued through the 1990s, and the 2000 National Defense Authorization Act (NDAA) specifically required that the secretary of defense prepare an annual report to Congress on the PLA's current and future strategies, to include military and technological developments.[14] To comply with this legislative requirement, the Pentagon has since produced the report annually—except in 2001—to inform US lawmakers about China's national goals and strategic posture. The report offers what is generally viewed as the best available public information on the Chinese military, and it presents the Defense Department's analysis of long-term trends in China's military development—including nuclear capacity; land-, air-, and sea-based access denial capabilities; space and cyberspace capabilities; and precision-strike weapons—that potentially pose credible threats to a modern military operating in the region.

Contemporary Assessments by the DoD and Individuals

DoD analysts use a "net assessment" approach, taking into account China's strategic goals, doctrines, operational concepts, and fundamental military capabilities. This encompasses a comparative analysis of military, technological, political, economic, and other factors governing relative military capabilities designed to yield an understanding of China's motivations for its evolving military modernization programs. Since 2005, the congressionally directed report has been published in a relatively standardized format that begins with an appraisal of Chinese grand strategy, including how China perceives national power, and incorporates ideas on

how China is pursuing its security strategies with prominent emphasis on Taiwan and the Asian-Pacific region.[15] The report focuses on new developments in Chinese military doctrine for modern warfare that address reforms at its military institutions and personnel systems, improved exercises and training standards, and the acquisition of advanced weapon systems. Other areas of emphasis include China's preparations to fight and win short-duration, high-intensity conflicts along its periphery. The 2005 report characterized China's "active defense" as "distinctively offensive" and asserts that deception has a major role within its military strategy.[16] The increasing concern about China's lack of transparency and its missing clarity of intent has prompted DoD analysts to doubt many of China's stated strategic intentions.[17]

In his evaluation of the 2007 report on Chinese military power, Dennis Blasko, a former Army officer and current military analyst on China, criticized the DoD report as failing to "provide a thorough analysis of PLA modernization" because of its excessively broad attempt to discuss "all elements of the (congressional) tasking." As a result, according to Blasko, the report leaves "many components of Chinese military strategy and organization" underaddressed.[18] For example, the DoD report focuses mainly on the PLAAF's acquisition of third- and fourth-generation aircraft[19] and long-range and precision capabilities as well as China's efforts to develop antisatellite (ASAT) weapons and computer network operations (CNO). However, the assessment of these developments illustrates that the PLA is shifting from a strategy of providing point defense of key military, industrial, and political targets to a new joint antiair/antiaccess strategy based on a modern, integrated air defense system capable of offensive and defensive counterair operations.[20] Because this was not a complete assessment, it reflects only a fraction of emerging PLA capabilities. In addition, China's successful test of a direct-ascent ASAT missile against its own weather satellite in early 2007 convinced DoD analysts that "the PLA's interest in counterspace systems is more than theoretical" and that capability could potentially negate the United States' current asymmetrical advantage in space. The 2008 report postulated that China's military capabilities are expanding beyond the dimensions of the traditional battlefield into the space and cyberspace domains.[21]

Though the DoD report contains much beneficial information about Chinese air and space power, some aspects are faulty and misleading, while other key elements are not presented. For those concerned about

how Chinese military modernization may pose a threat to Taiwan and America's interests in the region, criticism of the 2007 report is justified. Indeed, the report fails to address or assess the antiballistic missile implications of the January 2007 ASAT test, which could lead to an erosion of US advantages in ballistic missile technology. Further, it fails to mention the threat to Taiwan posed by China's fast-growing precision missile/munitions inventory and the emergent long-range air defense capability of the PLA,[22] a change which may have serious implications for US airpower in the region. In addition to these sins of omission, factual inaccuracies raise doubts about the quality of the assessment. For example, the 2005 report lists the FB-7 and FBC-1 as two different aircraft being developed in China, but these are in fact the same aircraft, coded by the Chinese as JH-7/7A.[23] Another significant factual error was seen in the 2007 reporting of China's acquisition of Su-27 (J-11/11A) fighters. These aircraft had been a focal point of PLAAF modernization for many years,[24] and in actuality, China had *stopped* production of J-11 fighters under a licensed coproduction agreement with Russia by the end of 2006, when it began to produce an indigenous version of the multirole J-11B fighters which entered service with the PLAAF 1st Division in late 2007.[25] Unfortunately, and perhaps indicative of a lapse in attention, the 2008 report does not give any indication of this development.

As if omissions and inaccuracies were not enough, no assessment has ever been included in this report about the fundamental structure of the PLAAF, which is transforming from its overland, limited territorial focus to a more flexible and agile force that is also able to operate offshore in both offensive and defensive roles. It is unclear if this transformation is considered out of scope for the assessment, whether this fact has not been recognized or acknowledged, or whether it is not considered significant. Other details lacking in the report include a failure to address pilot training, proficiency, tactics, and maintenance for China's advanced aircraft, all of which would seem to be important to the DoD assessment. If this report were limited to an attempt to justify regional policies, it might be more understandable; however, since its primary focus is on elements of PLA modernization that are believed to be potentially threatening to US interests, these issues should be better explained. As a document produced by the DoD that claims to represent a factual assessment, it appears to fall well short of an honest and comprehensive appraisal. Thus, the art of

military discovery calls into question whether the appropriate measure of thinking is being applied to DoD reports provided to Congress.

Since 2006, US policy has been to encourage China to make the right strategic choices while hedging against the possibility Beijing might choose a confrontational strategy. It is possible this hedging strategy drove the authors of the DoD report toward equating PLA "modernization" with "expansion" and therefore dismissed the "possibility of alternate analysis of the same information that might result in different policy options."[26] Under the influence of this policy, there have been an increasing number of monographs and literature on China's military and its possible immediate, intermediate, and long-term impact on the United States and the international community. Unfortunately, many of these assessments have themselves used the DoD reports as primary sources and found their analysis encapsulated within potentially politicized analyses. For example, the *Air and Space Power Journal* Fall 2007 issue carries a study by an Air Force author who explores the PLAAF's air warfare capabilities and elucidates the nature of offensive Chinese airpower.[27] While arguing the PLAAF does not possess any long-range bombers for projecting airpower beyond the Pacific, the author maintains that the development of an offensive airpower doctrine by the Chinese should nonetheless be alarming for American forces in the region. While the PLAAF's heavy emphasis on the use of tactical aircraft to attack traditional targets such as command and control, industrial, and leadership infrastructure is a strategy common to most air forces with regional enemies, the author recommends the US government take action to curb PLAAF's ability to wage longer-range offensive air operations by further limiting the transfer of military technology to China, continuing a deterrence and embargo policy, constraining engagement with the Chinese military, and implementing forward deployment of USAF assets to Guam.[28]

US Air Force officers have consistently expressed interest in studying Chinese air and space power. Much of this study is done during their professional military education (PME) schooling at Air University, Maxwell AFB, Alabama. Here, an increasing number of unpublished research reports address Chinese efforts to modernize PLAAF capabilities, which include deployment of fourth-generation fighters and AWACS and refueling aircraft.[29] These research reports attribute most PLAAF weaknesses to inexperience in combat and, correspondingly, to a lack of critical air competencies, which would be significantly disadvantageous for China in an armed conflict

against experienced enemy forces.[30] Col Jon T. Thomas' 2006 study points out that even in a relatively "close-fought" war scenario against Taiwan, the PLAAF would have problems addressing the challenges of survivability, availability, and sustainability of airpower assets against enemy air defenses due to limited logistic capabilities and the absence of air refueling, C2, and ISR assets.[31] Amplifying the author's doubts about the PLAAF's combat capabilities is the fact that Chinese military tradition and doctrine has long been dominated by PLA ground elements. To what extent the Chinese military has thoroughly considered "how it would conduct an independent air campaign" is unclear.[32] It appears that the implications of independent studies by USAF officers focused on PLAAF culture, strategy, and tactics differ significantly from those of research in the advanced weapons that the PLAAF has recently procured.[33] The focus on how these weapon systems will be employed by Chinese soldiers in the context of military doctrine and institutional tradition lapses into inconsistencies in logic and belies the fact that the US military has no internal coherent, comprehensive, or substantiated agreement concerning the PLA and its intentions. The process of military discovery finds that the inconsistencies produced by these differing approaches highlight gaps in US military understanding.

In addition to airpower issues, some US analysts express growing trepidation over potential exploitation of US security dependencies and vulnerabilities on space systems. China's space accomplishments in recent years have spurred USAF officers to examine its military space doctrine, civilian and military space organizations, and military space capabilities. In many cases, their studies acknowledge that any efforts to analyze China's space programs are hampered by the lack of transparency.[34] Lt Col Carol Welsch, in her award-winning Air War College research paper "Protecting the Heavens: Implications of China's ASAT Programs," urges caution when referencing existing English translations of Chinese publications for analysis. She points out these analyses are always subject to the selectivity of the passages translated, the manner of translation, and the unknown authoritativeness of many Chinese writings.[35] Unlike many studies that argue the Chinese are preparing to fight in space, research reports by USAF officers at the Air War College find minimal evidence to suggest that China has the capability to execute a space warfare doctrine or is developing organizational and management structures to perform such space operations.[36] What is articulated in Chinese military writings, according to Colonel Welsch, is "only a *desired* capability" (emphasis in original).[37] Lt Col

Steven Smith expands on the potential advantages of these desired capabilities by pointing out that *if* China developed and deployed an electronic intelligence (ELINT) satellite system, it *could* enable its long-range antiship missile systems to pose a much more effective threat to US Navy ships in the region.[38] Recognizing China's long-term desire for space warfare capabilities is different from attributing an ability to fight space wars. As such, China's posture regarding space may mirror that of the United States—*a desire* to fully exploit the domain for enhanced war fighting as opposed to executing space warfare itself. Despite these illuminating observations, a preponderance of thinking acknowledges that the nation cannot afford to lower its guard regarding Chinese space programs due to increased US dependencies and vulnerabilities in the space domain.

How should the United States respond to Chinese air and space modernization? Research by individual Air Force officers does not paint a common picture. Unfortunately, many of the inconsistencies stem from source documents themselves. Not only is access to Chinese sources limited, but much US analysis is also incomplete and speculative. Regardless, it seems plausible the PLAAF will become a near-peer competitor in air and space by 2020. One recommendation suggests the United States should respond with less countering and more engaging to support China's development as a responsible regional military power while still carefully watching for any sign its conventional airpower capabilities could grow far beyond its borders.[39] Another consents to this approach, noting the United States must also pursue an engagement policy to deal with China while maintaining a predominant military capable of defending America's interests as well as its allies around the world.[40]

Regarding space, one study argues that because the United States is unable to prevent China from developing its own space capabilities, Washington should adopt a policy to engage Beijing in civilian space programs while concurrently preparing for military operations in a degraded space environment.[41] Still another does not believe civilian engagement with China will by itself serve US security interests in space and recommends the adoption of a robust deterrence policy that includes defensive and offensive counterspace measures to dissuade China's space ambition.[42] What seems truly problematic is not the lack of a common position nor the conclusions derived by these officers, for which natural variance is expected, but the method of discovery that determines how they arrive at their assessments of Chinese air and space power development.

Assessment of Chinese Air and Space Research Issues

The lack of transparency has historically been a major impediment to the assessment of Chinese military power. This transparency has improved markedly in written media over the last decade, and more Chinese information on the PLA is available through official and unofficial channels than could have been imagined a decade ago. However, handicapped by language capability, few individual assessments by USAF officers, published or unpublished, are actually made on the basis of these Chinese sources. Studies by individual officers have relied on secondary sources and reinterpretations of existing analyses. One of the major sources for individual research on Chinese air and space has been the Pentagon's annual report on Chinese military power, which, as already noted, may be inadvertently influenced by political judgments, evaluations, and intentions and may not be supported by a complete and comprehensive basis in fact. As China continues to emerge in the global arena, it will likely choose to significantly improve its military capabilities. In light of this, should the DoD revisit the methods of military discovery which led to the creation of flawed—or at least questionable—analysis? The DoD's propensity to pursue additional defense capabilities has been facilitated by China's lack of transparency. Rather than using primary, open-source analysis, the favored defense methodology has been to project Chinese motivations and intentions for their military modernization based on an examination of only a fraction of the information available. Defaulting to a preconception of China as a potential or even likely adversary from the viewpoint of the worst case scenario, the DoD's assessments should certainly give both the researcher and analyst pause. This methodology creates analysis that appears less objective and probably does not provide the necessary information to make honest and accurate appraisals. Trustworthy appraisals lead to the last stage of military discovery, which generates insights to the true nature of things and original thinking about the issues at hand.

Even when using original Chinese sources in analyses, the unique writing style of the Chinese monograph can create misunderstandings. For example, Chinese monographs generally do not cite sources, nor do they include footnotes to provide distinctions between the author's own opinions and the contributions of others to the ideas being presented. Within the past few years there has been an increase in the availability of Chinese writings on air and space power by PLAAF authors. The most notable

among these is former deputy chief of PLAAF Maj Gen Cai Fengzhen's *Kongtian zhanchang yu Zhongguo kongjun* [*The Aerospace Battlefield and China's Air Force*] (2004), and *Kongtian yiti zuozhan xue* [*Study of Integrated Aerospace Operations*] (2006).[43] Perhaps what is most alarming about these publications is not the content, per se, but rather the cyclic nature of the research process as it relates to Chinese doctrine and capabilities. For example, these documents directly borrow most of their terminology and concepts from US air and space doctrine, while giving little credit to the American thinkers who developed the original concepts. Iterative US analysis of these books and Chinese air and space capabilities in general ends up being a cyclic, US self-critique of its own doctrine and China's ability to imitate and rearticulate this doctrine as its own. General Cai uses US air and space capabilities, as demonstrated in conflicts since the 1991 Gulf War, to build and elucidate air and space strategy and concepts of operations. He then argues for the PLAAF's development and implementation of similar air and space capabilities. According to Cai and his colleagues, the Chinese air force looks forward to a long path of modernization due to four challenges: outdated concepts, backwards weapon systems, deficient force structures, and shortages of educated personnel in science and technology.[44] Former PLAAF commander Qiao Qingchen wrote prefaces for both of Cai's books, noting that the first book represents a forward-looking effort to explore the theory of air and space warfare, while the second has laid the theoretical foundations for a future study of air and space operations.[45] Using these two books—which are based on US air and space doctrine—along with other Chinese publications, Larry Wortzel, a well-known and highly respected Washington Chinese military analyst, declares that what makes General Cai's analysis impressive is "how rapidly the PLA has developed advanced capabilities to engage in warfare in space."[46] While it is perhaps true that China has shown great interest in transforming the PLAAF into a capable air and space force, examination of the sources indicates that China continues to borrow heavily from the language and rhetoric in US concepts while continuing to struggle in the development of its own theories and strategies for space warfare and counterspace operations, lagging even further behind in its ability to implement them.

Another challenge to contemporary assessment of China's air and space power is the burgeoning Chinese publication of magazines and periodicals from a variety of institutions and sources. This has created a progressively

more complex and confusing situation for Western analysts. Some are popular specialized magazines such as *Hangkong zhishi* [*Aerospace Knowledge*], *Jiangchuan zhishi* [*Naval & Merchant Ships*] *Xiandai bingqi* [*Modern Weaponry*], *Xiandai junshi* [*Modern Military Affairs*], *Jianzai wuqi* [*Shipborne Weapons*], and others. The sponsorship of these publications comes from either state-owned defense enterprises or Chinese defense industry associations. The challenge becomes to what extent these magazines illuminate the PLA's development of its military capabilities. The articles found in these magazines are often sensational and written by non-authoritative writers using eye-catching illustrations or photography to better attract continued investment by advertisers and popular readership. Therefore, their usage requires researchers to be careful about the nature of the sources to the extent that they are authentic and reliable.

Even so, the principal dilemma for American analysts is how to address and evaluate specialized Chinese science and technology journals on air and space.[47] Their contributors are civilian and military faculty members, researchers and graduate students affiliated with PLA academic institutions, and research institutes. These journals report on theoretical, basic, and applied research into the areas of air and space weapons and electronic warfare. The difficulty is determining whether the writings represent only the authors' personal views—as much of US research does—whether it reflects the official views of the PLA, or whether this research should be considered as part of ongoing, officially endorsed Chinese government programs within particular areas of interest, such as space warfare. Using common DoD analytical methods, which are often heavily based on worst case assumptions rather than available primary information, conclusions generally default to the latter, where speculations and inaccurate references can inadvertently and easily be made. For example, in his recent article on the PLA's space warfare programs, Wortzel cited a number of Chinese studies in which authorship was attributed to PLA officers, implying official direction.[48] On further examination, not all of the authors were affiliated with the PLA, and only one of the four was associated with the PLA's Second Artillery Command College, an organization with authority on the subject. As with many individual USAF publications, the purpose of these specialized periodicals is to disseminate research results, showcase theories, and stir academic debate. Instead, these studies tend to be collectively treated as evidence of the PLA's ongoing space warfare efforts and effectively contribute to confusion regarding actual Chinese military programs.[49] One

can readily see how when cyclic references, iterative academic exchanges, and a predisposition to address worst case scenarios converge, they produce misleading and, at times, fallacious conclusions which may lead analyses away from the discovery of China's true directions.

Assessment of Actual Progress and Problems of the PLAAF

One thing that is clear is that Chinese air and space power is being transformed. According to China's 2008 defense white paper, Beijing is adopting a three-step development strategy with the goal of modernizing the PLA into "mechanized and informationalized" forces by the mid twenty-first century with different milestones to be achieved in 2010 and 2020.[50] This development effort is focusing on troop training reform (to include conducting training in complex electromagnetic environments), integration of logistics support systems, building three-dimensional weaponry platforms with integrated sea-air-space capabilities, improving military information systems, and strengthening officer training with an emphasis on joint operations. These efforts also include enhanced ideological and political training and "perfecting" the military legal system.[51] The white paper specifically maintains that the PLAAF has begun transforming itself from a territorial air defense force to one with both offensive and defensive capabilities, including "certain capabilities to execute long-range precision strikes and strategic projection operations."[52] Several key issues deserve attention to understand China's own claims about the development of the PLAAF and air and space power for the present and the near future and as it concerns the USAF. These issues include strategy, force structure, the officer corps and enlisted force, unit training, and logistics and maintenance.

During 2004, the PLAAF introduced a new strategic vision calling for the development of a strategic air force with long-range capabilities and the active involvement of integrated air and space [*kongtian yiti*] operations with information and firepower systems [*xinxi huoli yiti*].[53] Despite being modeled on US practices, this strategic vision differs from USAF doctrine on counterspace operations for the purpose of space superiority.[54] In the midst of its discussion about how to integrate air and space power from a broad perspective, the PLAAF continues to face constraints that make it a challenge to operate at a near-peer level against the USAF.[55] The most critical constraint perhaps is the fact that the PLAAF does

not possess any of its own space assets or strategic missiles. Instead, these systems remain under the control of the General Armament Department and the Second Artillery Force, respectively. Not only has this been the case in the past, but apparently the PLAAF has continued to lose recent debates as to whether these capabilities should be placed under its control.[56] Nonetheless, the PLAAF's study of warfare in the United States and Russia has caused Chinese air force theorists to conclude that space systems will continue to play a support role in operations for at least 40 years. Given their limited ownership and control of space assets, Chinese military theorists have recommended that the PLAAF concentrate on building facilities and institutions to receive satellite services for communication, weather, navigation, and global positioning. This will allow the PLAAF to transition from a traditional air force to one enabled by space-based information (communications, positioning, navigation, timing, and ISR) capabilities.[57]

Since 2003, China has made efforts to streamline and optimize the PLAAF's force structure. These efforts include the retirement of earlier generations of aircraft, a reduction in the number of troops, and the deployment of third-generation combat aircraft and ground-to-air missiles.[58] Although the PLAAF has become modernized and its force size significantly reduced, it still faces substantial replacement problems. While the older J-7 and J-8 fighters remain in service, the initially purchased Su-27s and later Chinese-assembled J-11s appear to be incapable of fully supporting the mission requirements of the PLAAF, which now places an increased emphasis on offensive vice defensive roles.[59] Currently, the PLAAF has three and one-half regiments of Su-30s, one regiment of J-11Bs, five and one-half regiments of J-10s, and three regiments of JH-7As.[60] The size of the Chinese air force and its offensive capabilities will continue to be limited until a significant number of J-10s and J-11Bs enter service in the next five years.[61] Even so, the PLAAF will continue to rely on upgrading second generation aircraft to maintain a sizeable air force. Based on these projections and known aircraft performance, there appears to be no way the PLAAF will match the capabilities of the USAF, particularly with the combination of speed and stealth seen in the fifth-generation US fighter, the F-22 Raptor.

In 2005, the PLAAF established an additional transport division and a special aircraft division to enhance its long-range airlift and airborne early warning capabilities. Russia's failure to deliver 30 IL-76MDs as scheduled

in 2007–08 will keep this newly created transport division underequipped for years to come,[62] with a limited number of Y-7s and Y-8s constituting the majority of airframes in the interim.[63] There is also slow progress in the integration of support systems such as airborne early warning/airborne warning and control systems (AEW/AWACS), aerial refueling tankers, intelligence collection platforms, and signal jamming aircraft, which are all necessary to increase the effectiveness of combat aircraft and augment war-fighting capability.[64] The 2008 defense white paper describes the PLAAF as remaining a mixed force of aviation, ground air defense, airborne, signal, radar, electronic countermeasures (ECM), technical reconnaissance, and chemical defense.[65] This mixed-force structure will continue to complicate China's air and space decisions, particularly with regard to training, allocating roles and missions among services and branches, and influencing resource allocations for Chinese air force modernization.[66]

The PLAAF regards the implementation of its 1999 "Strategic Project for Talented People" as a key to transforming the Chinese air force into a force able to fight high-tech wars under informationalized conditions. This project emphasizes recruiting, educating, training, and retaining qualified and capable personnel.[67] Unlike the USAF, whose officers all have college degrees with over half holding advanced degrees,[68] only one-third of Chinese air force officers are college or university graduates, and only 5 percent possess master's degrees.[69] To aid in the Chinese transformation, the PLAAF reorganized the officer corps of the units receiving new-generation aircraft and equipment to include more highly educated personnel. These personnel were transferred from air force headquarters, research institutes, and universities and filled up to 80 percent of leadership and technical positions in these units.[70] In addition to improving the quality of next-generation flying units, the introduction of the 1999 National Defense Student Program enabled the PLAAF, for the first time, to recruit 60 percent of all new officers from civilian colleges and universities.[71] Unfortunately for the PLAAF, although these measures will improve the quality of the force, the PLA still does not have an effective assignment system to periodically rotate officers both across and within their specialties. Chinese officer promotions are still implemented at the unit level, where fraternization and departmentalism influence individual initiative and organizational success. Major challenges remain for the PLAAF in retaining highly educated personnel, encouraging capable officers to serve longer, finding

those with the special expertise necessary to fulfill key technical positions, and recruiting young talent to join the service.[72]

Chinese aviation units are transitioning from older generational aircraft to new aircraft with significantly improved capabilities. The PLAAF is also enhancing its training, featuring new systems and methods which increase the importance associated with technical and tactical training in complex environments, combined arms and aircraft type training, and joint training under mission-oriented and confrontational conditions.[73] In April 2002, the PLAAF chose a new Outline of Military Training and Evaluation to modernize flight training, and one year later, it created its own "Red Flag" training base modeled after the program at Nellis AFB.[74] Despite these changes, Chinese fighter pilots only fly an average of 130 hours per year versus their US counterparts, who average 250–300 hours per year.[75] Still other discrepancies are shown in training requirements, where USAF fighter pilots will fly around 50 hours of air refueling, AWAC command and control, dissimilar air combat training, and night training before being declared combat ready. Although Chinese flight training requirements are not clearly understood, current flight training manuals seem to require several times those 50 US hours for a pilot to receive only air refueling training.[76] This suggests that even though the PLAAF has adopted a new guide for pilot training, their equipment, overall requirements, procedures, and methods are still not comparable to US standards and quality of training.

The PLAAF has reportedly begun reorganizing its air logistics and maintenance systems to support deployed units for the conduct of mobile offensive operations, but many areas are still weak. At a field station work conference in December 2008, the Chinese air force logistics department acknowledged that most PLAAF field stations were not built to support the multiple types of aircraft deploying into their airfields. A plan has been adopted to modernize airfields *in batches* with new equipment that can more efficiently move supplies from depots to the field and with integrating computers that can track spare parts and logistics and maintenance support for individual weapons systems and units as a whole. In addition, PLAAF airfields are moving toward microwave landing systems, automated meteorological observation and sounding systems, and secondary radar systems to increase their capabilities to support a variety of aircraft types under all weather conditions.[77] One major PLAAF challenge is a shortage of qualified logistics and maintenance personnel with the knowledge and skills to

serve in a variety of positions. While the PLAAF has also begun to convert some junior officer maintenance billets to NCO billets, it is not yet clear whether this has helped or hindered its overall maintenance capabilities.[78] A second major logistics and maintenance challenge is that reform is still at the initial stages of experimentation and at local levels. This means new systems do not yet appear to be standardized across the force.[79] The final challenge in logistics support is that limited resources will primarily be focused on development units and new units receiving new equipment. Currently, the PLAAF enjoys the benefits of a favorable military spending policy, but budget challenges are likely. As long as the General Logistics Department continues to control military finance, a funding shortfall for the air force is inevitable for the years to come.[80]

China has adopted a three-step strategy to transform its air force. These steps include developing advanced aircraft and integrating them with effective support systems, conducting offensive and defensive operations against ground and sea-based targets, and relying heavily on informationalized systems to employ air and space power effectively. The speed of Chinese air and space modernization has caused concern in the West but is likely to be constrained by the current technological limitations in the Chinese defense industry and by the resources needed to support modernization. Perhaps even more true is that the Chinese air and space transformation will continue to be tempered by inherent differences in the institutional cultures of the PLA ground forces and the PLAAF. While the PLA as a whole is transforming with the introduction of new advanced weapons, the real struggle it faces is against traditional concepts, older ways of doing things, outdated organizational structures, and limited funding. In the PLA's own assessment, there has been repeated concern about limitations for the force. These have been identified in official publications as the "three incompatibles," which specifically refer to commanding officers' capabilities, troops' knowledge in science and technology, and training and education, which together are not viewed as sufficiently synchronized to win modern informationalized wars.[81]

China recognizes many of these weaknesses and has made addressing them a high priority, so a more-rapid-than-anticipated transformation may still be possible. The remaining challenge to the US Air Force is what Chinese air force modernization means to its mission in the Asian-Pacific region.

USAF Efforts and Issues in Maintaining Air and Space Power Superiority in the Pacific

This article has focused on issues related to the process of discovery with regard to current Chinese air and space power. It has identified some of the challenges associated with making useful assessments and presented actual problems and progress within the PLAAF. Finally, it contemplates current issues for the USAF in maintaining air and space power for regional superiority—issues that are informed and impacted by the analysis of Chinese air and space power, which as shown, are perhaps imperfectly connected. As discussed earlier, decisions for the USAF are complicated by a lack of indigenous research capabilities dedicated to Chinese air and space power development and by the lack of a unified DoD position on China in addressing air and space matters.

In truth, the US posture in the Pacific is influenced, but not driven, by the methods of assessment of Chinese military development and what details are included or excluded from the assessment. The United States has long been a Pacific nation as well as an air, space, and more recently, a cyberspace nation. These national characteristics naturally cause the USAF to perceive an inexorable linkage between its role in protecting US interests in the Asia-Pacific region and its air, space, and cyberspace capabilities.[82] This linkage exists in the region regardless how Chinese capabilities unfold. During the earlier days of the USAF, Gen Carl A. "Tooey" Spaatz, the first Air Force chief of staff, who had commanded strategic air forces in the Pacific, stated,"The argument has been advanced that the Air Force should be concerned with land objectives, and the Navy with objectives on and over the water. That distinction is to deny the peculiar quality of the air medium, the third dimension. The air is indivisible; it covers land and sea."[83] It is clear that General Spaatz recognized the need for airpower to complement existing land and sea power capabilities. While pursuing airpower dominance, the USAF also developed a strong offensive culture with the emphasis of air superiority and strategic striking.[84] Bringing Spaatz's ideas as well as the air force strategic culture forward, the USAF finds it imperative to apply them to the domains of space and cyberspace in today's security environment. The Asian-Pacific region with its existing threats and emerging near-peer competitors has the potential to present a true challenge for the USAF's air, space, and cyberspace capabilities.

Despite the military's current irregular warfare involvement in Iraq and Afghanistan, the USAF cannot lower its guard in deterring potential

conventional/advanced warfare adversaries, extending global freedoms, and maintaining regional peace and prosperity. From an Air Force Asian-Pacific perspective, challenges in these areas come from North Korea's nuclear proliferation and the high-end military competition that involves both China and Russia. Among these, the most troublesome for the USAF are (1) the emerging threat of modern integrated air defenses to the Air Force's ability to maintain the dominance in modern air warfare; (2) competition for access, use, and preeminence in space; and (3) security vulnerabilities resulting from America's dependence on cyberspace.[85] While not unique to the Asian-Pacific regional challenge, all of these issues are clearly associated with a potential confrontation between the United States and China over Taiwan. US-Taiwan military cooperation under the guidance of the Taiwan Relations Act continues to serve as a source of tension between China and the United States.

The development and maintenance of capabilities for global reach, global power, and global vigilance are keys for the Air Force to confront challenges. So far, it has made efforts to optimize command and control and enhance ISR capabilities in the Pacific, redeploy C-17s and KC-135s to Alaska and Hawaii, place three of its seven programmed F-22 squadrons to the Pacific, and rotate the presence of B-1, B-2, and B-52 aircraft at Guam while advocating the need to develop the next generation, long-range bombers by 2018.[86] However, with the global economic recession, there are likely to be large reductions in the US defense budget as Defense Secretary Robert Gates recently recommended.[87] If true, the USAF must prepare to make adjustments to include low-cost alternatives to meet the challenges in the Asian-Pacific region. An objective assessment of the regional military situation will be vital for the USAF to respond accordingly.

It is clear that the ongoing Chinese innovation and transformation will affect the USAF's regional posture. Despite the imperfect coverage in the DoD report to Congress on Chinese military development, the rapidly growing precision missile/munitions inventory and the long-range air defense capabilities of the PLA will be expected to pose significant challenges to both the Air Force and the Navy and will have implications for operations and force structure. As stated in Joint Forces Command's 2008 publication, *The Joint Operating Environment* (*JOE*), "In the long term, the primary purpose of the military forces of the United States must be deterrence."[88] The forging of Air-Sea Battle doctrine through the Pacific Vision 2008 exercised by the Pacific Air Force and the Navy was an important

step in building more appropriate deterrence capabilities needed to deal with a transformed and potentially hostile China. The Air-Sea Battle also recognizes the essential nature of synchronized air-sea operations against a potential near-peer competitor.[89] Much has been written with regard to potential USAF strategies to safeguard international transit through the Malacca Straits and whether Chinese economically centered strategies should be of concern to future USAF operations. While this article does not address those issues in detail, it bears repeating that addressing basing and airfield access issues with allied and friendly nations for forward deployment is essential to maximize USAF effectiveness and progress toward a sustainable USAF and DoD deterrent capability.

As discussed previously, Air Force research shows that China has little true capability to conduct space warfare and that its publications likely reflect a "desired capability." However, divisions created between the domains of space and cyberspace are superficial at best. While all cyber operations are not space operations, the converse may be said to be true. Nearly 100 percent of product from satellites is information, and information is processed through a variety of networks, computers, and communications—the cyber domain—a domain in which the Chinese are already capable peer competitors.[90] The USAF has made a profound acknowledgement of this understanding by placing the cyber mission as a numbered air force subordinate to Air Force Space Command (AFSPC)[91] and contemplating the creation of a separate combatant command or a subunified command for cyber under US Strategic Command.[92] These actions recognize the critical connection between the space and cyber domains and will continue to be essential in providing the USAF an initial ability to protect global access and project American military power if needed.

While this reorganization is a positive step, it may not move quickly enough to adjust to the new paradigms of military operations with a capable peer competitor. The USAF has a relatively brief window of opportunity to rethink its present culture and abilities, which still reflect "an industrial age, mobilization-based . . . paradigm" and to adjust to ways that are "consistent with the intellectual requirements of the future joint force."[93] Space and cyber operations are critical to the Air Force, but they are inherently joint and connected to interagency and civilian interests. How capabilities are developed to operate effectively in these domains will be important to USAF and DoD operations in the Asian-Pacific region

as well as against potential competitors worldwide, including a resurgent Russia, terrorists, and even criminals.

Conclusion

While no intelligence sources were used in the preparation of this study, open-source military discovery indicates that fears of a conventional war with China may be overstated. While the USAF must make adjustments to create a more effective deterrent and protect US interests in the Asian-Pacific region and around the world, DoD assessments of Chinese military power, particularly air and space power, appear inadequately addressed and may not justify established US policy as stated in the 2006 *Quadrennial Defense Review Report* that "China has the greatest potential to compete militarily with the United States and field disruptive military technologies that could, over time, offset traditional US military advantages."[94] If China is to be viewed as a potential adversary, the USAF and the DoD must pursue effective open-source (as well as the intelligence community) discovery of its strategies and capabilities that lead to reports which, in turn, inform Congress. Congressional trust, in turn, will lead to the development of more effective avenues and capabilities for cooperation or confrontation, as appropriate.

Creating indigenous USAF research and discovery capabilities, to include undergraduate and graduate-level Chinese study programs, is necessary for improved military discovery and decision making. In particular, an enhanced understanding of Chinese air and space power development will enable the Air Force to more accurately assess, proactively prepare for, and as appropriate, respond to China's progress in the air and space realm. Because current analyses are relatively ad hoc and limited in their temporal scope, they tend to be less than impartial and reflect incomplete interpretations based on selected and nonauthoritative sources. These limitations call into question the objectivity and thoroughness of the general body of current DoD analysis and may not provide accurate representations. As stated in the *JOE*, "The defining element in military effectiveness in war lies in the ability to recognize when prewar visions and understanding of war are wrong and must change."[95]

Although conventional arms and strategies have created an effective US deterrence capability, it appears that China's conventional air and space capabilities have not yet reached the level that some allege and still face

significant challenges. Their capabilities in other areas, such as cyberspace, are only beginning to be explored and understood. Effective and complete military discovery, as it pertains to China or anything else, is an art that is accomplished not by meekly repackaging questionable information but through deep study, contemplation, and professional discussion. SSQ

Notes

1. Sir Francis Bacon, *The New Organon or True Directions Concerning the Interpretations of Nature* (1620), Book 1, section LXXXII, http://www.constitution.org/bacon/nov_org.htm. Bacon formulates methods of discovery and postulates that logical invention cannot reveal the way things truly are, but that there is an art of discovery which is found in meditation, agitation, and working of the wit.

2. Kenneth W. Allen, Glenn Krumel, and Jonathan D. Pollack, *China's Air Force Enters the 21st Century* (Santa Monica, CA: RAND, 1995), 181–88.

3. Dong Wenxian, a PLAAF headquarters researcher, published several articles in *Kongjun junshi xueshu* [*Air Force Military Journal*] and *Jiefangjun bao* [*PLA Daily*] regarding such debates. These articles are available in his book, *Xiandai kongjun lun* (xubian) [*Modern Theory on Air Force* (sequel edition)] (Beijing: Blue Sky Press, 2005).

4. John Wilson Lewis and Xue Litai, "China's Search for a Modern Air Force," *International Security* 24, no. 1 (Summer 1999): 94.

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Cyber Vision and Cyber Force Development

Kamal Jabbour, ST

Widely reported compromises to the Department of Defense global information grid (GIG) punctuate a recent study by the Defense Science Board[1] that the primary focus of a cyber force must remain the assurance of mission-essential functions (MEF) of the commander. Additionally, the distinction between intelligence (Title 50) and offense (Title 10) authorities notwithstanding, the proliferation of digital technology and the overlap between networks and computers blurred the traditional boundaries between offensive and defensive activities. Organizationally, the activation on 1 October 2009 of the US Cyber Command (USCYBERCOM) brought together computer network attack (CNA) and computer network defense (CND) activities of the Joint Functional Component Command for Network Warfare (JFCC-NW) and the Joint Task Force for Global Network Operations (JTF-GNO) under the USCYBERCOM. It is in this environment that the USAF vision of global vigilance, global reach, and global power across the full spectrum of conflict from peacetime to major combat operations drives the science and technology (S&T) requirements for cyber operations, as well as the educational requirements for cyber force development. Essential to USAF cyber forces is an organizing construct with a primary responsibility for assuring the USAF mission-essential functions in a contested cyber environment and a deployed responsibility to the joint force commander (JFC) through an expeditionary framework. However, properly educating that force of cyber warriors is a prerequisite.

Cyber Support to the USAF Vision

Rapid technology advances over the past three decades and the proliferation of computers into weapon systems created a dichotomy of net-centric military superiority and a commensurate reliance on vulnerable technology. The simultaneous depletion of the US computer industrial base and its

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migration overseas reduced further the cost of net-centricity and increased disproportionately military dependence on foreign technology. Budgetary pressures compounded the slide away from assured government off-the-shelf (GOTS) stand-alone weapons towards affordable commercial off-the-shelf (COTS) networked systems.

Given this climate of rapid technological advance and global political change, the USAF recognizes the duality of cyberspace as a war-fighting domain as well as a foundational domain. As a war-fighting domain, cyberspace affords irregular adversaries a low-cost option to attack our global interests. As a foundational domain, cyberspace offers our peers an attack vector to negate our superiority in the traditional domains of land, sea, air, and space.

By adding cyberspace to its mission statement and standing up a cyberspace command, the USAF took on the challenge to develop and present forces ready to fight in this domain. This recognition of cyber warfare as a revolution in military affairs (RMA) raises fundamental questions on concepts, organization, and technology. Amidst these questions lies the challenge of presenting cyber options to the National Command Authority (NCA) and cyber-ready forces to the combatant commanders.

Whether or not Julius Caesar influenced the US Air Force vision of "Global Vigilance, Global Reach, Global Power" with his "Veni, Vidi, Vici" message to the Roman senate in 47 BC does not negate the evidence that these three tenets of warfare transcend time and technology. Two millennia later, the USAF S&T strategic vectors embody the Roman tenets and provide a road map to the USAF vision by (1) offering persistent situational awareness (SA), (2) delivering precision effects, and (3) providing access and survival in the battlespace. The changing mix of vigilance, reach, and power as tensions escalate toward major combat operations requires that cyber operations provide a necessary enabler for air and space power while providing an additional domain for delivering effects.[2]

Global Vigilance

Global vigilance is the ability to keep an unblinking eye on any entity—to provide warning on capabilities and intentions as well as identify needs and opportunities. The primary challenges of global vigilance include maintaining persistent, global, multi-domain SA using assured, trusted systems that can avoid a broad spectrum of threats. In turn, global vigilance depends to some extent on elements of global reach to support sensor positioning and forward basing of assets for SA. We identify situational awareness,

assurance and trust, and threat avoidance as the three main capabilities necessary to achieve global vigilance in and through cyberspace.

Mica Endsley defines situational awareness as "the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future."[3] An objective of cyber SA is to provide automated situation assessment and analysis that meets the operational requirements of all areas within the cyber domain—friendly blue networks, traversal gray networks or global commons, and adversary red networks—across the entire spectrum of conflict. Mission awareness lies at the heart of situational awareness. Understanding the dependence of missions on specific assets, the interdependence of assets, and the interdependence of missions drives the requirements for SA.

Assuring missions and information and trusting systems and data provide the foundation for global vigilance across the spectrum of conflict. DoD Directive 3020.40, *Defense Critical Infrastructure Program*, defines mission assurance (MA) as "a process to ensure that assigned tasks or duties can be performed in accordance with the intended purpose or plan." Joint Publication (JP) 3-13, *Joint Doctrine for Information Operations*, defines information assurance (IA) as "measures that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation." Trust in a system requires trusting its hardware and software to maintain the integrity of data at rest and in motion as systems evolve in capability and technology.

Avoiding a threat through deterrence, domain modification, or agility provides a strategic defensive strategy that can reduce or eliminate the need to fight that threat. Effective cyber deterrence requires either a credible threat of retaliation with timely detection and attribution of attacks or a disincentive by increasing the cost of an attack and lowering its perceived benefits. Modifying the cyberspace domain to eliminate vulnerabilities or make them inaccessible to an adversary through sound hardware and software development practices can eliminate beforehand vulnerabilities by designing them out of a system. Agility includes establishing indications and warnings (I&W) mechanisms that detect anomalous activities or entities, rapid analysis of the activity to include attribution and geo-location, anticipation of future behaviors and effects, and effective real-time provisioning of defensive measures.

Global Reach

Global reach is the ability to move, supply, and position assets with unrivaled velocity and precision anywhere. The concepts that support global reach in cyberspace include access technologies to position and deploy cyber assets, survival in a contested cyber environment, and cross-domain superiority for command and control of integrated mission execution. Global reach encompasses the predominantly defensive measures of access, survival, and cross-domain operations. When a situation escalates from peace towards conflict, these measures enable the capabilities that support global power for major combat operations.

In all domains of land, sea, air, space, and cyberspace, access refers to deploying and positioning friendly forces across blue, gray, and red spaces. While traditional domains are fixed in size—the amount of available land, sea, air, and orbital space is essentially constant—the cyberspace domain changes dynamically and increases indefinitely in size and shape, creating unique technical challenges for the positioning of cyber assets.

An effective defense in depth avoids the majority of threats and defeats those threats that turn into attacks. When an attack evades detection and defeat and disrupts US systems and networks, the defensive priority turns to survival and mission assurance. In this context, MA seeks to ensure that critical MEFs fight through and recover from attacks against the underlying cyber infrastructure. Mission-aware systems that control dynamically end-to-end resources for IA-enabled mission assurance adapt to failures and attacks by reconfiguring resources to provide an acceptable level of service and security.

Cross-domain operations are another issue. In Internet terminology, a domain refers to a group of computers or IP addresses that share higher-order addressing bits or higher-order naming convention, while computer security terminology calls cross-domain operations those transactions that occur across different classification levels or across Internet domains at the same classification. We maintain consistency with the joint definition of domains as they pertain to war-fighting domains, and we use the term *cross-domain* to represent operations across land, sea, air, space, and cyberspace. Robust modeling and simulation and realistic war gaming permit experimental predeployment prototyping and evaluation of cross-domain effects, including the integrated delivery of effects from blue and red systems in every domain against red and blue systems in every domain. Integrated planning requirements for cyber assets mirror those for traditional intelligence, surveillance, and reconnaissance (ISR) and combat assets, yet the practice of procedural versus positive control

over air assets and the time scales of the air operations center (AOC) do not translate well to cyberspace, where decision cycles hover around a fraction of a second.[4] Cross-domain command and control enables cross-domain superiority and the freedom of use of air, space, and cyberspace, leading ultimately to cross-domain dominance and the freedom to attack and the freedom from attack in and through air, space, and cyberspace.[5]

Global Power

Global power is the ability to hold at risk or strike any target, anywhere, and project swift, frequently decisive, precise effects. Delivery of global power in any war-fighting domain requires command and control of cyberspace, on which modern US military capability depends. The global projection of cyber power to complement or enable kinetic power creates S&T challenges of developing precise cyber effects; estimating first-, second-, and higher-order effects; and taking response actions to external events.

Precision effects are the intended outcomes of offensive operations in any war-fighting domain. With conventional kinetic weapons, precision effects became synonymous with low collateral damage, given the maturity of tools and techniques for measuring the effectiveness of munitions. In measuring the effects of cyber operations, operators rely on intuitive estimates of effectiveness that depend in large part on the experience and expertise of the operator. Cyberspace operations can produce robust strategic, operational, and tactical effects across the entire spectrum of conflict. Second- and higher-order effects of cyberspace operations may extend beyond the immediate effects on a specific system necessitating a clear understanding of sustained cyberspace operations. Cyberspace operations can also create effects in other domains, enabling cross-domain effects delivery based on a cyber effects-based assessment (EBA).

Cyber EBA refers to the process that provides the war fighter with measured effects that quantify the outcome of a cyber operation into tactical, operational, and strategic impact. This process must occur in near real time during the prosecution of a mission by fusing multiple sensors and combining multiple means of measuring effects. This process must determine first-, second-, and higher-order effects on systems and on users while providing a side benefit of cyber EBA of kinetic operations. At the same time, cyber professionals must consider response action plans.

Computer network defense response action (CND-RA) refers to actions taken in cyberspace to defend blue forces against adversary attack. These

response actions must take place in real time during the prosecution of a cyber mission and must include response action for attack containment as well as offensive response action. The greatest complement to cyber vision support to global vigilance, reach, and power is a well-organized, well-educated cyber officer corps.

Organizing and Building an Initial Cyber Force

Assuring the mission of the USAF in a contested cyber domain remains the top priority of a USAF cyber force. Activating the Twenty-fourth Air Force under Air Force Space Command brings to the forefront the question of presenting cyber forces to the JFC. An expeditionary framework gives cyber officers a hands-on understanding of the threat through a joint force assignment and permits them to bring back to their mission assurance jobs a heightened appreciation for the risk trade-space between threats and vulnerabilities. To expedite this, the USAF must establish an expeditionary deployment schedule for the current cyber force in support of joint force commanders.

A centrally-managed, locally-commanded cyber force whose primary function is to assure essential functions of the various USAF commands is required. These extended periods of MA support include training on the latest tools, threat situational awareness, and the pursuit of graduate academic degrees, while exercising defensive measures to secure local cyberspace and the mission it supports.

Role and Responsibilities

A foundational principle of unity of command maintains that the success of a mission remains ultimately the responsibility of the commander. Therefore the USAF must delegate to local commanders the responsibility for assuring that piece of cyberspace on which their missions depend.

Recent air, sea, and space mishaps bring into focus the question of responsibility. The collision between two vessels may have resulted from the lack of timely SA. The crash of a remotely piloted aircraft (RPA) may have resulted from a dropped communication link. The aborted launch of a satellite may have resulted from indications of a mechanical malfunction. In all cases, cyberspace played the dual role of communicating SA to commanders and carrying back command and control instructions representing their intent. Under no circumstance can the responsibility for mission assurance shift away from the mission commander to a JFC responsible for securing the network—a piece of the cyber domain that enables the mission.

While a case may be made that JFCs must maintain command authority of offensive cyber forces operating under Title 10 authority in their area of responsibility (AOR), an equally compelling argument can be made that assuring a critical function in a contested cyber domain remains the responsibility of the MEF commander. Centralized command by a JFC of the cyber assets that enable essential cyber functions and the cyber forces that assure them creates an enormous challenge of understanding the complexity of every MEF and its dependence on cyberspace to the same fidelity as a local mission commander.

The central authority of a JFC or a USAF cyber command must extend only to the gateway of the critical systems that support individual essential functions. Thus, the computers and networks aboard a ship or an aircraft remain the responsibility of the platform commander, and those of a critical MEF remain the responsibility of the cyber MEF commander.

The present stance in favor of central management of cyberspace assets argues that a vulnerability in one system is a liability to all. By equipping MEF commanders with cyber officers educated to assure these functions in a contested cyber domain and delegating to those commanders responsibility and accountability for those cyberspace assets under their control, the cyber risk assumed by all becomes comparable to the risk of fratricide in conventional warfare. All services—Army, Navy, Marines, and Air Force—operate aircraft in the air domain and use elaborate deconfliction measures to minimize fratricide. Similarly, in cyberspace we must develop deconfliction procedures to enable MEF autonomy while minimizing the shared risk of fratricide.

Organizing the cyber force begins with a long-term strategy to develop cyber officers complemented with a stop-gap initiative to secure the USAF mission and present forces to the JFC. Currently, the Air Force does not have an adequate cadre of appropriately educated officers performing the cyber mission. Although they constitute only 7 percent of USAF officers, computer engineering (CE) and electrical engineering (EE) degree holders provide a solid foundation for the initial cyber officer corps. The USAF should recruit nonrated company-grade officers with CE and EE degrees for development into cyber officers through advanced graduate education and specialized DoD organic training. Replicating the success of the recent effort to recruit nonrated CGOs into RPA pilot-training slots, the Air Force should also invite young officers with technical degrees to apply for initial qualification as cyber officers.

As the Air Force builds an initial cadre of cyber officers, it must keep sight of their primary function—to assure the mission of the USAF in

a contested cyber domain. Upon completing graduate education, cyber officers must lead the task of mapping the dependence of critical MEFs on cyber systems to give commanders a first line of defense against cyber attacks. For the long term, however, the Air Force must commit to deliberately educating its cyber leaders.

Educating Cyber Officers

Educating cyber officers on the fundamentals of cyber operations leads to the development of a cyber force capable of dominating cyberspace across the entire spectrum of conflict. In his book *Strategic Warfare in Cyberspace*, Dr. Gregory Rattray contrasted the World War II strategic bombardment RMA to the current cyber warfare RMA.[6] He attributed the success of the former to a technology-enabled, industry-driven superiority and predicated the success of the latter on an education-enabled, technology-driven framework. The USAF vision of global vigilance, global reach, and global power provides the doctrinal foundation for the S&T of cyber warfare, while an S&T foundation provides the educational framework for cyber warfare.

Preparing forces for cyber warfare mandates distinguishing between education and training, a distinction one can ignore only at great peril. Training provides Airmen with proficiency to operate current tools, whereas education builds a foundation that prepares officers to deal with uncertain future challenges.

Delivering military options in cyberspace requires an elite, educated cyber officer corps augmented with a well-trained cyber force. A balance between educated strategic thinkers and trained tactical operators ensures the ability to fight in cyberspace across the entire spectrum of conflict. When educating a new breed of cyber officers, it is imperative to educate first on the science of information assurance and then train on the art of cyber operations.

An examination of Air Force Personnel Center records reveals an alarming drop in the number of engineers and overall scientific qualifications of USAF officers. National trends exacerbate this shortage. The US technological advantage as a nation and the corresponding military superiority depend vitally on the ability to reverse this trend. Deliberate cyber force development gives the USAF an opportunity to lead the nation in growing engineers.

The scientific and mathematical complexity of computer and network systems, the critical dependence of USAF essential functions on their proper operation and the uncertain risk trade-space between threats and vulnerabilities mandate a relevant formal college education as the entry point into

a cyber force. At a minimum, cyber warriors must hold an accredited bachelor's degree in computer or electrical engineering. This foundation provides the prerequisite grounding in the immutable fundamentals of cyber operations and prepares cyber officers for the challenges of an uncertain future.

Several additional recommendations surface when considering how the USAF can best develop and educate the future cyber cadre. An undergraduate degree in engineering as a prerequisite for admission into undergraduate pilot training (UPT) provides a first-order effect of an increase in the number of officer candidates pursuing engineering degrees with the goal of securing pilot slots, increasing consequently the number of nonrated officers with engineering degrees. As engineer-pilots move out of cockpits and into command positions, the second-order effect is a more technical leadership educated to deal with the uncertain challenges of the technological age. Requiring an engineering degree as a prerequisite to UPT gives American youth an incentive to take more high school courses in mathematics and science and contributes to reversing the free-fall in the national academic standards in mathematics and science.

Additionally, the USAF is increasing the number of four-year full scholarships to top US programs in computer and electrical engineering. Targeting scholarships to a dozen premier institutions creates a class of young officers with shared experiences and allows the USAF to influence curriculum development to meet national requirements. A secondary effect of targeting selected schools is the inevitable growth in civilian demand for these programs and the resulting increase in an educated civilian cyber workforce equipped to augment DoD assets.

Designing the Cyber Curriculum

The complexity of electronic systems, their rapid incorporation into all facets of traditional warfare, and the uncertainty of future threats necessitate educating cyber officers on both timeless science and timely technology. The technical challenges form the basis of a balanced curriculum in cyber warfare education. The desired outcomes of this curriculum are (1) educating future cyber leaders on the science and technology of cyber warfare to prepare them to tackle the future challenges of a rapidly evolving domain, (2) providing them a solid grounding in the arts and sciences of a computer engineering foundation, and (3) developing them into cyber officers—Airmen, leaders, and warriors.

What follows is the philosophy underlying an orthogonal curriculum and the outline for a sample track leading to a bachelor of science (BS)

degree in cyber warfare. This representative curriculum recognizes physics and electrical engineering as the foundation for cyberspace, a domain characterized by the use of electronics and the electromagnetic spectrum and mathematics and computer science as the foundation for storing, modifying, and exchanging data via networked systems and associated physical infrastructures. Computer engineering, the center of gravity between electrical engineering and computer science, brings the theories underlying the domain into the practice of warfare.

The requirements of a four-year BS degree in computer engineering are the cornerstone of cyber education and incorporate an eight-semester track on cyber warfare. The formal academic framework necessary to tackle the technical challenges in cyber warfare extends across a continuous spectrum from mathematics, computer science, computer engineering, electrical engineering, and physics, as shown in the figure below.[7]

Foundation continuum for cyber education

The primary goal of this cyber officer development plan is to create cyber officers who comprehend the concept of cyber as a revolution in military affairs. This concept seeks to instill an appreciation of the uniqueness of cyberspace as a war-fighting domain—the third domain for the Air Force after air and space—as well as a foundational domain vital to land, sea, air, and space operations. It teaches an appreciation of the broad range of functions and capabilities in cyberspace and differentiates between the limited scope of network operations and the pervasive scope of cyber warfare.

Cyber Warfare Curriculum

We divide the curriculum content for developing cyber warriors into a four-year course of study including fundamentals in the freshman year, tactical in the sophomore year, operational in the junior year, and strategic in the senior year. A typical CE curriculum permits the addition of the cyber warfare component as a concentration with minimal impact on accreditation. In fact, during the last two years, cyber courses can replace certain programming and system design courses while focusing the capstone design project on cyberspace. Alternately, cyber security electives or service-specific instruction may replace the AF-centric strategic cyber warfare component.

Some of the topic areas presented as fundamentals include computer systems, information operations doctrine, cryptography, network architecture,

and computer network operations. During the second year, candidates study access to adversary systems, stealth and persistence, cyber effects, cyber intelligence, and steganography. Year three introduces access control methods, secure network operations, cyber SA, digital forensics, high-assurance programming, and mission assurance. In the last year, students tackle problems concerning national security and military strategy, warfare in cyberspace, strategic effects of cyber war, challenges and constraints of cyber options, employing cyber options as a campaign plan, and cyber anticipation and adaptation. Throughout the course of study, cyber laboratories support experiential learning and greater appreciation for cyber capabilities.

The age of cyber is upon us, and the USAF has a vested interest in organizing a cyber force to meet the challenges of the age while supporting the current vision of global vigilance, reach, and power. This challenge requires an organizing structure with expeditionary features, clear lines of authority, responsibility, and unity of command backed up by deliberately educated cyber leaders. Air Force cyber leadership presents a historic opportunity to put the nation on a correct vector to secure cyberspace and to help assure the national mission-essential functions that depend on it. SSQ

Notes

1. Defense Science Board, *Challenges to Military Operations in Support of U.S. Interests: Report of the 2007 Summer Study* (Washington, DC: Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics, December 2008).

2. Kamal T. Jabbour, "The Science and Technology of Cyber Operations," *High Frontier Journal* 5, no. 3 (May 2009).

3. Mica R. Endsley, "Toward a Theory of Situation Awareness in Dynamic Systems," *Human Factors* 37, no. 1 (1995): 32–64.

4. Procedural control—a method of airspace control that relies on a combination of previously agreed and promulgated orders and procedures (JP 3-01, *Joint Doctrine for Countering Air and Missile Threats*). Positive control—a method of airspace control that relies on positive identification, tracking, and direction of aircraft within an airspace conducted with electronic means by an agency having the authority and responsibility therein.

5. The Strategic Studies Group at Checkmate said, "We believe superiority represents freedom to act, but dominance includes the ability to exploit." This implies that dominance exceeds superiority. However, referencing the definition of air superiority from JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*: "air superiority—That degree of dominance in the air battle of one force over another that permits the conduct of operations by the former and its related land, sea, and air forces at a given time and place without prohibitive interference by the opposing forces," superiority is a degree of dominance. Excerpts from Cross-Domain Dominance brief by Lt Col Brad "Detroit" Lyons and Lt Col Tim "Dexter" Rapp, AF Strategic Studies Group, Project Checkmate, 10 June 2008.

6. Gregory J. Rattray, *Strategic Warfare in Cyberspace* (Boston: MIT Press, 2001).

7. For additional information, including detailed charts listing the complete four-year curriculum requirements for cyber development, contact the author, Kamal.Jabbour@rl.af.mil.

Remembrance of Things Past

The Enduring Value of Nuclear Weapons

James Wood Forsyth Jr.
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So long as there is a finite chance of war, we have to be interested in outcomes; and although all outcomes would be bad, some would be very much worse than others.

—Bernard Brodie

Much has been written about nuclear weapons, but what has been learned? Once an essential element of American foreign and defense policy, these matters were neglected after the Cold War and all but forgotten after September 11th. As the Schlesinger Commission concluded, "Because nuclear weapons have been less prominent since the end of the Cold War and have not been used since World War II, their importance and unique role as a deterrent have been obscured though not diminished."[1] Recent incidents of mismanagement of the US nuclear weapons enterprise, the acquisition of atomic weapons by North Korea, Iran's apparent quest for such weapons, the expiration of the Strategic Arms Reduction Treaty (START) and negotiation of its replacement with Russia, and the decision to engage in a nuclear posture review have brought the attention of policy makers

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to the important question of the role that nuclear forces should play in American strategy.

This is not a new question, but it requires a renewed evaluation. Bernard Brodie pondered it long ago, and his work birthed a rich literature that informed and clarified the round of nuclear debates that resulted in America's first comprehensive nuclear policy—massive retaliation.[2] Today, however, policy makers seem befuddled by nuclear weapons. After 60 years of living with The Bomb, they seem to have forgotten its value. Nuclear weapons produce strategic effects. Their presence compels statesmen to behave cautiously in the face of grave danger. This cautiousness produces restraint, which shores up international stability. In short, nuclear weapons deter.

In this article we first address the concept of deterrence, its requirements, and alternative strategies. We then discuss the effects of nuclear deterrence in international political relations and the capabilities—both nuclear and conventional—required to produce these effects. Finally, we draw conclusions with regard to the appropriate size and composition of the US strategic nuclear arsenal, given our arguments.

What is Deterrence?

From a theoretical standpoint, deterrence links a demand that an adversary refrain from undertaking a particular action to a threat to use force if it does not comply. Deterrence places the adversary in a situation in which it has a choice of complying with what has been demanded of it—inaction—or defying those demands and risking implementation of the deterrer's threatened sanction. What the adversary considers to generate expectations about the consequences of its alternatives has been the subject of wide and varied speculation.[3] These expectations are distilled into expected-value calculations whereby the costs and benefits of an outcome are discounted by the probability of its occurrence (i.e., [benefits – costs] * probability). Then the expected values of possible outcomes stemming from a single course of action are summed. In deterrence the adversary compares the expected value of complying with the deterrer's demand and refraining from action to defying that demand and acting anyway. For deterrence to be successful, the deterrer's threatened sanction must reduce the expected value of defiance so that it is less than the expected value of compliance. The deterrer can do that by threatening to reduce the benefits of defiance or increase its costs. The former would constitute a denial threat, while the latter would

be a threat of punishment. And because the adversary will discount these threats by its assessment of the likelihood that the deterrer will implement them, the deterrer must convey these threats credibly.[4]

Deterrence is more than a theory. It is also a policy. States adopt deterrence policies for one reason—to fend off attack. The United States used deterrence to frame its approach to an apparently hostile Soviet Union and to make use of nuclear weapons by not using them. As the Schlesinger Commission put it, "Though our consistent goal has been to avoid actual weapons use, the nuclear deterrent is 'used' every day by assuring friends and allies, dissuading opponents from seeking peer capabilities to the United States, deterring attacks on the United States and its allies from potential adversaries, and providing the potential to defeat adversaries if deterrence fails."[5] Strategic nuclear weapons were used to operationalize strategies of denial and punishment. Denial strategies, generally termed *counterforce*, focused upon mitigating the ability of the adversary to use its military forces, especially nuclear forces, in the event of a conflict so as to reduce its chances of victory. Punishment strategies, generally termed *countervalue*, focused upon destroying the industrial capacity and urban centers of the adversary to impose terrible costs upon its society.[6] During the Cold War, US defense programs were designed and justified in terms of their ability to fulfill these missions.[7] Since 9/11, capabilities have been programmed in an astrategic manner, and many of the mundane considerations of deterrence have been cast aside, making the forging of a new deterrence policy problematic today.[8]

Deterrence theory and policy is based upon the presumption that the adversary to be deterred is rational. The *Deterrence Operations Joint Operating Concept*, which guides US deterrence doctrine and strategy, assumes that "[a]ctions to be deterred result from deliberate and intentional adversary decisions to act (i.e., not from automatic responses or unintended/accidental events). Decisions to act are based on actors' calculations regarding alternative courses of action and actors' perceptions of the values and probabilities of alternative outcomes associated with those courses of action."[9] It is often argued that deterrence is inherently flawed because no human being is perfectly rational—indeed, they often act irrationally.[10] But this is a red herring. As Robert Jervis has argued, "How rational do men have to be for deterrence theory to apply? Much less than total rationality is needed for the main lines of the theory to be valid."[11] Indeed, given that adversaries of any note lead large organizations—states—and

had to pursue strategies to gain and retain power, it is difficult to argue that such persons are irrational or nonrational.[12] They may not be perfect, but they are sensible and react to the incentives of their strategic and domestic environments.[13] This holds also for terrorist groups such as al-Qaeda or Hamas, who utilize suicide terrorism to achieve strategic objectives.[14] It is on this basis that strategy and policy can be readily erected.

Political Effects of Nuclear Weapons

A key goal of any national security policy should be to enhance stability, where stability is defined as the absence of war or major crisis. Assuming the absence of a sudden change in the anarchic nature of the international system, any such policy should rely upon deterring potential aggressors at its base. Nuclear weapons enhance "general deterrence," a concept defined by Patrick Morgan. "*General deterrence* relates to opponents who maintain armed forces to regulate their relationship even though neither is anywhere near mounting an attack" (emphasis in original).[15] The goal of a general deterrent policy would be to ensure that incentives for aggression never outweigh the disincentives.

In theory, nuclear weapons are better than conventional forces in terms of enhancing general deterrence. This is so because deterrence succeeds when the costs—or, more appropriately, the risks of costs—exceed any probable gains that are to be had through armed aggression. War has been such a common international phenomenon throughout the centuries because some decision makers have concluded that the benefits of aggression would outweigh its costs.[16] Such a conclusion can be reached all the more easily when it is believed that victory on the battlefield can be attained quickly and decisively, and there are many historical examples from which decision makers can choose in order to bolster their confidence—from Bismarck's wars against Denmark, the Austrian Empire, and France to Iraq's conquest of Kuwait and its eviction by UN coalition forces.

Injecting the possible use of nuclear weapons by the defending state into the equation, however, can alter these calculations considerably. The possession of a sizable nuclear arsenal by a defender, as well as the means to deliver these weapons to the battlefield or the aggressor's homeland, makes the risks of aggression much greater and the potential costs much starker. This is because the possession of nuclear weapons tends to equalize the power of states, although not to the absolute degree that some would argue—attributes of national power such as geographic size, population,

industrial capacity, GNP, and others still weigh heavily in any assessment of national power. Nonetheless, this equalizing tendency objectively manifests itself in two ways. On the battlefield, nuclear weapons can enhance the power of a smaller conventional force considerably. And in terms of absolute destructive power, only a finite amount of damage is necessary to destroy a modern state as a functioning entity.[17] Provided that two states are capable of developing the means to reliably deliver at least "enough" nuclear weapons to their adversary's homeland to "assure" its destruction, then, in a relative way, the two states can be considered equally powerful.

One could argue that the qualitative differences between nuclear and conventional forces also have certain psychological consequences that make the former a better buttress for general deterrence.[18] Given the destruction that nuclear weapons could wreak in a short temporal period, the potential costs of aggression against a nuclear-armed adversary would be "paid up front," as opposed to over a long period of mutual attrition, and are thus "clearer" to decision makers. And although some conventional munitions can approach the destructiveness of nuclear devices,[19] a certain symbolism has come to be attached to nuclear weapons that has historically enhanced their clarifying quality and induced caution in national decision makers.[20] This clarifying effect operates particularly to the advantage of states defending their vital interests. The threat of a nuclear-armed state to use its nuclear weapons in defense of vital interests, such as its survival or territorial integrity, is almost inherently credible.[21] Thus a secure nuclear arsenal has the effect of "sanctuarizing" the states that possess them. One could argue that nuclear weapons enhance general deterrence by virtually precluding acts of aggression against states that possess them,[22] and thereby greatly enhance stability.

But how large an arsenal is necessary for a state to effectively "sanctuarize" itself? While much of the more recent literature on the value of nuclear weapons as a pacifying force in international relations has implicitly assumed that any number of survivable weapons would be adequate for successful deterrence,[23] in effect arguing for existential deterrence,[24] the concept of proportional deterrence[25] would be a better theoretical guide.

Under a doctrine utilizing proportional deterrence, the defender would need to possess, at a minimum, enough survivable nuclear forces[26] to inflict damage on the aggressor roughly equivalent to the gains—in territory, industrial capacity, et cetera—that the aggressor could hope to achieve if it successfully conquered the defender.[27] This, of course, assumes a strategy of

deterrence through punishment—that is, striking at the aggressor's population/industrial centers. Thus, for example, supposing the French, whose strategic doctrine rests upon proportional deterrence, desired to deter an attack by the Soviet Union during the Cold War, they would need enough survivable nuclear forces to inflict damage that was "the equivalent of France"—about 50 million people or striking, if not destroying, 100 to 150 major Soviet cities.[28] Hence, the answer to the question how much is enough for proportional deterrence? rests upon the rough value of the defender's territory, in a geopolitical sense.[29]

China understands this. Adopting a minimum deterrent strategy, China's nuclear numbers remain relatively small compared to the large numbers held by the United States and Russia. It is estimated that China has approximately 400 nuclear weapons, with about 200 operationally deployed. It probably possesses 30 intercontinental ballistic missiles (ICBM) capable of striking the continental United States and about 10 that are capable of striking Hawaii and Alaska. It also possesses about 100 intermediate-range weapons capable of striking US bases, friends, and allies in the Pacific region.[30] These weapons would be enough to destroy more than the value of Taiwan to the United States, the most likely stakes in any conflict between the two countries. In contrast, the United States possesses 450 ICBMs, each capable of carrying up to three warheads; 18 Trident submarines, each equipped with 24 submarine-launched ballistic missiles (SLBM) that carry as many as eight warheads each; and 100 or so nuclear bombers capable of carrying a variety of payloads to include air-launched cruise missiles (ALCM). It is assumed that Russia has a similar mix. Yet, despite these rather large nuclear inequities, China continues to modernize its conventional capabilities, extending its influence throughout the region. How does one explain this behavior?

China is confident that its small nuclear arsenal is sufficient to deter rivals. In international politics, deterrence restrains states from acting externally but affords opportunities to act internally—allowing them to pursue whatever weapons they choose. Shrewd states recognize this as well as the fact that large nuclear arsenals buy them little; as in other areas of competition, there comes a point of diminishing return, and with nuclear weapons that point comes quickly. There is little the United States or Russia can do militarily to dissuade China from pursuing its armament program. China realizes this, which explains why its nuclear appetite remains satisfied. Might China change? It might if demand were stimulated,

which is why nuclear defenses are a bad idea, at least in Asia. In games of deterrence, defenses can be both stabilizing and destabilizing; deciphering when and how is one reason the United States turned its back on defenses, abandoning its civil defense program in favor of a strategy of mutually assured destruction.[31] Today, the United States and China have tacitly entered into what can only be described as a period of mutual retaliation; nothing official has been declared, but both sides know that the stakes are too high for either to make a run militarily at the other.

Nuclear weapons socialize statesmen to the dangers of adventurism, which in turn conditions them to set up formal and informal sets of rules that constrain their behavior. No statesmen want to be part of a system that constrains them, but that is the kind of system that results among nuclear powers. Each state is conditioned by the capabilities of the other, and the relationship that emerges is one that is tempered by caution despite the rhetoric of its leaders.

During the Cuban missile crisis, President Kennedy and Premier Khrushchev sought solutions short of war, despite their sharp political differences.[32] That the Soviets underestimated how the United States would react when confronted with the deployment of missiles off the coast of Florida is interesting but not as telling as how both leaders behaved when they realized what was at stake. Secretary of State Dean Rusk's comment that "We were eyeball to eyeball" is illustrative for two reasons. First, the two sides were staring into the face of grave danger. Second, there were no misperceptions. Both quickly recognized that the outcome of the crisis depended as much on the moves of one side as it did the other. War was the focal point; a threshold easily recognized, best not crossed, and worth avoiding.[33] This occurred despite the fact that the United States had overwhelming superiority in strategic and tactical nuclear forces and significant ability to blunt any Soviet retaliatory strike.[34] From that day forward, the superpowers understood that they could race to the brink but no further, lest they run the risk of nuclear war; a risk that neither side would take. Following the crisis, both sides took steps to reduce uncertainty and improve crisis stability.[35] What conclusions can be drawn? Small numbers of nuclear weapons produce dramatic effects. In times of crisis, they compel statesmen to act with restraint. In this sense, nuclear statesmen are risk averse, which also makes them vigilant.

Although it has been argued that such stable relations may have been unique to the bipolar relations between the United States and the Soviet

Union,[36] they seem to apply elsewhere. Prior to Pakistan acquiring a nuclear capability, it fought three bloody wars with India. Today, in the presence of nuclear forces, the sharp differences that separate India and Pakistan are not sufficient to drive either side to war.[37] While the two sides actively engage in a game of tit-for-tat, nuclear weapons have softened both states and steadied their relationship by reducing the likelihood of interstate war. Far from perfect, relations between India and Pakistan can be summarized as tense but stable.[38]

Might this be the case within the Middle East? So it seems. Although the Arab states fought three wars to destroy Israel prior to widespread knowledge of its unacknowledged nuclear weapons capability, none have been fought since. Should Iran acquire a nuclear capability, the spread of nuclear weapons in the Middle East is all but certain. Although Israel's security will be challenged, given the potential for a mutual deterrent relationship to take hold thereby limiting its freedom of action, this constraint will also obtain throughout the region. Until it does, the challenge posed to Saudi Arabia in particular will be significant.[39] It is important to stress that the Iranian bomb will be a Shia bomb and the Sunni community will be hard pressed. Stabilizing the region until a Saudi weapons capability is ready will not be easy, and the options available to the United States are less than optimal. It could extend a security guarantee to the Saudis, but that would enlarge America's presence in the region, which would not sit well with extremists. Defensive systems could be deployed, but the down sides are similar to extending security guarantees. Islamic extremists would exploit their presence, holding them up as yet another example of the kingdom's dependency on the United States. A regional approach where the United States and its partners collectively provide for the defense of Saudi Arabia and the broader Sunni community might be effective, but the list of potential partners is short. Given all of this, the shrewdest thing to do might be nothing. As odd as it sounds, the United States might be better off by not acting and even allowing the Saudis to deploy a counterweapon should the Iranians decide to do so. In short, more might be better.[40]

Toward A Minimal US Nuclear Deterrent

But perhaps not in arsenals that are already outsized. In the 1960s, the Kennedy administration recognized the need for a secure retaliatory capability and the desire of the services—particularly the Air Force—to purchase

capabilities that far outstripped that objective.[41] It therefore sought to program capabilities that would be invulnerable to a counterforce strike and would be able to inflict unacceptable damage on the Soviet Union—but no more.[42] Looking back, Secretary of Defense McNamara had this to say: "Our goal was to ensure that they, with their theoretical capacity to reach such a first-strike capability, would not outdistance us. But they could not read our intentions with any greater accuracy than we could read theirs. The result has been that we have both built up our forces to a point that far exceeds a credible second-strike capability against the forces we each started with. In doing so neither of us has reached a first-strike capability."[43] In other words, both sides were, in fact, deterred fairly early on during the Cold War, even though that may or may not have been the intention, and the actual marginal utility of additional forces was quite small.

Therefore, as policy makers await the release of the administration's nuclear posture review, the question is not whether the United States can reduce its number of nuclear weapons to zero. Instead, the question is: What size force is needed for deterrence? Those numbers are comparatively small. Today the United States can adopt a minimum deterrence strategy and draw down its nuclear arsenal to a relatively small number of survivable, reliable weapons dispersed among missile silos, submarines, and airplanes.

Strategic air commander Gen Thomas Power said in 1965 that "The optimum deterrent must lie somewhere between the illusory minimum and the impossible maximum." To chart a course to the "illusory minimum," a pragmatic approach must be found that comforts policy makers that have come to rely on the war-deterring effects of nuclear weapons for six decades. Skeptical constituencies are more likely to embrace smaller numbers of nuclear weapons if the arsenal is reduced gradually. With this in mind, the International Commission on Nuclear Non-Proliferation and Disarmament proposed that the United States reduce to 500 nuclear weapons by 2025.[44] This represents a 90-percent reduction in the nuclear arsenal but offers more than enough deterrent capability while providing flexibility to pragmatically implement the force structure cuts.

In fact, the United States could address military utility concerns with only 311 nuclear weapons in its nuclear force structure while maintaining a stable deterrence. These 311 weapons should include missiles that are integral to a stable deterrence because they cannot be moved, are easily detected, and can hold enemy forces at bay with pinpoint accuracy. One hundred single-warhead ICBMs, such as the Minuteman III systems currently in

service, provide a disbursed, ready force that may be more politically palatable than more severe reductions. The sea leg of the triad can be constituted by 192 de-MIRVed Trident D-5 SLBMs on 12 *Ohio* class submarines, each capable of holding 24 missiles. This would allow two patrols of four boats each at any given time. These missiles are highly survivable as they can be moved, cannot be easily detected, and, with pinpoint accuracy, can hold hardened targets at risk if necessary. Furthermore, British and French nuclear capabilities remain available to assure European allies, if any perceive weakness based on this force reduction in the Atlantic. Finally, air-launched cruise missiles (ALCM) from 19 B-2s will continue to contribute standoff capability and flexibility to the triad. This is more than enough weapons to use aircraft for nuclear escalation control and political signaling while allowing all B-52Hs to convert and focus on a their conventional role. As with the SLBM force, ALCMs can be shuttled from wing to wing for operational security or intermixed with conventional munitions—a solution first proposed by Brodie.[45]

In short, America's nuclear security can rest easily on a relatively small number of counterforce and countervalue weapons totaling just over 300. Moreover, it does not matter if Russia, who is America's biggest competitor in this arena, follows suit. The relative advantage the Russians might gain in theory does not exist in reality. Even if one were to assume the worst—a bolt from the blue that took out all of America's ICBMs—the Russians would leave their cities at risk and therefore remain deterred from undertaking the first move. Skeptics will rightfully attack this argument, so it is best to address a few concerns.

First, there will be those who insist that a minimum nuclear posture is of little value to the United States because it must maintain a nuclear arsenal large enough to cover all of its contingencies. In other words, while Pakistan has to contend with India, the United States has several potential contenders that, when combined, pose a large challenge. There is logic in that line of reasoning, but it ignores the vast conventional superiority of the United States. It is clear that in most circumstances conventional weapons will be preferred to nuclear ones and supplement the Global Strike mission. Indeed, Lieber and Press recognize this in their recent analysis of nuclear capabilities.[46] It is also undermined by the fact that the United States is deterred in most contingencies by China, which has a much smaller force structure. Presumably, if China can deter the United States, small numbers are effective. In fact, arguments for a large

force have no meaning unless they are tied to an exclusive counterforce strategy directed against Russia, which, when all is said and done, does not appear to be necessary. During the Cold War, the superpowers raced to increase numbers in an attempt to prevent one side from acquiring either a counterforce capability or a symbolic numerical advantage. All the while, both sides lost sight of the fact that it is the political value of nuclear weapons that matters most, not their military utility. New nuclear states seem satisfied with small numbers. One wonders why. It either has something to do with the number of threats that they face or with their appreciation of the political value of nuclear weapons. A definitive answer is out of reach, which is why debate on this issue is so important.

The second criticism has to do with the future of the triad, which was the fulcrum of deterrence throughout the Cold War. Some might argue that the triad was effective and its redundancy and flexibility shored up international stability and helped keep the Cold War cold. It is, however, important to recall that the Soviets had no such operational concept. They relied heavily, almost exclusively, on missiles and still managed to deter the United States. If one accepts the basic idea that it is the political value of nuclear weapons that matters, the method of delivery is immaterial.

Lastly, there is concern over organizational competency and professional development. How small can a force become before it no longer resembles a force at all? That is a difficult question to answer. In some instances, a smaller force can be extremely competent, and increasing its size could lead to its undoing. One thinks of the Navy SEALs. What makes the SEAL program so effective is that it is highly selective, well funded, specialized, and small. Might the same hold true for nuclear warriors? That is a question for others to answer. Sizing of the nuclear force should be based primarily on the requirements for a stable, reliable, nuclear deterrent, with support issues like industrial base support, crew force management, and training only weighing in as secondary considerations.

Conclusions

Deterrence evolved throughout the Cold War, moving from massive retaliation to the intricate targeting schemes of countervailing strategies. All the while the superpowers came to understand what Brodie aptly described as "strategy in the missile age." Despite the harsh rhetoric and big words from both sides, they came to appreciate what these weapons meant and behaved accordingly. While both vied for attention and aggressively

pursued international influence, neither side initiated or threatened to initiate a nuclear exchange. In short, nuclear learning occurred. Something similar is taking place in other parts of the world. China, India, Pakistan, North Korea, and presumably, Iran understand that a small number of nuclear weapons is all that is needed for deterrence to take hold. Others will learn too, which is why nuclear weapons ought to be the centerpiece of American strategy. That does not mean that they should be America's only concern, just the most important one.

Would the world be better off without nuclear weapons? Although it might be desirable to rid the world of nuclear weapons, it is not wise. "The web of social and political life is spun out of inclinations and incentives, deterrent threats and punishments." Take away the latter two and international society depends entirely on the former—a utopian thought impractical "this side of Eden."[47] Serious-minded men have wished it were not so. Gen Charles Horner, then head of US Space Command, explained in 1994, "I want to get rid of all [nuclear weapons]. I want to go to zero. I'll tell you why. . . . Think of the moral high-ground we secure by having none."[48] Two years later, addressing the National Press Club in December 1996, Gen Lee Butler, former commander of Strategic Air Command, wondered if "it is possible to forge a global consensus on the propositions that nuclear weapons have no definitive role; that the broader consequences of their employment transcend any asserted military utility."[49] In both instances, what was overlooked is the role that force plays in international life. In politics, force is said to be the ultima ratio. In international politics, it is the first and constant one.[50] Force casts a long shadow and serves as an incentive to temper statesmen, moderate demands, and settle disputes. That the use of nuclear weapons is to be avoided does not render them useless. Quite the opposite—nuclear weapons might be the most politically useful weapons a state can possess, which helps explain why they are spreading.

Nuclear weapons allow international life to go on in spite of their inherent dangers because leaders of nuclear states realize that that they are constrained despite their goals, desires, or rhetoric. The international system, with its uneven distribution of material capabilities throughout the world, regulates what states can and cannot do. Nuclear weapons add to this by making the likelihood of war among nuclear powers less, not more, likely.[51] Shrewd statesmen recognize this as well as the realities of power in

international life. The fact is some states will pursue nuclear weapons; others will not.

In the final analysis, security is the problem; weapons one solution. The spread of nuclear weapons is derived from the relative insecurity of some states in the world. So long as war remains a finite possibility, we have to be concerned with outcomes, and while some would be bad, others would be worse. In the age of minimum deterrence, the world will have to stand for a few more nuclear states; the majority of them will not pursue nuclear weapons. Pursuit of such weapons is contingent upon security. If states can achieve it without them, they have no need for them, which is another way of saying a nuclear-free world hinges on a more secure one. That we are not there yet is reason enough to work to make it so. SSQ

Notes

1. *Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management, Phase I: The Air Force's Nuclear Mission* (Washington, DC: Office of the Secretary of Defense, September 2008), 1.

2. Bernard Brodie, *The Absolute Weapon* (New York: Harcourt and Brace, 1946); *Strategy in the Missile Age* (Princeton: Princeton University Press, 1959); and *Escalation and the Nuclear Option* (Princeton: Princeton University Press, 1966). Also see Lawrence Freedman, *The Evolution of Nuclear Strategy* (New York: Palgrave, 2003); William Fox, *The Superpowers: The United States, Britain and the Soviet Union* (New York: Harcourt and Brace, 1954); Alexander George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and Practice* (New York: Columbia University Press, 1974); Morton Halperin, *Limited War in the Nuclear Age* (New York: John Wiley and Sons, 1963); Herman Kahn, *On Thermonuclear War* (Princeton: Princeton University Press, 1960); George Kennan, *Russia, the Atom and the West* (New York: Harper and Brothers, 1958); Henry Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Harper, 1957); Robert Osgood, *Limited War: the Challenge to American Strategy* (Chicago: Chicago University Press, 1957); Thomas Schelling, *The Strategy of Conflict* (Cambridge: Harvard University Press, 1960); and Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966).

3. See, for example, William W. Kaufmann, "The Requirements of Deterrence," in *Military Policy and National Security*, ed. William W. Kaufmann (Port Washington, NY: Kennikat Press, 1956); George and Smoke, *Deterrence in American Foreign Policy*; and Paul Huth and Bruce Russett, "What Makes Deterrence Work? Cases from 1900 to 1980," *World Politics* 36, no. 4 (July 1984).

4. See Daryl G. Press, *Calculating Credibility: How Leaders Assess Military Threats* (Ithaca: Cornell University Press, 2005), for a discussion of the constituents of credibility.

5. *Report of the Secretary of Defense Task Force*, 1.

6. Freedman, *Evolution of Nuclear Strategy*, passim; Desmond Ball and Jeffrey Richelson, eds., *Strategic Nuclear Targeting* (Ithaca: Cornell University Press, 1986).

7. Lawrence Freedman, "Does Deterrence Have a Future?" *Arms Control Today* 30, no. 8 (October 2000).

8. Jonathan Schell, *The Seventh Decade: The Shape of Nuclear Danger* (New York: Metropolitan Books, 2007), 119.

9. *Deterrence Operations Joint Operating Concept*, version 2.0 (Washington, DC: DoD, December 2006), 11.

10. The classic statement of this critique is Stephen Maxwell, *Rationality in Deterrence*, Adelphi Paper 50 (London: International Institute for Strategic Studies, August 1968).

11. Robert Jervis, "Deterrence Theory Revisited," *World Politics* 31, no. 2 (January 1979): 299.

12. This is not a small point. In military circles, where one would expect to find some degree of emphasis placed upon rationality, the idea of the irrational actor has taken hold. This is especially true since 9/11. In discussing strategy with officers of all ranks, one is pressed with the retort "but you are assuming that the other guy is rational." No doubt suicide terrorists appear to be irrational at first, but even they are more than capable of reasoning. Waltz has made this point time and again. See Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W. W. Norton and Co., 1995), 112–13, for an example.

13. For an analysis of the motives of adversaries in deterrence situations, see Gary Schaub Jr., "When is Deterrence Necessary? Gauging Adversary Intent," *Strategic Studies Quarterly* 3, no. 4 (Winter 2009): 49–74.

14. Robert A. Pape, *Dying to Win: The Strategic Logic of Suicide Terrorism* (New York: Random House, 2005).

15. Patrick Morgan, *Deterrence*, 2nd ed. (Beverly Hills: Sage Publications, 1983), 30.

16. John J. Mearsheimer, *Conventional Deterrence* (Ithaca: Cornell University Press, 1983).

17. A point first made by Brodie, "The Weapon," in *Absolute Weapon*, 25.

18. See Schelling, *Arms and Influence*, 133.

19. For example, fuel-air explosives or precision-guided conventional munitions capable of destroying hardened targets.

20. Nina Tannenwald, *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons since 1945* (New York: Cambridge University Press, 2008).

21. Of course many have argued that if the aggressor also possesses nuclear weapons capable of striking the defender's territory with impunity, it would be irrational for the deterring state to carry out its retaliatory threat, particularly one directed against the adversary's population/industrial centers, as this would surely invite similar reprisals. In such a situation of mutual deterrence, it is argued, the deterrent threat would lack credibility. See, for example, Raymond Aron, *The Great Debate: Theories of Nuclear Strategy* (Garden City: Doubleday and Co., 1965), 128–30. This conundrum is generally solved, however, by claiming that the aggressor could not count upon the decision makers of the state it is attacking to be rational at a time of acute crisis; those decision makers could retaliate despite the probable consequences in a fit of anger or despair. As Glenn Snyder put it, "A thermonuclear attack based on an expectation that the victim would behave rationally would be a very dangerous gamble for the attacker." Glenn H. Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton: Princeton University Press, 1961), 64. There is a good deal of case study literature that suggests this is also the case in the event of a conventional attack. See Richard Ned Lebow, *Between Peace and War: The Nature of International Crisis* (Baltimore: Johns Hopkins University Press, 1981), for example.

22. This, of course, is direct deterrence. As discussed in many places, the protection of allies, forces overseas, or even noncontiguous possessions (such as Great Britain's crown colony, the Falkland Islands), are matters of extended deterrence, which is inherently more difficult. See Schelling, *Arms and Influence*, for an incisive discussion of this distinction.

23. For example, Stephen Van Evera discusses "states with developed nuclear arsenals [that] can annihilate each other even after absorbing an all-out attack" and provides France, Great Britain, and the Soviet Union as apparent examples of states with a mutually assured destruction capability. Stephen Van Evera, "Primed for Peace: Europe after the Cold War," *International Security* 15, no. 3 (Winter 1990/91): 13. But obviously, it would take a much larger nuclear capability to "assure" the destruction of Soviet society than that of France or Great Britain, given

the much greater size, population, and resources of the Soviet Union. And while it was easily assumed that the Soviet Union possessed the capability of absorbing an "all-out" counterforce attack by either (or both) France or Great Britain, the opposite was not so easily assumed. As David Yost wrote, "The targeting objectives of France's 'enlarged anti-cities strategy' . . . call for France to be able to strike at least a hundred 'vital centers' in the USSR in a second strike. . . . France's ability to do so, even in a first strike, is minimal today," that is in 1984 when France possessed 132 deliverable strategic nuclear warheads. David Yost, *France's Deterrent Posture and Security in Europe, Part I: Capabilities and Doctrine*, Adelphi Paper 194 (London: International Institute for Strategic Studies, Winter 1984/85), 28. As for the British, they recognized their inability to assure the destruction of Soviet society and based the "independent" version of their strategic doctrine, as well as designing the performance characteristics of their Polaris force, around the "Chevaline concept" of destroying only one very important target in the Soviet Union: Moscow. Lawrence Freedman, "British Nuclear Targeting," in *Strategic Nuclear Targeting,* 112–23.

Mearsheimer makes similar omissions concerning the capability necessary to successfully bolster deterrence with nuclear weapons. Only in the context of the Ukraine does he get more specific: "128 nuclear warheads . . . should be more than enough to wreak vast destruction on Russia. Even if only 10 percent or 13 of those warheads reached Russian cities, they would leave Russia devastated." John J. Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs* 72, no. 3 (Summer 1993): 62. Mearsheimer's 13 deliverable warheads as an adequate deterrent closely resembles McGeorge Bundy's 10-warhead "disaster beyond history" standard that is generally used as an example of a minimum deterrent capability. Michael Salman, Kevin J. Sullivan, and Stephen Van Evera, "Analysis or Propaganda? Measuring American Strategic Nuclear Capability, 1969–88," in *Nuclear Arguments: Understanding the Strategic Nuclear Arms and Arms Control Debates*, eds. Lynn Eden and Steven E. Miller (Ithaca: Cornell University Press, 1989), 210.

24. The concept of existential deterrence is elaborated upon in McGeorge Bundy, *Danger and Survival: The Political History of the Nuclear Weapon* (New York: Random House, 1988); and Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Ithaca: Cornell University Press, 1990).

25. The concept of proportional deterrence is elaborated upon in Pierre Gallois, *Balance of Terror: Strategy for the Missile Age* (Boston: Houghton Mifflin, 1961). Gallois' thinking is critiqued in Aron, *Great Debate*, 120–43.

26. As well as robust, survivable command and control capabilities.

27. Or, as Edward Kolodziej put it in terms of French strategic doctrine, "French military theorists . . . contended, however, that they could deter other states, even superpowers, because they possessed a destructive capability that would offset any gain envisioned by a potential aggressor. *The French force was alleged to be proportional in strategic capacity to France's political interests.* . . . France might be destroyed in the nuclear exchange, but the aggressor would presumably absorb more damage than could be reasonably offset by the anticipated benefits of his attack on France." Edward A. Kolodziej, *French International Policy under De Gaulle and Pompidou: The Politics of Grandeur* (Ithaca: Cornell University Press, 1974), 102 (emphasis added).

28. Yost, *France's Deterrent Posture*, 15, 18.

29. Of course the aggressor may value the defender's territory more or less given other factors, such as the symbolic value a victory over the defender would bestow, etc.

30. See William J. Perry and James A. Schlesinger, chairmen, *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States* (Washington, DC: US Institute of Peace, 2009), 10–11.

31. A classic consideration of the problem is Donald G. Brennan, Leon W. Johnson, Jerome B. Weisner, and George S. McGovern, *Anti-Ballistic Missile: Yes or No?* (New York: Hill and Wang, 1968).

32. Graham Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, 2nd ed. (New York: Longman, 1999).

33. For a discussion of strategy and focal points, see Thomas Schelling, *The Strategy of Conflict* (Cambridge: Harvard University Press, 1960).

34. Allison and Zelikow, *Essence of Decision*, 92–95.

35. Jack Mendelsohn, James P. Rubin, Matthew Bunn, Michèle Flournoy, and Jesse James, *Arms Control and National Security: An Introduction* (Washington, DC: Arms Control Association, 1989), 23–25; and John Lewis Gaddis, "The Long Peace Elements of Stability in the Postwar International System," *International Security* 10, no. 4 (Spring 1986).

36. Lawrence Freedman, *Deterrence* (Cambridge: Polity, 2004), 75–83.

37. The Kargil conflict is the case often cited as the exception to the rule. The conflict began in May 1999 and ended in July of that year. During this time, Indian army units attacked Pakistani forces, and Indian jets bombed their bases high in the Himalayan Mountains. Although Indian forces carefully stayed on their side of the line of control in Kashmir, Indian prime minister Atal Bihari Vajpayee informed the US government that he might have to order an invasion into Pakistan. Eventually, President Clinton got involved and assured both sides that he would take an interest in resolving the dispute. Although at least 1,000 Indian and Pakistani soldiers were killed during this crisis, we do not agree with those who think of Kargil as a war. If one unquestionably accepts Singer and Small's definition of war—see J. David Singer and Melvin Small, *The Wages of War 1816–1965: A Statistical Handbook* (New York: John Wiley and Sons, 1972), which defines war as a conflict that involves one member of the interstate system on each side in which the battle-connected deaths totaled at least 1,000—the Kargil crisis was a war. However, if one thinks of war in terms of the ordinary sense of the word, its conduct more closely resembled a nasty skirmish.

38. For interesting perspectives, see Sumat Ganguly, "Nuclear Stability in South Asia," *International Security* 33, no. 2 (Fall 2008); and S. Paul Kapur, "Ten Years of Nuclear Instability in Nuclear South Asia," ibid.

39. It is assumed that Israel has deterrent options readily available, should they choose to unveil them. The Sunnis have no such option.

40. See Kenneth Waltz and Scott Sagan, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W. W. Norton and Co., 2003).

41. David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945–1960," *International Security* 7, no. 4 (Spring 1983).

42. Alian Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961–1969* (New York: Harper and Row, 1971).

43. *The Dynamics of Nuclear Strategy*, Department of State Bulletin LVII, 9 October 1967.

44. Gareth Evans and Yoriko Kawaguchi, *Eliminating Nuclear Threats: A Practical Guide for Global Policymakers—Report of the International Commission on Nuclear Non-Proliferation and Disarmament* (Canberra: Paragon, 2009).

45. Brodie, "Weapon," 37.

46. Keir A. Lieber and Daryl G. Press, "The Nukes We Need," *Foreign Affairs* 88, no. 6 (November/December 2009): 48.

47. Kenneth Waltz, *Theory of International Politics* (Boston: McGraw Hill, 1979), 186.

48. Gen Charles Horner (press briefing, 15 July 1994).

49. Gen Lee Butler (speech, National Press Club, 4 December 1996).

50. Waltz, *Theory of International Politics*, 113.

51. This is largely a structural claim. See Waltz, *Theory of International Politics*, for the definitive account.

Exploring the Security Dimension of Sino–US Trade Asymmetry

Implications for the International Trade System

Alexis Littlefield

Examining the Sino–US relationship in the context of economic interdependence from a nuanced realist perspective does not place economics and finance in a subordinate role in the field of national security. Nor does it argue for support of an American-dominated liberal system of trade. Instead, it argues the trade relationship has created a less secure environment for both states, with the United States suffering the greater vulnerability. The question then becomes how can we better understand the implications of the "Chimerica" relationship upon security and the current trade system?

The Sino–US relationship in the context of trade is a frequently addressed issue in the news. One day's newspaper contains three separate articles that touch on this theme as follows: Regarding the trade relationship, China's vice premier Wang Qishan states that "economic interdependence deepens day by day and one cannot do without the other."[1] Regarding the impact of trade asymmetry upon US security, National War College professor Bernard Cole states that it is "more difficult for the US to intercede on behalf of Taiwan on sales of significant weapons systems" such as the F-16C/D as the "financial interrelationship" between the United States and China grows.[2] Finally, in an op-ed regarding the impact of the relationship upon the trade system, Susan Shirk states, "The Chinese as well as the US (pinpoint) the main cause of the (financial) crisis (as being) the US' flawed financial system."[3] The security implications of Sino–US trade interdependence, the financial interrelationship, and the stresses upon the financial system are all addressed in this article.

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In the academic media, the question of how Sino–US trade asymmetry affects security is only just emerging. Daniel Drezner addresses the question what are the security implications of China's creditor status? Based upon China's inability to use its creditor status in any meaningful way to compel the United States to act according to China's interests, the ability of the United States to find other sources of credit, and the inability of China to find non–US debt instruments in any large quantity, his answer to this question would be "None." However, he bases his argument on the assumption that Sino–US trade is mutually dependent and acknowledges that "escalating US budget deficits might shift the Sino-American financial relationship . . . to asymmetric dependence."[4]

This point has been reached and will only intensify. Further, China has gained diplomatic concessions from the United States, and these will also increase in quantity and quality. Just recently, President Obama decided not to meet with the Dalai Lama, a first for a US president since 1991. Human rights are no longer part of the Sino-American dialogue, and economic issues are the focus of the relationship. Beyond the question addressed by Drezner, this study ponders the impact of Sino–US trade upon the current liberal trade system, the role of a stronger China and a weaker United States upon the system as the unipolar economic structure becomes bi- or multipolar, and whether there are security implications in this puzzle.

In this journal, James Rickards took a different approach to the security implications of Sino–US trade asymmetry and focused on the concept of financial warfare. He argues that US "financial markets are more vulnerable than ever, the methods for attacking them are easy and inexpensive, and the returns to the enemy in terms of the destruction of wealth and confidence are inestimable."[5] The leverage of the Chinese to exercise the option (pun intended) of financial warfare is possible because of the large reserves of US dollars they have invested in hedge funds which can be leveraged to a ratio of 100:1 by using options on futures. They could "simultaneously swarm global systems with one-sided sell orders" on popular indices. This strategy "would rely on a panicked reaction which amplifies the initial attack and feeds on itself."[6]

International relations scholars have tended to separate international political economy (IPE) and security studies, but as James Caporaso states, "Security studies and IPE are increasingly becoming one integrated literature rather than two."[7] Michael Mastanduno maintains that with the change in the international structure from bipolarity to unipolarity, there

has been "renewed interest in the intersection of economics and security along with a critical reassessment of the scholarly pattern that considered the two as separate areas of inquiry."[8] This discussion of Sino–US trade asymmetry leans towards the financial implications of the trade relationship. Buzan and Little note, "For most of history, economic interactions have been about trade (but) in recent times they (have) come to be about the far-flung organization of production and finance."[9]

Dale Copeland posits that the propensity of interdependent states to go to war depends not on the degree of interdependence but on their expectations of future trade relations.[10] This hypothesis, if correct, adds one more element of security and risk to the trade relationship.

Both the United States and China are mutually and vulnerably dependent upon each other ("Chimerica"), but the United States much more so. It is easier to conceive of China gearing down its exports for a local market than to conceive of the United States paying off its debts, increasing exports, and increasing savings. The role of trade upon a nation's ability to project itself (i.e., hard or soft power) and the stresses on the trade system (e.g., the liberal trade system) upon world security are discussed below. Finally, regarding the role of a hegemonic power, what impact does an emerging China have upon world order? In other words, as US leadership erodes and Chinese leadership increases, what effect will this have on the global community, and what security issues arise, if any?

Four distinct sections will help frame some answers. What is the link between trade and security? Wherein is the instability in the current trade system, particularly with regards to the Sino–US trade relationship? Given that the current American-dominated liberal system is unsustainable, how will the emergence of a new system affect international security? As China's absolute and relative economic position increases, what would its leadership role look like in world economic affairs?

The link between economics and security is addressed in the next section. The following section explores the symbiotic economic relationship that has developed between the People's Republic of China and the United States of America, termed *Chimerica* by Niall Ferguson.[11] These viewpoints show how both sides are responsible for undermining the system, as the United States promoted its rendering of a liberal trade regime while the Chinese side increased trade reserves by pursuing an aggressive export strategy. Each factor contributes to the instability and unsustainablity of the system. The third section raises the question of trade systems

and security. The final section presents writings of Chinese scholars and their analyses of a spectrum of Chinese views on China's leadership role in world society to ascertain what a greater Chinese role may look like and how it concerns security.

What is the Link between Trade and Security?

The idea of "economic security as a major component of international security (is) one of the most attractive yet intractable concepts in the whole discourse about security."[12] One approach to draw a connection from economic security to international security is through the idea of interdependence. A standard realist reading of interdependence is an asymmetric dominance-dependence dynamic with the dependent party vulnerable to the choices of the dominant party. The realist argument of the economic-security nexus is simply that interdependence creates vulnerability as a source of power of one state over another. Realists (and Marxists, but from different approaches) tend to see economic interdependence as asymmetric and creating vulnerability, whereas liberals see interdependence as being generally equal for both parties. Paul Viotti and Mark Kauppi identify three realist views of economic interdependence, the first two of which are part of the theoretical basis of this study.

1. Interdependence is undesirable for any particular state if interdependence is defined in terms of vulnerability.
2. Increasing interdependence may produce conflict as opposed to peace.
3. In an interdependent world, there are certain virtues in having a hegemonic power capable of enforcing stability in a number of different issue areas.[13]

Liberals have argued that mutual economic interdependence precludes war or at least should greatly reduce the possibility of military conflict. In the decades leading up to 1914, trade in goods "reached almost as large a proportion of global output as in the past thirty years," writes Ferguson. Trade interdependence certainly did not prevent the Great War despite the overt economic irrationality of that venture. Ferguson goes so far as to ask the question "Was there also some connection between the effects of global economic integration and the outbreak of the First World War?"[14] There is little (if any) historical evidence of states going to war over economic issues; likewise, there is little evidence of economic issues preventing states

from going to war. I argue the asymmetric economic dependence between the United States and China rather than fostering good will exasperates tensions between the two powers. Invariably this compels one to ask what financial circumstances could potentially lead to a crisis in Sino–US relations. This is addressed in greater detail in the second section.

There is mutual dependence in the Chimerica relationship. However, as Brad Setser states, "The US runs the risk that it needs China to add to its foreign exchange reserves more than China actually needs more reserves (creating) asymmetry that potentially gives China the ability to influence US policy."[15] An example of this is Hillary Clinton, who emphasized human rights during a visit to Beijing in 1995 but then backpedalled in 2009 and indicated that China's human rights record should not get in the way of cooperation on the financial crisis.[16] The writer noted, "The Chinese government absolutely can use its American dollar savings as a bargaining chip to force the American government to agree to China's acquisitions."[17] This is also a factor in the United States' lack of resolve to sell F-16s and other advanced weapons systems to Taiwan for fear of China's reaction.

Realists tend to see the economy as subordinate to political choices, such as grand strategy, statecraft, and international security, while trade, finance, monetary exchange, and other socioeconomic issues are traditionally viewed by the realist as subordinate. However, this view overlooks the intertwined relationship between economics and "grand" strategies and artificially creates a division between military, political, and economic factors. In terms of political-economic dynamics, the Chinese and American governments domestically cannot escape the political ramifications of an economically discontented populace, and on the geopolitical landscape, this dynamic is the basis for economic statesmanship and power politics. In terms of military-economic dynamics, the former is financed by the latter and the latter directly or indirectly supported by the former. In other words, military capabilities are usually greatest in states with advanced industrial economies and that effectively manage technology with capital, skilled labor, and raw materials, and such states will usually gain more leverage in their relations with others.

Benjamin Yeung of the University of Warwick, writing on the topic of economic security as a state of safety from financial crises, refers to a group of Chinese authors who observe economic security from a distinctly financial perspective. He translates one of these authors, Lu

Zhongwei, who was influenced by the 1997 Asian financial crisis. The author Lu states:

> Strategically, finance is not only [the ability to raise] money, but also a power, one so important that it can be compared with naval power or land power. . . . Whoever controls the rights to finance, will control the international economy. . . . Indeed, from the perspective of an individual, enterprise, or bank, the flow of capital is only an economic activity. But from the perspective of a state, from the perspective of international relations, it takes on a much wider strategic shade.[18]

To use an analogy of an individual, it is usually those who have witnessed poverty who gain a sense of security from having savings for a rainy day more so than those who have not had this encounter. China saw up close the exposure of its neighbors' financial and banking vulnerabilities during the Asian financial crisis (AFC) of 1997–98 and chose to learn from that error and keep a well-stocked piggybank. Deng and Moore maintain that during the AFC, China escaped much of the travails of its neighbors, but it also "highlighted the threats that global economic forces posed to national economic security (because the AFC) reinforced (Chinese) suspicion that the United States . . . seek(s) every opportunity for strategic gain, even in ostensibly economic matters."[19]

If one accepts there is a relationship between power and security, then there is a relationship between economics and security, given that there is a relationship between economics and power. Using historical approaches, Paul Kennedy and Niall Ferguson have argued that a strong economic basis is the foundation of a state's power. Ferguson defines the "square of power" as the tax bureaucracy, the parliament, the national debt, and the central bank. These four institutions of "fiscal empowerment" of the state enable states to project power by mobilizing and deploying financial resources to that end.[20] Economic factors not only are directly related to a state's material assets but also enable a state to project its soft and hard power. The United States has projected itself and its version of free trade throughout the twentieth century in the evolving trade system we know today. However, the system is undermined by the weakening of its main supporter, which is discussed in the next section.

Where is the Instability in the Current System?

One of the most intractable debates in the field of world politics concerns the association of structural polarity to international stability, and

many theoretical expoundings notwithstanding, "disagreement persists over which type of structure and distribution of power is most stable."[21] For example, Deutsch and Singer argue in their 1964 article "Multipolar Power Systems and International Stability" on the one hand that multipolarity leads to stability because they see an increase in the number of independent actors in the system as an increase in interaction and opportunities.[22] Kenneth Waltz, on the other hand, maintains that multipolarity leads to instability because those increased numbers of actors increase levels of systemic uncertainty.[23] While scholars disagree about the types of structure upon stability, Charles Kupchan argues, "The end of America's unipolar moment and the return to multipolarity thus threaten to trigger structural sources of competition that may well override other sources of peace."[24] Now, stability of the current (trade) system is undermined by the weakening role of US hegemony, especially its relative economic decline.

Hegemonic stability theory asserts that a stable, open international economic system is most likely when there is a hegemonic distribution of power; that is, when there is one state that is much larger than any of the others. The crux of this theory is the need for a hegemon to provide collective goods, especially acting as a leader of last resort in the financial sector, such as proposed by Charles Kindleberger in his 1973 classic, *The World in Depression: 1929–1939*. Hegemonic stability theory also argues that if there is a hegemonic distribution of power, there is likely to be an open regime for trade. The dominant power favors such a regime because it increases its economic well-being and economic growth and provides it with more political leverage. A hegemon would also have the resources to entice or coerce other states into participating in an open regime, such as the rules by which international relations are to be conducted in various areas including trade, finance, health, environment, communications, air transportation, and navigation on the high seas.

Further, the hegemon provides the system with collective goods. Collective goods theory relates to the allocation of and payment for goods that, once provided, cannot easily be denied to others and whose use does not deny their use to others. Providing national or international security through alliances has been described by some theorists as collective goods. According to the theory of collective goods, the current liberal economic system requires a hegemonic leader to provide its required framework of collective goods. Historically, however, hegemonic leaders do not endure. As the United States loses its grasp, it cannot escape the pressures to bring

the international economic structure closer into line with that of the more diverse international political structure.

Buzan's argument is that liberal systems are unstable because the hegemonic leader produces an effective liberal system only for a limited period and is unable to "sustain (its) position indefinitely."[25] The United States has become a source of international economic instability because it runs unsustainable deficits. Buzan asserts the well-being of a state depends not "on adapting towards the most advanced and successful practices elsewhere in the international system," but failure to adapt leads to "a steady loss of power, and a steady rise in vulnerability for those that have been more successful."[26]

One popular American view, presented in a front-page article of the *New York Times* at the end of 2008, is that this instability was created by Chinese savings and American consumption. Chinese savings—well over $1 trillion, mostly earnings from manufacturing exports—found its way into US government bonds and government-backed mortgage debt. According to Mark Landler, "Americans did not use the lower-cost money afforded by Chinese investment to build a 21st-century equivalent of the (19th-century British-financed) railroads. . . . (Rather this credit was used) to engage in a costly war in Iraq, and consumers used loose credit to buy sport utility vehicles and larger homes. Banks and investors, eagerly seeking higher interest rates in this easy-money environment, created risky new securities like collateralized debt obligations."[27]

Others attribute the instability to the artificially low value of the Chinese yuan or renminbi (RMB). In a 2009 *Foreign Affairs* article, Princeton University's Harold James quotes Martin Wolf, the *Financial Times*' chief economics commentator, who states that China's "inordinately mercantilist currency policies"[28] have caused dangerous imbalances. To maintain the competitiveness of its exports on world markets and keep a massive and restive workforce occupied, Beijing prevented the Chinese currency from appreciating against the US dollar (USD), preventing an increasing price for China's exports. The RMB-USD peg is an overt source of tension, as it is keeping Chinese exports artificially low and is a cause of concern not just for the United States but for other export-oriented nations as well. Inevitably, the RMB will be freely traded, especially if it is to become a currency of reserve, but by that time the US economy could have sustained much damage by this trade tactic.

One significant potential source of conflict between creditor and debtor states is the possibility of the debtor state being unable to repay its debt and/or the two states being unable to strike upon agreeable terms on how to settle the debt owed. The "best case" scenario in this instance is that the creditor nation would forgive the debt, which would cause the creditor state to lose creditability and creditworthiness in the international community but would also cause the creditor state to take a loss on its books. The worst case is the two states would seek to resolve their differences through force as the citizens of the states felt one side had cheated or manipulated the trade relationship through scheming.

The RMB-USD peg could fathomably become a sore grievance in the relationship and be used as an excuse for trade protectionist measures, which could potentially spiral. Depending on the scale of such a trade war, the United States could always up the ante by threatening to greatly devalue or default on its debt. The United States could also assign a value to lost trade through past and current copyright and patent infringements and "deduct" it from its China IOU. The Chinese have the option of nationalizing US investments in China, and the United States could freeze China's US investments, similar to its response to the Iran hostage crisis. These are worst case scenarios and, while unlikely, nevertheless options that have historically occurred on smaller scales.

One such occasion that had the potential to become more than a footnote was the September 2008 US government takeover of mortgage titans Freddie Mac and Fannie Mae, in part to reassure China, which had 10 percent of its GDP invested in them. If the United States had been unwilling or unable to do so, this would have been a blow to the economic relationship as well as the credibility of the United States as a place to invest. The irony in this takeover is that it places further pressure on the federal budget deficit, the value of the dollar, and therefore the value of dollar-denominated debt instruments of which China is the largest holder. This particular incident did not resolve any fundamental financial issues between the two countries and is one more instance of Uncle Sam plugging another hole in the crumbling dike of USD stability, of which China is fully concerned.

As Pingfan Hong observes, by the late eighteenth century, the United Kingdom had developed an alternative product to balance its trade deficit with China: opium. In the current system, he states tongue-in-cheek, the United States has a better alternative: "the greenback, which is virtually costless to print (and) China seems to be delighted to keep accumulating

the greenback, at least so far."[29] The risk here for the Chinese as well as the Americans is that the value of the "greenback" is not fixed, and a decline in its buying power through inflationary "printing" measures presents problems for both countries. For the Chinese this means that some of its exports to the United States were "freebies," since the value of the dollar at the time of purchase and the value of the dollar at the time of payment is skewed. For the United States, the risk is the dollar will lose its place as the primary currency in trade, although an alternative has yet to appear.

The downside in holding foreign-denominated reserves entails the risk that the value of the reserve will be depleted through inflationary measures. The debtor state will attempt to water down its debt burden by issuing more currency. Weimar Germany is an extreme example, but even the United States has been using this method to weaken the value of its debt, first with Japan and now with China. The current literature overlooks and understates this as a source of potential friction in Sino-American relations, and any friction between two superpowers is easily translated to the question of security. How can antagonistic relations between two powers bode well for peace? A default would hurt US relations with all its creditors, especially with China as it is the primary consumer of US debt and in September of 2008 passed Japan as the largest holder of US debt (see table).

Jan Nederveen Pieterse describes the world economy as a Ponzi scheme, "a giant pyramid selling scheme (and) a strange cycle in which trade deficits help fund the US budget deficit and make up for its low savings rate."[30] The massive American debt is sustained by dollar surpluses and vendor financing in Japan, China, and East Asia. Brad Setser, a fellow for geonomics at the Council on Foreign Relations, states, "The extent of US dependence on only ten or so central banks, most of them in Asia, is stunning."[31] The following table provided by the US Treasury Department details the extent of foreign creditor holdings of US government debt.

The current trade system is severely undermined by the inability of the United States to act as a primary support for the system in such matters as lender of last resort. This is self-evident, given that the United States relies on other nations to service its own debts. Therefore, any loans the United States gives are in a sense loans other countries are lending via the United States with the American role being one of a facade rather than of any substance. This inability can be traced to the burgeoning US debt burden as a result of over-consumption and over-reliance on Chinese labor and savings, not to mention US fiscal irresponsibility in such areas as the war

Major foreign holders of treasury securities (billions of dollars)—(Holdings 1/ at end of period)

Country	Sep 2009	Aug 2009	Jul 2009	Jun 2009	May 2009	Apr 2009	Mar 2009	Feb 2009	Jan 2009	Dec 2008	Nov 2008	Oct 2008	Sep 2008
China, Mainland	798.9	797.1	800.5	776.4	801.5	763.5	767.9	744.2	739.6	727.4	713.2	684.1	618.2
Japan	751.5	731.2	724.5	711.8	677.2	685.9	686.7	661.9	634.8	626.0	625.2	629.6	617.5
United Kingdom 2/	249.3	226.9	219.9	214.0	163.7	152.7	128.1	129.0	123.9	130.9	132.4	133.1	112.8
Oil Exporters 3/	185.3	189.1	189.2	191.2	192.8	189.5	192.0	181.7	186.6	186.2	187.2	176.7	171.2
Carib Bnkng Ctrs 4/	171.7	179.9	193.2	189.7	194.8	204.7	213.6	189.1	176.6	197.5	205.0	203.5	169.3
Brazil	144.9	137.3	138.1	139.8	127.1	126.0	126.6	130.8	133.5	127.0	136.1	141.0	148.3
Hong Kong	132.2	124.7	115.3	99.8	93.2	80.9	78.9	76.3	71.7	77.2	70.6	69.8	65.5
Russia	121.8	121.6	118.0	119.9	124.5	137.0	138.4	130.1	119.6	116.4	108.0	110.8	99.6
Luxembourg	98.7	94.2	92.0	104.1	96.2	97.4	106.0	92.1	87.0	97.3	94.2	100.6	104.5
Taiwan	78.1	75.9	77.4	77.0	75.7	78.3	74.8	72.6	73.3	71.8	70.2	65.9	63.0
Switzerland	68.9	68.2	68.1	71.5	63.7	64.2	67.7	68.2	62.1	62.3	63.8	62.0	49.7
Germany	53.7	55.0	56.1	53.8	55.1	54.4	54.9	56.5	56.2	56.0	53.8	53.6	51.5
Korea	38.8	38.7	37.6	36.3	37.4	35.4	33.1	33.3	31.3	31.3	32.7	36.2	40.2
Singapore	38.3	42.0	42.3	40.8	39.6	39.7	39.1	39.3	38.3	40.8	38.7	34.0	32.2
Canada	38.3	26.2	20.2	19.0	11.5	13.1	11.9	10.9	9.0	8.2	12.7	14.0	16.0
India	35.9	38.5	38.9	39.3	38.8	38.5	38.2	34.6	32.5	29.2	22.3	18.3	20.3
Ireland	32.7	36.5	38.6	46.3	50.6	49.7	54.7	54.4	50.0	54.3	41.3	35.1	32.9
France	32.1	35.0	24.6	26.0	25.9	30.6	27.1	16.8	17.9	16.8	18.4	20.5	19.3
Thailand	30.1	33.5	31.4	29.7	26.8	28.5	26.0	39.7	37.2	32.4	33.9	33.6	27.4
Turkey	28.2	28.7	27.3	27.5	28.8	27.2	30.2	32.4	31.3	30.8	29.0	27.9	31.5
Norway	25.2	24.7	28.9	28.7	28.3	27.5	26.2	21.1	21.9	23.1	20.2	11.5	13.2
Mexico	22.1	27.5	27.7	29.5	31.5	35.3	36.2	37.8	34.8	34.8	33.8	32.2	32.5
Netherlands	21.3	21.3	21.5	18.9	16.3	16.5	17.6	16.1	16.8	15.4	15.6	15.7	15.6
Egypt	20.8	20.4	18.6	17.3	18.6	18.5	18.5	19.1	16.9	17.2	16.8	16.7	15.5
Sweden	18.3	16.7	16.5	16.5	13.0	12.7	12.5	12.7	12.4	12.7	13.1	13.5	13.6
Israel	18.3	17.7	16.9	18.1	19.0	19.1	19.4	17.4	16.9	18.8	13.8	12.4	8.7
Italy	17.6	16.9	17.3	16.7	16.7	16.1	16.6	16.4	15.6	16.0	15.9	15.2	11.6
Colombia	16.7	16.3	14.8	11.8	11.9	11.4	11.2	11.4	11.3	11.1	11.5	11.3	9.9
Belgium	15.0	15.6	15.7	15.7	15.7	15.8	15.4	14.5	15.5	15.9	15.3	15.8	15.4
Chile	12.9	13.0	13.5	14.3	14.7	15.1	15.5	15.2	15.2	15.2	15.1	15.4	13.4
Philippines	11.8	12.4	11.4	11.6	11.8	12.0	12.4	12.6	11.6	11.7	11.5	12.1	12.0
Malaysia	11.0	11.2	11.9	11.7	12.3	11.6	10.6	8.4	8.0	8.4	8.8	8.6	9.4
All Other	156.8	158.7	159.5	157.5	157.6	153.4	156.5	164.8	162.3	156.4	156.1	149.0	137.7
Grand Total	3497.3	3452.9	3427.4	3382.1	3292.6	3262.0	3264.7	3161.4	3071.6	3076.3	3036.0	2979.7	2799.5
Of which:													
For. Official	2369.5	2360.1	2346.2	2295.7	2287.5	2253.6	2248.6	2198.1	2165.8	2138.7	2104.1	2063.7	1981.0
Treasury Bills	597.7	607.3	606.6	571.9	586.2	530.6	542.7	521.2	486.9	457.9	427.2	360.6	276.8
T-Bonds & Notes	1771.8	1752.8	1739.6	1723.8	1701.3	1723.1	1705.9	1676.9	1678.9	1680.8	1676.9	1703.1	01704.2

Department of the Treasury/Federal Reserve Board 17 November 2009

1/ Estimated foreign holdings of US Treasury marketable and non-marketable bills, bonds, and notes reported under the Treasury International Capital (TIC) reporting system are based on annual Surveys of Foreign Holdings of US Securities and on monthly data.

2/ United Kingdom includes Channel Islands and Isle of Man.

3/ Oil exporters include Ecuador, Venezuela, Indonesia, Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates, Algeria, Gabon, Libya, and Nigeria.

4/ Caribbean Banking Centers include Bahamas, Bermuda, Cayman Islands, Netherlands Antilles and Panama. Beginning with new series for June 2006, also includes British Virgin Islands.

Source: US Treasury, http://www.treas.gov/tic/mfh.txt.

in Iraq. Some argue, especially in the West, that the intentional cap on the value of the RMB played a part in the Chimerica trade imbalance.

Given that the Current American-Dominated Liberal System is Unsustainable, How Will the Emergence of a New System Affect International Security?

The answer to the above question can be broken down by answering the following two and one-half questions: (1) Is there a link between the current American-dominated liberal trade system and security? (2) What other possible trade systems are there, and do they in any way impact security? The literature which explores world trade systems is sparse, and the question of trade system impact upon security sparser still. The question is invoked because it is a valid component to the other three questions this article addresses.

Barry Buzan most directly considers the first question in a 1984 article for *International Organization*. He asserts, "The use of force is influenced much more powerfully by military and political factors than by economic ones." Based upon the assumption that economics is "subordinate" to military and political factors, he asserts, "Security considerations therefore cannot be used convincingly either as a major support for maintaining the contemporary (American-dominated) international economic system or as a decisive point against moving toward a more mercantilist structure of international economic relations." He argued the misgivings that "the decline of American hegemony will lead to a collapse of the liberal economic system and therefore to a renewed cycle of conflict and war" are misplaced, and "the current liberal system does not have to be maintained for security reasons."[32]

Buzan's argument that the American liberal economic system does not lead to insecurity was written before the extreme imbalances that plague the current system, and now for the sake of security the current system needs to be replaced because its unsustainablity is a source of instability in world society. This leads us to the second question: What are the alternatives? Buzan offers an alternative system as "a model for a collapsing liberal system" which he labels a "benign version of mercantilism." He argues for substantial self-reliance in such vital sectors as defense, energy, and food. "Self-reliance would increase economic security by reducing such sources

of international tension and conflict as that which arose over oil during the 1970s."[33]

There is little chance Asian countries like China, India, and Japan could, with their populations and given resources, meet their own security needs of self-reliance. Even a regional "partner" like Australia can prove unreliable or distrustful of Chinese intentions. A case in point is the Australian government's rejection of China's Chinalco (its state-owned aluminum corporation) $19.5 billion bid to expand Chinalco's existing 9.3 percent stake in Australia's Rio Tinto mining giant to 18.5 percent. The deal was rejected because it had drawn stiff political opposition in Australia, where mineral riches have fueled the country's prosperity and where some have begun to fear China's power in the region. Chinese officials, on the other hand, complained about the Australian government's protectionism and nationalism.[34]

Mark Beeson, professor of international politics at the University of Birmingham, conceives of the Washington consensus being replaced by the Beijing consensus. The United States, because of its dominant economy and political clout, was able to levy neo-liberal policy prescriptions under the rubric of the Washington consensus. Now, he maintains, there is an alternative Beijing consensus emerging around China's "pragmatic state-centric approach to development" and reinforced by China's "material influence and ideational appeal."[35] If indeed the Washington consensus is usurped by a Beijing consensus, how would a larger Chinese role unfold and impact the world?

The next section explores the possibility of a growing Chinese role as a source of stability and leadership in the economic system and the willingness of other nations to accept such a role. Kindleberger argues the system needs an underwriter to "provide a market for distress goods, a steady if not countercyclical flow of capital, and a rediscount mechanism for providing liquidity," as well as to "manage, in some degree, the structure of foreign exchange rates, and provide a degree of coordination of domestic monetary policies."[36] Perhaps such a role can be played by China, but as Pingfan Hong, UN principle economic affairs officer and chief for global economic monitoring, states cautiously, "Hopefully, the rise of China won't generate as many grave international clashes as China suffered when it converged with the developed world for the first time a few centuries ago."[37]

What World Economic Leadership Role is Emerging as China's Absolute and Relative Economic Position Increases?

The early twenty-first century is witness to a new tide of global leadership change as the US position of economic strength wanes and China's expands. Barry Gills, professor of global politics at Newcastle University, observes the current liberal trade system "as a whole is certainly not static . . . (it) is fully capable of undergoing very important historical changes and adaptations . . . the present 'globalized capitalism' is no exception."[38] The fundamental changes within the liberal trade regime that are beginning to manifest themselves have their beginnings in the later part of the 1980s when China, as well as Russia and India, began economic liberalization and integration in earnest.

China was a new entrant in a field of well-established, liberalized, competitive economies. China joined this liberal global trade system, not because it agreed with the concept of free trade and consumer choice in principle, but because it saw it as a mean to ends; hence Deng's famous line, "it doesn't matter what color the cat is so long as it catches mice." The cat in this case is the US–dominated liberal trade system, and the mice access to technology and capital, the basic building blocks of development and security in every sense of the word.

China has been wildly successful in its goal of catching mice via the metaphorical "black" cat of "bourgeois capitalist-roader" trade. The success of China within the system is all the more remarkable when one considers the speed of its rise from a trade recluse to becoming the primary creditor of the United States within two decades. Further, the system in which China thrived is not a system that is particularly selfless towards developing countries. It is a system based upon the principle of market efficiency and competition for resources, markets, and labor.

Buzan states, "The inherent inequity of the liberal market . . . favors established strength over new entrants . . . so that mercantilism becomes a strategy not against the liberal logic itself, but against the self-interested use of that logic by those already in a strong position within the system."[39] The Chinese approach to the system has been mercantilist, but this may change as it moves from being a periphery nation to a central one within the system. Here one can draw interesting comparisons between China and its neighbor Japan, but this is beyond the scope of this article. Suffice it to say, both have used various means to protect local markets (e.g., non–trade

barriers such as arbitrary legislation against foreign competitors), but China arguably seeks a larger more influential role in the world than Japan.

Chinese scholars and commentators have been proclaiming aspirations of how China should use the current economic crisis to boost its strategic influence. *The Economist* notes that an article in *Economic Reference*, a journal published by a Chinese government think tank, maintains the crisis will "severely weaken the economic, political, military and diplomatic power of developed countries" and this provides China with an "historic opportunity" to "strengthen its position."[40] A strengthened, more involved China in itself can be a welcome development, provided that it is "peaceful" not only in rhetoric. That China, in spite of its policy of never taking the lead (絕不當頭), has global ambitions is the world's worst-kept secret and could potentially be a positive development so long as the nationalists are not able to influence policy on issues such as Taiwan. If and when China does decide to take the lead, what can we expect of such leadership in the fickle world of global economics?

Rosemary Foot remarks that at the 16th Party Conference, "Hu Jintao moved on to emphasize the importance of economic globalization, the multidimensional nature of security, and the need to recognize the responsibility of the great powers, including China, for maintaining global order."[41] If one understands "maintaining global order" to mean avoiding conflict over issues such as Taiwan, then this would be a welcome role for China to fulfill. However if "maintaining global order" means establishing a global order that jives with the nationalists in China, then any such "order" will entail disorder.

Martin Jacques is confident (not surprising given the title of his book) that China will translate its economic wealth to other outlets of power projection. He states, "Rising powers in time invariably use their newfound economic strength for wider political, cultural and military ends. That is what being a hegemonic power involves, and China will surely become one." He envisions the resurrection of the Chinese tributary system as a future paradigm in international relations. Tributary relationships with China involved "neighboring states acknowledg[ing] China's cultural superiority and its overwhelming power by paying tribute to the Middle Kingdom in return for benevolence and protection."[42] However, the concept of a newly revived Chinese tributary system is ambiguous, lacks evidence, and is characteristically underdeveloped when posited as a future model of Chinese leadership. Other than the revolutionary

recommendation that the non-Chinese world become China's vassal, how else may China use its influence in the world?

The ambitions of the Chinese and their leaders to see China rise is in itself a natural and respectable goal of any people. However, the question is Will this rise be one of integration and make the world a more harmonious place or one of selfish nationalism and conflict? The answer depends in no small part upon the influence or lack thereof of those of the nationalistic bent. One should not pretend to use the opinions of a few nationalists to determine the direction or nature of China's greater role in shaping world affairs, but it would be rash to disregard these views, especially when they are coming from within the government. Further, the momentum of nationalistic sentiment in China shows no sign of diminishing.

Typical of this hawkish movement are the positions of Luo Shou and Wang Guifang, of the Military Sciences Institute Strategy Research Division, who articulate three stages to China's rise, which to non-Chinese (including Taiwan) are far from benign. They state that in the first stage China will "construct a secure surrounding environment (by) the integrity of state sovereignty and the national territory not becoming even more split." The second stage requires moving beyond the Asian region to develop "a global security environment more beneficial to China's interests by expanding our international space and realizing the unification of our fatherland." When China enters the third stage, which is expected to be towards the middle of the century, it "will have joined the ranks of the world's supreme powers. Its primary task will then be to plan and operate a new international political and economic order that can universally be accepted by international society."[43]

In other words, according to the above statements, some in China see the unification of Taiwan as a prerequisite to becoming an architect in a new global political and economic order. It is this narrow view of the nationalists that could prevent China from becoming a world leader. Arguably, the views of these two men are not shared by most Chinese, but it is positively not an uncommon view in China either. What leadership is possible without some sort of willingness on the part of other nations to grant China such a leadership role? Leadership is not wholly the prerogative of the willing leader but also the prerogative of those being led. Any use of hard power will hurt any gains in soft power, as was the United States' experience in both Vietnam and Iraq.

In 2003 at the South-North Leaders Dialogue in Evian, France, in response to a slight world economic downturn, Chinese president Hu Jintao ironically stated there was a need to

> promote the establishment of a new world economic order, and stronger support for enriching the South-North cooperation. . . . Developed countries should fulfill their due responsibilities and obligations by further opening markets, eliminating trade barriers and practically meeting their commitments to increase financial and technical support, debt relief. . . . Developed countries are vitally influential in global and regional economic development, they should adopt practical and effective financial and monetary policies to carry on necessary structural reform, boost domestic demand, increase imports and rebuild market confidence, in order to play an active role in promoting global economic growth.[44]

The irony in his statement is that the advice he had given for the North in 2003 is precisely the same advice the North was giving to the South by 2009. In fact, it was the North's "domestic demands" and "imports" that have created the economic imbalance. Perhaps China's leaders will finally seek to create opportunities to increase domestic demand of Northern products. The devil of course is in the details, because much of the intrinsic value of Northern products is in their R&D, such as patents and copyrights, rather than the manual labor. Furthermore, the Chinese are more interested in pursuing financial statecraft by purchasing strategic assets through bodies such as the China Investment Corporation (CIC) rather than issuing consumer vouchers for the average Chinese to use up some of those excess foreign reserves for products that help employ people and create more balance in the trade system.

Buzan maintains, "If the key to economic security on the state level is the position of the state within the international networks of trade production and finance, then, the key at the system level is the stability of the whole network of market relations itself."[45] The mammoth task of maintaining the stability of the trade network is well beyond the capacity of the United States, which is no longer able to provide this service and therefore absolutely needs and should welcome a much greater Chinese role in stabilizing the trade system. If only China's nationalistic and mercantilist ambitions are far beneath the greater need to lead and mold a new economic order.

Conclusion

A greater Chinese role may not look like the US–dominated system that has been operating for the past century. It probably will not look like

Buzan's proposal of a benign mercantilist system either. The alternative to a healthier, more sustainable trade system is greater instability and conflict, and in the words of Leonhardt, "It's not especially pleasant to think about what the global economy will look like if China and the United States fail to fix their dysfunctional relationship."[46] For the United States, this means some drastic fiscal belt tightening at all levels of society and a willingness to play a smaller role in world affairs that reflects its weaker relative slice of the global economic pie, severe financial indebtedness, and a moderate loss of economic credibility. For China this means taking a more active leadership role that minimizes Sino-centric relative gains, especially in its neighborhood, and prioritizes absolute gains for all.

A peaceful, prosperous, and aye, a free China which respects the rights of its citizens and its neighbors would be welcome. A peaceful transformation of international society from one dominated or controlled by the West, particularly the United States, would require the acceptance of said powers to recognize "the need to coexist in an equal and reasonable manner with newly rising non-Western states."[47] Li Jidong (李继东), a lecturer at the International Politics Research Center of the PLA's Foreign Languages Institute has an optimistic vision for China and the world, "When a country's national material power increases, its culture naturally becomes an object of imitation."[48] Therefore, when China's economic power continues to increase, its potential to highlight its soft power will also automatically simultaneously increase. Note here that economic increase leads to the *ability* or option to increase soft power but not inevitably to an increase in absolute soft power. This depends on how China exercises and projects its economic might.

China's economic power is a double-edged sword when speaking of soft power. Martin Jacques ascertains, "Wealth and economic strength are preconditions for the exercise of soft power and cultural influence."[49] While economic power is a precondition, it is not the only condition. For example, in response to the low RMB (as it is pegged to the long-term weakening USD) and the pressure Chinese exports place on the products of its export-oriented neighbors, Michael Wines notes that China "is finding it harder to cast itself as a friendly alternative to an imperious American superpower. . . . (To) many in Asia, it is the new colossus."[50] Furthermore, the economic success of the Chinese, including overseas Chinese, can breed resentment, such as the ethnic riots in Milan in April 2007. The riots were initially sparked over a traffic fine given over the protests of a

Chinese merchant, but the escalation was fueled by the fury of Italians who complained Italian retail stores were being squeezed out by Chinese merchants who opened wholesale distribution operations for goods flooding in from China.[51]

However, wielding economic power and with it the perk of soft power is incomplete without the will to exercise political power in the form of leadership on key issues. Andrew Browne writes there is on the part of the United States and its allies hope that "China will use its new strategic heft (and) deft touch to help resolve . . . security issues (but) China has resisted tougher sanctions against a country that is its second-largest oil supplier," in reference to Iran, which he posits is "the biggest test to date of China's willingness to lead."[52] As it is, China's interests are its own interests, and actively engaging in matters regarded as US or European priorities is not the way China is inclined to involve itself, much less lead.

Colonels Geis and Holt in conclusion to their assessment of the rise of China prescribe for Sino–US relations a "comprehensive plan" that must be "designed, resourced, and executed" with the China of 2030 in mind.[53] This is sound advice that would be all the more applicable if we could put our finger on what the world leadership role of China a few decades from now would entail. Let us hope the China of 2030 is less focused on advancing only its own narrow economic interests and uses its newfound economic and soft power to spearhead and foster economic prosperity in the twenty-first century as the United States managed to do fairly successfully in the twentieth. SSQ

Notes

1. Agence France-Presse (AFP), "US PRC Hold Key Trade Talks Before Obama Visit," *Taipei Times*, 30 October 2009.
2. William Lowther, "Next 12 Months Key for US Arms Sales," ibid.
3. Susan Shirk, "The Summit of Low Expectations," ibid.
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Security Assistance, Surrogate Armies, and the Pursuit of US Interests in Sub-Saharan Africa

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Creating the US Africa Command (AFRICOM) reflects a growing recognition of US strategic interests in Africa and of a need to influence more effectively the security environment to protect and promote these interests.[1] AFRICOM also symbolizes, perhaps unintentionally, a new level of US commitment and identifies the United States as a significant stakeholder in Africa. Still, the United States has no desire for a more direct military role in the region. Contrary to the fears of many, the new command does not imply a militarization of US policy, nor does it represent an insidious step toward a buildup of US troops on African soil. Establishing an unofficial metric, a Department of Defense (DoD) official stated recently that the United States could consider AFRICOM a success if it "keeps American troops out of Africa for the next 50 years."[2] For the United States, security assistance fills this gap between strategic commitment and aversion to military intervention. Accordingly, "a large part of AFRICOM's mandate will be to build the indigenous capacity of African defense forces," and the command will "concentrate much of its energies and resources on training and assistance to professionalize local militaries so that they can better ensure stability and security on the continent."[3] In the words of a senior US military officer assigned to AFRICOM, the United States seeks to enhance regional military forces because, "We don't want to see our guys going in and getting whacked . . . We want Africans to go in."[4]

AFRICOM's focus on security assistance should lead one to consider whether such programs, as prescribed by current policy, are an effective hedge against more-direct US military involvement. Such a question is particularly relevant to the near future of US military strategy in Africa, given the US government's avowed support of the African Standby Force

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(ASF), which is expected to be operational by 2010, as well as the recent extension of Section 1206 (nontraditional security assistance) funding authority to the DoD through fiscal year 2011. This article addresses the issue predominantly by exploring, within the context of Africa, the relationship between security assistance and surrogate force. It suggests that such a perspective, rooted in the broader concepts of agency theory, may add value beyond the more traditional logic of partner capacity building. It concludes that the efficacy of security assistance strategy derives largely from how it translates the donor-recipient relationship into a sponsor-surrogate relationship.

After expanding upon the linkage between security assistance and surrogate force, the article examines two case studies: the 2003 intervention of Nigeria and the Economic Community of West African States (ECOWAS) in Liberia and the 2006–2008 intervention of Ethiopia and the African Union (AU) in Somalia. These specific cases are germane for a number of reasons. First, they represent the two predominant strands of US security policy in Africa: peace-support operations (Liberia) and counterterrorism (Somalia). In each case, the intervention was preceded by a period of significant and focused US security assistance to key actors. Finally, in each situation, the United States was under a somewhat unique pressure to become involved militarily, yet sought other alternatives, primarily in the form of surrogate force. The associated analysis attempts to identify the nature and causes of divergence between donor expectations and preferences on one hand and recipient performance on the other. It then examines the viability of donor attempts to shape recipient behavior and thus achieve a desired security outcome.

Security Assistance and Surrogate Force

Until the mid 1970s, US policy makers used the terms *military assistance* and *military aid* generically for all transfers of military weapons, equipment, and training to recipient governments. In 1976, Congress amended the Foreign Assistance Act of 1961, introducing the label "security assistance" to include military assistance as well as other related programs. The legislation "shifted official terminology to usage of the term *security assistance* in preference to military assistance to include the political and economic aspects, as well as military aspects, of arms transfers."[5] Today, the DoD defines security assistance as a group of programs, authorized by

law, by which the United States "provides defense articles, military training, and other defense related services, by grant, loan, credit, or cash sales in furtherance of national policies and objectives."[6]

There is no official DoD definition for surrogate force, the second key concept. For many, the term *proxy* may be more familiar. Within the military realm, the terms *proxy* and *surrogate* are largely interchangeable. The use here of the latter reflects a desire to establish a degree of distance from the related, yet viscerally more contentious, concept of proxy war. Given the African experience, any allusion to proxy war will likely elicit recollections of how external powers, both in the colonial and Cold War eras, competed by initiating, escalating, and exploiting local conflicts.[7] Today, many who wish to denigrate a given foreign policy in Africa simply apply the label "proxy war" for dramatic effect.[8]

In his study of Soviet Third-World strategy during the Cold War, Alvin Rubenstein suggests:

> In foreign policy, the term *surrogate* (literally one who fills the role of another) indicates a function in the relationship between two governments, in which government A, the surrogate, defers to the preferences of government B and acts on its behalf or in support of its policy in pursuance of shared though not necessarily identical goals and in circumstances that otherwise might require B to assume higher costs and/or risks.[9]

This definition provides a useful starting point but limits unnecessarily the concept to relationships between governments. Over the past several decades, the United States has demonstrated a proclivity for the use of both state and nonstate surrogates.[10] Despite this widespread application, US defense publications provide only tangential reference to the subject. In its definition of unconventional warfare, Joint Publication 1-02, *DoD Dictionary of Military and Associated Terms*, includes operations "conducted through, with, or by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source."[11] Although vague, this latter source adds an important element to Rubenstein's characterization by emphasizing the idea of a mutually beneficial relationship. The surrogate acts on behalf of government B, but in addition, government B supports and enables the surrogate.

For the purposes of this article, a surrogate force is defined as an organization that serves the needs or interests of a secondary actor—the sponsor—by employing military power in place of the sponsor's own forces. Implicit within this definition is the requirement for the sponsor to fund, equip,

train, or otherwise support the surrogate. The sponsor also must exercise at least some form of control or influence over the surrogate. This control, however, is never absolute. In many cases, it is tentative at best. As Rubenstein explains, "Whereas surrogates may connote subordination and dependence, in practice they cover a range of relationships."[12] From a definitional standpoint, there must be some congruence of interests between the surrogate and sponsor beyond financial considerations. This does not preclude differing or competing objectives, but the surrogate does not act solely for monetary gain or purely in response to coercion. Finally, one must recognize that the sponsor-surrogate relationship does not represent a formal agreement and thus differs distinctly from an alliance.

In his 1950s analysis of foreign aid, George Liska introduced a categorical distinction between creative and acquisitive assistance programs. Creative aid, even of a military variety, focuses on the socioeconomic development of a recipient without being tied to any specific strategic objective of the donor. It is "not primarily intended to acquire anything, at least not immediately; it is extended in the hope that it will favorably affect the economic and political development of the recipient country." On the other hand, a donor will utilize acquisitive aid to "win a comparatively specific advantage" or to "acquire" an asset.[13] In further defining the nature of the latter, Liska postulates,

> In the case of acquisitive aid the recipient's performance substitutes directly for action by the donor. The donor either does not expect to act at all or would have to act "more" or "differently" if he could not anticipate the performance of the recipient. . . . The case is clearest where military and economic aid are intended to help the recipient maintain an army for local self-defense, so that the United States does not have to participate with troops or need involve only a correspondingly smaller number of troops.[14]

This passage highlights the basic linkage between security assistance and surrogate force. A similar perspective is pervasive to, although not necessarily articulated within, justification for US security assistance funding.

Proponents of US security assistance cite a number of program benefits.[15] Most justifications share the common theme of economy of force. Calling for a dramatic increase in security assistance funding during the Reagan years, Secretary of State Alexander Haig claimed, "As we strengthen these states, we strengthen ourselves . . . we can do so more effectively and frequently at less cost."[16] In 1985, Secretary of Defense Caspar Weinberger testified to Congress that security assistance serves to "ease the financial

and logistical burden of our global security interests."[17] More specifically, the achievement of economy through security assistance stems from a reduction in the requirement for more financially and politically costly US military intervention. Continuing his testimony, Weinberger explained, "If effective, our programs help reduce the likelihood that US forces will be called upon to intervene on behalf of friendly or allied countries sharing common security interests."[18] James Buckley, undersecretary of state for security assistance and technology during the same period, argued that the programs "bolster the military capabilities of our friends and allies, permitting them in some cases to undertake responsibilities which otherwise we ourselves might have to assume."[19] More recently, and reflecting more specifically on the benefits of US security assistance to Africa, Cong. Ike Skelton explained,

> In the Global War on Terror, we need all of the help we can find. Where nations are willing to pony up resources, especially in terms of available troops, then we should do all we can to make sure that they are as well trained and well equipped as we can make them. Clearly no one is better suited to patrol the ungoverned spaces in Africa than the Africans. . . . Not only will they be more effective than we could ever be, but it will also relieve at least some of the demand to deploy our own troops.[20]

Mirroring Liska's logic, Weinberger, Buckley, and Skelton advocated security assistance as a means of enabling other actors to take the place of US forces. They were, essentially, espousing the linkage between security assistance and surrogate force.

Terminology often obscures this key relationship. US policy makers and defense personnel alike speak regularly in terms of "building partner capacity." The dialogue surrounding the standup of AFRICOM certainly follows this trend. This is probably more palatable than the notion of developing surrogates, but the palatability comes with a downside. Bertil Dunér outlines the three dimensions of a surrogate relationship as compatibility of interests, material support, and power.[21] Of the three, power, or influence, exerted by the sponsor is most critical. For Dunér, whether or not a state has acted as a surrogate "can best be regarded as a question of whether it has been subjected to the exercise of power by some other state; whether it has been pressured to intervening." A partner, on the other hand, receives material support yet is in no way pressured or influenced by the donor to intervene.[22] By analyzing, strategizing, and implementing security assistance in terms of a partnership instead of a sponsor-surrogate

relationship, one is perhaps more likely to marginalize the critical, albeit controversial, factor of donor influence and control.

Such marginalization may affect adversely the degree to which security assistance programs achieve US objectives. According to William Mott, "Throughout the Cold War, Americans persisted in the obsessive conviction that arms transfers . . . would provide pervasive US political influence on recipient policy" and create automatically "decisive leverage on recipient behavior." Washington policy makers assumed a degree of US control inherent in the provision of security assistance and "expected strategic and diplomatic loyalty and even military service from US recipients."[23] This assumption was, in many cases, flawed. Failing to address adequately the issue of donor influence, Washington "was never able to create the convergence of recipient aims to achieve US aims."[24] Instead of shaping recipient behavior and use of military force as hoped, security assistance became "at best a precedent and argument for continued aid, and at worst a resource at the disposition of the recipient for domestic or external use regardless of the stated purpose for which given."[25]

The key point here is that capacity building, in many circumstances, may not be enough. The United States cannot assume that the mere granting of security assistance—what Dunér categorizes as material support—will shape automatically recipient behavior or that the resultant capacity will necessarily be utilized in a manner that best supports US interests. Dunér is correct in referring to any such assumption as "a very shallow notion."[26] Addressing security assistance from a mind-set of surrogate force development as opposed to partner capacity building highlights the critical need, particularly in the absence of formal alliances, for donor influence associated with donor material support.

This approach to security assistance lends itself readily to the broader theoretical framework of agency theory. As cited above, "In the case of acquisitive aid the recipient's performance substitutes directly for action by the donor. The donor either does not expect to act at all or would have to act 'more' or 'differently' if he could not anticipate the performance of the recipient." Agency theory, in turn, addresses the ubiquitous yet complex relationships in which one party, the agent, acts on behalf of another, the principal.[27] Thus, to the degree that security assistance falls within the acquisitive category, the core concepts of agency theory become more germane. The following analysis of US security assistance strategy in Africa

relies substantially on these concepts. Within this analysis, the sponsor and surrogate assume the roles, respectively, of principal and agent.[28]

There has been little shortage of instability and conflict in Africa over the past decade. In most cases, the United States has chosen to remain a concerned observer—just another member, albeit an influential one, of the amorphous international community. On rare occasion, certain facets of a conflict serve to drive the United States into a more active leadership role and pressure it to consider more seriously the application of military power. While relatively uncommon, it is in such situations that the concept of surrogate force is most relevant and the linkage to security assistance becomes most vital. The two cases presented below reside generally within this category. Each points to a degree of success in the utilization of surrogate force and to the value of US security assistance programs while at the same time illustrating readily the truism that agency is rarely, if ever, perfect.

Case 1: Intervention of Nigeria and ECOWAS in Liberia, 2003

The Liberian elections of 1997 brought rebel leader Charles Taylor to power and resulted in a short period of relative stability in the nation. Within a couple of years, however, a new bout of internal fighting emerged in response to the abuses of the Taylor regime. The resumed civil war in Liberia finally came under the international spotlight in early June 2003 as the insurgent group Liberians United for Reconciliation and Democracy (LURD), long confined to remote areas of the country, made a rapid advance upon Monrovia and tens of thousands of refugees streamed into the capital city.[29]

The Impetus for US Involvement

On 29 June, UN Secretary-General Kofi Annan called for international peacekeepers to intervene in the conflict. In a letter to the Security Council, he expressed that "such a force should be led by a permanent member of the council."[30] Arguing that the United States had a special relationship with Liberia, the secretary looked specifically to the Americans to fill a leadership role. France and Great Britain had recently deployed substantial peacekeeping forces to their former colonies of the Ivory Coast and Sierra Leone, respectively. Although Liberia was never a US colony, it was

the closest thing to it in Africa, and many advocates of US intervention, including the governments of France and Great Britain, suggested the United States should respond in a comparable manner.[31]

Similar arguments had surfaced in the early 1990s at the outset of the preceding Liberian conflict, yet the United States had declined to commit forces. In 2003, however, it faced additional considerations. One was the increased interest in subregional energy resources. At that time, analysts predicted that by 2020, the United States would import 25 percent of its crude oil from the Gulf of Guinea.[32] Other growing concerns included the pervasive weapons and drug trafficking as well as the perceived presence of international terrorist organizations. As Secretary of State Colin Powell explained, "We do have an interest in making sure that West Africa doesn't simply come apart."[33]

Despite the historical ties, international pressure, and at least some degree of national interest, feelings in the United States toward committing troops to Liberia remained mixed. A conservative Congress feared being drawn into a protracted African conflict and stretching the military too thin. The defense establishment was also reluctant "to get involved in a complex and violent dispute that does not involve compelling issues of national security for the United States, especially when American troops are already deployed in Iraq and Afghanistan."[34] At a Senate Armed Services Committee hearing, the chairman of the Joint Chiefs of Staff, Gen Richard Myers, expressed strong reservations about involvement in Liberia, warning lawmakers of the potential for a long and costly operation.[35] Vice-chairman Gen Peter Pace echoed those sentiments, pointing directly to the precedent of the US debacle in Somalia.[36] This view, however, was not universal within the US government. The State Department, led by Powell, pressed for a vigorous military response from the United States.[37] A small but vocal group of US lawmakers weighed in on the side of Powell. After a period of intense internal debate, the administration merely conceded in early July that it was "not ruling out" the deployment of American troops.[38]

Potential Surrogates

While ostensibly weighing US military intervention, President Bush deployed a small team of military advisors to Western Africa to assess the situation and determine the ability and willingness of subregional actors to respond.[39] At a press conference, Bush explained that the team was

"assessing ECOWAS strength: how soon, how quick [*sic*], what kinds of troops, who they are."[40] This focus on ECOWAS was not surprising. From a military perspective, it was by far the most developed and experienced subregional organization in Africa. Further, ECOWAS had intervened—absent UN mandate—in Liberia previously to maintain subregional stability. There was obviously some interest amongst its members in preventing the violence from spreading as it had in the 1990s.

In turning to ECOWAS, the United States was, in effect, turning to Nigeria. Nigeria was the subregional power and, according to Undersecretary of State for Political Affairs Thomas Pickering, "the only country in the region capable of projecting military force."[41] In testifying to Congress, Pickering also pointed out that an earlier ECOWAS military operation in Liberia had been Nigerian led, Nigerian dominated, and Nigerian financed. Without Nigeria, the force would have been "tiny and not functionally viable."[42] The tepid attempt by ECOWAS to intervene militarily without Nigerian participation in the Ivory Coast (2002) further reinforced the perception. In 2003, it is unlikely the other countries within ECOWAS were either capable or willing to launch a robust peace support operation without Nigeria taking a dominant role.

This does not imply, however, that ECOWAS lacked relevance as an organization. Nigeria possessed the muscle, but ECOWAS provided the legitimacy. According to some analysts, Nigeria intervened in Sierra Leone (1997) "without consulting its partners or receiving prior authorization" and utilized the label "Nigerian-led ECOMOG peacekeeping force" out of necessity for good public relations.[43] While perhaps overly skeptical, this assessment does highlight the sensitivities related to unilateral action in the subregion. Nigeria was hesitant to act, or at least to appear as if acting, unilaterally. On a parallel note, the other members of ECOWAS were accepting of Nigerian leadership but protested what they perceived as Nigeria's "penchant for a unilateral diplomatic style."[44] Thus, while focusing primarily on Nigeria as a potential surrogate, it was important for the United States to discuss publicly any subregional intervention in terms of ECOWAS.

Security Assistance Relationships

In 2001, a DoS official testified to Congress that "in the coming year, we are going to be exploring with ECOWAS ways in which we can deepen our cooperation and offer more assistance to them as they try to develop

these multilateral capacities."[45] By 2003, however, the United States still lacked the statutory basis to provide security assistance funding directly to ECOWAS. Accordingly, all US security assistance relationships in the subregion were bilateral. Although the United States had such relationships with a number of ECOWAS countries, the bulk of security assistance from 2000 to 2003 flowed to Nigeria. The US security assistance relationship with Nigeria was thus the most relevant to the 2003 Liberian crisis.

In 1993, responding to Gen Sani Abacha's establishment of a military dictatorship, the United States cut all security assistance to Nigeria. It initially banned Nigeria from participating in the African Crisis Response Initiative (ACRI) for the same reason. As Amb. Marshall McCallie, program director for ACRI, explained to Congress, "We can't provide military assistance to countries that are governed by military governments, particularly those that have displaced civilian governments. . . . I look forward to the day when Nigeria has returned to democratic civilian rule and we are able to work together with them in peacekeeping."[46]

The 1999 Nigerian elections, ostensibly representing a return to such rule, provided "a monumental opportunity for the United States on the African continent." The US government viewed Nigeria not only as the key subregional power but also as the "possible linchpin for the entire continent."[47] This vision included a significant role for Nigeria in the maintenance of subregional and regional security. At a 1999 congressional hearing on the future of US policy toward Nigeria, Senator Bill Frist explained, "We want Nigeria to remain engaged in regional conflict resolution and peacekeeping and perhaps expand these efforts further."[48] Similarly, Undersecretary Pickering pointed to an "extremely important need" for Nigerian forces "to be available in the region to deal with conflict in the region."[49]

The first practical connection of US security assistance to this "extremely important need" came in the form of Operation Focus Relief (OFR). Through a year 2000 arrangement brokered by the United States, three West African nations pledged troops to the faltering UN Mission in Sierra Leone (UNAMSIL). Senegal and Ghana each promised one battalion, while Nigeria pledged five. US military advisors in the subregion, however, briefed US leadership that "the Nigerian army was broken and there would be no guarantee of victory in Sierra Leone by shoveling in ill-led, -trained, and -equipped troops."[50] Accordingly, through OFR, the United States provided $80 million over a five-month period to train and

equip seven battalions from the three countries.[51] Interestingly, only Nigeria deployed its OFR-trained units to Sierra Leone.[52] Accompanying these units into Sierra Leone was a small team of US Soldiers tasked to monitor performance.[53]

After the termination of OFR, the United States continued to provide substantial security assistance funding to Nigeria. In 2001, the DoS Bureau of African Affairs pointed to Nigeria as "the largest single focus in terms of bilateral military programs and capacity building on our part" and "the largest single recipient of US security assistance."[54] Overall, from 2001 to 2003, Nigeria received the most US security assistance by far of any nation in Africa.[55] Although never involved in ACRI, Nigeria became one of the charter African Contingency Operations Training Assistance (ACOTA) participants in 2002. This surge in US funding correlated closely to the above-mentioned perception of Nigeria as a potential leader in regional and subregional peace operations. The FY-2000 *Congressional Presentation for Foreign Operations* listed the "continued participation of the Nigerian military in regional peacekeeping efforts" as the "key indicator of performance" of relevant security assistance programs.[56] Similarly, the FY-2003 *Congressional Budget Justification for Foreign Operations* (*CBJ*) validated the increase in security assistance to Nigeria as a means to "improve Nigerian crisis response peacekeeping capabilities" and to "reinforce a positive role in regional peacekeeping."[57] Thus, through the period of 2000 to 2003, there was a clear linkage between substantial US security assistance to Nigeria and the US expectation that Nigeria would assume a dominant role in subregional peace support efforts.

From Recipient to Surrogate

With the situation in Liberia deteriorating, ECOWAS leaders met in early July and announced that they were tentatively willing to provide 3,000 troops to a peace support mission. As a caveat, however, they requested that the United States take the lead and contribute 2,000 of its own forces to the operation. President Obasanjo explained, "It isn't Nigeria that set Liberia on fire, is it? Of course it is not. It is not the West Africans that set Liberia on fire. You know who did, and those who set Liberia on fire should also join in putting the fire out."[58] Where the United States saw the past ECOWAS intervention in Liberia as a positive sign of future willingness, the organization's members, particularly Nigeria, saw it as a negative experience not to be repeated. They had been there before,

and it had been protracted, expensive, and bloody. Driving the ECOWAS agenda, Nigerian leadership desired that the United States share the burden in 2003. This stemmed not only from a perception of US responsibility but also from a belief in US military effectiveness. The direct involvement of US combat troops would certainly guarantee rapid success.[59]

For the United States, this was not an expected or acceptable reaction from subregional actors. After toying with the idea of direct military intervention, the administration determined that it was, at most, willing to serve in a supporting role. In mid July, President Bush stated, "What I'm telling you is that we want to help ECOWAS. . . . I think everybody understands that any commitment we had would be limited in size and limited in tenure . . . our job would be to facilitate an ECOWAS presence."[60] Within US policy-making circles, there was significant frustration over Nigeria's hesitancy to respond, particularly given the extent of recent US security assistance.[61] Accordingly, the United States launched a heavy diplomatic effort in the subregion aimed primarily at Nigeria. The US-appointed UN special representative in Liberia, Jacques Klein, averred at a press briefing that "ECOWAS needed to move quickly" and, in general, he "attempted to bully ECOWAS into deploying a vanguard force of at least 1,000 troops immediately."[62] US Assistant Secretary of State for African Affairs Walter Kansteiner traveled to Africa to increase pressure on regional leaders.[63] Still, the Nigerian-dominated ECOWAS "seemed to be waiting for a signal from the United States that it was ready to help militarily, so there was something of a stalemate, everyone waiting for everyone else."[64]

The impasse began to dissolve toward the end of July. On 25 July, the United States announced it was deploying a naval amphibious group with 2,300 Marines from the Mediterranean to the coast of Liberia, with an arrival date of 2 August, and further pledged $10 million to support an ECOWAS mission.[65] Three days later, ECOWAS leaders formally committed to deploying forces to Liberia by 3 August. Nigeria was the first to agree to provide troops to the ECOWAS Mission in Liberia (ECOMIL), after which Ghana, Senegal, Mali, and Togo followed.[66] Once again, Nigeria would provide the bulk of military equipment and personnel. It is important to note that the United States remained vague concerning the mission of the inbound Marines. For the most part, it was a symbolic move, intended, in the words of a senior administration official, "to speed up action by the Economic Community of West African States."[67]

Ostensibly, this symbolic military support, combined with US funding and diplomatic pressure, provided the necessary push for the intervention. The vanguard of Nigerian forces began arriving in Liberia the first week of August, and ECOMIL soon reached its prescribed strength of 3,600.[68] Having been within helicopter range for a week, US ships moved within sight of the Liberian capital of Monrovia on 11 August. They dispatched 20 Marines ashore to serve as liaisons to ECOMIL, but the rest remained on board. According to a senior Pentagon official, this action served to "show support for African peacekeepers without committing more American ground troops to the mission."[69]

The ECOMIL operation continued until 1 October 2003, at which point most of its forces were "blue-hatted" and subsumed within a follow-on UN mission (UNMIL). Over the two months of its existence, ECOMIL was generally effective in securing and stabilizing Monrovia, overseeing the negotiated departure of Charles Taylor, and facilitating the flow of humanitarian aid. The US military, for its part, provided substantial logistical, intelligence, and communications support. US forces also conducted a robust information campaign, to include the widely broadcast "ECOMIL and You" radio program.[70] In assessing the contribution of the US military, one pundit suggests, "The real threat of American force, symbolized by the ships offshore, gave the West Africans important psychological support."[71] Eventually, the United States did land approximately 200 Marines in Monrovia to help secure the international airport and to provide a quick reaction force in support of the African peacekeepers.[72] This force, however, returned to the ships after 10 days. The only other visible signs of direct US military involvement were the periodic flights of US fighter aircraft and attack helicopters on "show of force" missions. The US amphibious group departed the area by 30 September, just prior to the dissolution of ECOMIL and transition to UNMIL.

Most US military and civilian leaders viewed the operation, "the first US military commitment to an African conflict since Somalia," as a success.[73] The United States had achieved its short-term military objectives in Liberia with a minimal commitment of troops and without suffering a single casualty.[74] According to one US military participant, "The operation clearly demonstrated that a relatively small forward US military presence . . . could enable a locally provided regional force to achieve tremendous results."[75] Although African troops carried out the mission, US policy makers were quick to take credit. In reference to US security

assistance programs, Assistant Secretary Kansteiner testified to Congress, "Quite frankly, without this US assistance, those intervention forces never would have been deployed to Liberia and never would have been able to be the peacekeepers that they, in fact, are."[76]

An Agency Perspective

Although largely successful, the US-backed ECOMIL intervention still raises a number of issues in terms of principal-agent relations. Evident from the start was a dissonance between US and Nigerian expectations. Nigerian leadership felt fully justified in requesting a substantial US military contribution as a condition for its own commitment. US policy makers, conversely, grew frustrated at Nigerian intransigence, arguing that the subregional power was failing to live up to its obligation. Once in Liberia, Nigerian military units, as well as those from other ECOMIL participants, performed fairly well.[77] Getting to that point, however, proved a difficult and contentious process involving heavy US diplomatic pressure, pledges of additional funding, and a symbolic deployment of US forces. From an agency perspective, the US deployment is especially problematic. Aside from a small minority, US leadership did not desire to commit its military to the situation yet felt compelled in response to international pressure and, more significantly, the insistence of subregional actors. There is some evidence here of what Mott conceptualizes as reverse leverage.[78] As one news report claimed, "The Nigerians know, however, that they have got the Americans over a barrel and will hold out for the best possible deal before going in."[79]

The surge in US security assistance to Nigeria from 2000 to 2003 was closely tied to the US government's expectation of Nigeria as a lead contributor to subregional and regional peace support operations. From the US point of view, Nigeria's hesitancy to respond to the Liberian crisis and attempt to pressure the United States into committing its own forces represented a degree of "shirking," defined within agency theory as not doing all that was contracted or not doing the task in a desirable way. Shirking often occurs when agent interests deviate from those of the principal. In the case of the Liberian crisis of 2003, however, US and Nigerian interests aligned relatively well. The diplomatic wrangling between the United States and Nigeria was not about the need for an intervention or whether Nigeria would play at least some part. The devil was in the details—the timing, conditions, roles, levels of involvement, and, of particular con-

cern, who would foot the bill. The gap between US expectation and Nigerian response derived primarily from risk implications and the existence of competing principals.

Beyond the factor of conflicting goals, shirking is also more likely in situations where there is significant outcome uncertainty and thus significant risk. It is therefore important to consider how the perceptions of risk vary within a principal-agent relationship. Nigeria's past involvement in Liberia was not necessarily an indicator of future risk tolerance. The earlier experience was not a pleasant or inexpensive one. The potential for a similar experience was enough to "trigger the risk implications of the theory" in a manner that the United States, perhaps, did not fully comprehend or appreciate.[80] Kathleen Eisenhardt discusses "the problem of risk sharing that arises when the principal and agent have different attitudes toward risk . . . the problem here is that the principal and the agent may prefer different actions because of different risk preferences."[81] From the Nigerian perspective, it was completely reasonable to prefer a substantial US military commitment as a means of risk mitigation.

Closely related to risk was the issue of competing principles. Interestingly, Nigerian lack of enthusiasm for the mission stemmed in part from the inculcation of democratic practices. In a democracy, the state military ultimately serves as an agent of the people. Where Nigerian dictators had been able to employ the military whenever and however they saw fit, the democratically elected leadership, accountable to Nigerian public opinion, found it increasingly difficult to justify and garner public support for the expenditure of troops and national treasure in external conflicts.[82]

This case highlights the key role of the dominant subregional actor. For the United States, it would have been meaningless to delegate to ECOWAS without Nigerian buy in. The bilateral relationship remained far more critical than any relationship the United States had with the broader subregional organization. As a senior Nigerian military officer recently explained, "If you want to work with ECOWAS, you can't go straight to ECOWAS . . . you need to come to us first."[83] As in previous operations, the ECOWAS framework was primarily useful in terms of legitimacy, necessary for both the internal and external audiences.

In the end, the United States achieved its strategic objectives in Liberia through the use of surrogate force. US security assistance played an important role in this success. The questions that linger pertain to the deployment of US troops, intended primarily to "speed up action" by ECOWAS.

This deployment had to be weighed against the genuine fear held by most US policy makers and senior defense officials of being drawn into a Liberian civil war. Admittedly, the symbolic US force remained small and generally confined to the safety of its ships, but the United States was playing a dangerous game, both with its troops and with its credibility. It was able to maintain its indirect support role, but one must ask what US forces would have done if the situation in Liberia had continued to deteriorate or if ECOMIL had been overwhelmed. The United States was fortunate that it never had to make this decision. As Deputy Assistant Secretary of Defense Theresa Whelan expressed to Congress, "The good news is they weren't needed."[84] While it is not especially useful to dwell on the hypothetical, the contention here is that the United States, while attempting to operate through surrogate force, found itself at risk of a level of military involvement neither intended nor wanted. It is such risk that the United States sought to avoid through its security assistance strategy. In order to mitigate the perceived risk implications of its surrogate and thus gain the benefits of employing surrogate force, the United States had to adjust its own perception of acceptable risk.

Case 2: Intervention of Ethiopia and the AU in Somalia, 2006–2008

Somalia remained a failed state a decade after the infamous US-led UN operation (1992–93), ungoverned and plagued by endemic warfare. In 2004, under the guidance of the subregional Intergovernmental Authority for Development (IGAD) and the UN, a group of Somali delegates congressed in Kenya and formed the Transitional Federal Government (TFG). This attempt to finally end the pattern of conflict and chaos, however, quickly foundered. The new president was a divisive choice; "his close links to Ethiopia, his staunch anti-Islamist positions and his heavy-handed tactics against political opponents in his own clan earned him a reputation as a leader who tended to polarize rather than unite Somalis."[85] From the start, this government possessed little power or legitimacy. According to Somalia expert Ken Menkhaus, "Placing [Abdullahi Yusuf Ahmed] and a very pro-Ethiopian, anti-Islamist government in power was a godsend for Mogadishu's struggling Islamist movement. . . . The threat of a Yusuf-led government was the ideal foil for hardline Islamists to mobilize their base of support."[86]

By mid 2005, the TFG remained isolated in the provisional capital of Baidoa, while the newly organized Supreme Council of Islamic Courts (CIC) had emerged as "the strongest political and militia force in Mogadishu."[87] In February 2006, with CIA backing, a group of nine clan militia leaders formed the Alliance for Restoration of Peace and Counter-Terrorism to counter the Islamists.[88] After a four-month battle, the CIC emerged victorious, absorbing most of the Alliance militias into its ranks. Having gained complete control in Mogadishu, it soon extended its rule over much of the country. CIC chairman Sheikh Sharif Ahmed vowed that his group would continue fighting until it controlled all of Somalia.[89]

The Impetus for US Involvement

For the US government, the triumph and subsequent rise to national power of the CIC "was the exact opposite result it had intended in encouraging the formation of the Alliance" and "an important setback in the US war on terrorism."[90] It feared the CIC would provide a safe haven and support for al-Qaeda terrorists along the lines of the Taliban in Afghanistan. DoD spokesperson Sean McCormack explained shortly after the Alliance defeat, "We do have real concerns about the presence of foreign terrorists in Somalia, and that informs an important aspect of our policy with regard to Somalia."[91] Similarly, Assistant Secretary of State for African Affairs, Dr. Jendayi Elizabeth Frazer, expressed displeasure that al-Qaeda was operating with "great comfort" in areas controlled by the CIC.[92] The United States noted particularly the sanctuary provided a small number of individuals linked to the 1998 bombings of US embassies in Kenya and Tanzania, as well as those responsible for the 2002 attacks against an Israeli resort and Israeli aircraft in Mombasa.[93] The implications of any US response toward the situation, however, extended beyond Somalia and the presence of a few key al-Qaeda operatives. Frazer testified to Congress, "Somalia's continued exploitation by terrorist elements threatens the stability of the entire Horn of Africa region. We will therefore take strong measures to deny terrorists safe haven in Somalia."[94] US policy makers were cognizant of the fact that "there are Islamic extremist elements in Uganda, Kenya, Tanzania, and Eritrea, all watching what is happening in Somalia and how the United States reacts."[95] Of even broader concern was the increasing presence of foreign jihadists "who want to turn Somalia into the third front of holy war, after Iraq and Afghanistan."[96]

In 2003, within the context of the Liberian crisis, the United States seriously considered a substantial troop commitment to Africa. Given the nature of the Somalia conflict as well as previous experience in the country, the United States had no such debate in 2006. Still, the situation in Somalia was of utmost concern, demanding a US response. Within the context of the global war on terrorism (GWOT), the United States could ill afford the emergence of another extremist Islamic state serving as a base for foreign jihadists and with explicit ties to al-Qaeda. Having failed to gain effective surrogates internal to Somalia and with its diplomatic efforts stalled, the United States looked to subregional and regional actors as potential suppliers of military force.

Potential Surrogates

After the CIA-backed operation backfired, the DoS reasserted control of Somalia policy. Assistant Secretary Frazer made the conflict a top priority and began working to build support for a plan to bolster the TFG with troops from other African nations. By 2006, the AU had some experience in the security realm, having deployed troops under regional auspices to Burundi (2003), Sudan (2004), and the Democratic Republic of Congo (2005). With the TFG in jeopardy, the United States sponsored and drafted a UN Security Council resolution calling for an AU mission to Somalia. The request was not for a peacekeeping mission but a "protection and training" mission.[97] Resolution 1725, adopted unanimously by the council on 6 December 2006, specifically tasked an African force to maintain and monitor security in Baidoa, to protect members of the TFG and key state infrastructure, and to train TFG military forces and thus enable the Somali government to provide for its own security.[98]

Following the framework prescribed within the 2002 *Protocol Relating to the Establishment of the Peace and Security Council of the African Union*, the mandate for an 8,000-strong intervention force was directed to the sub-regional IGAD. A key limitation to the proposed IGAD Mission in Somalia (IGASOM), however, was the caveat that no states bordering Somalia could participate.[99] This political necessity served to exclude Djibouti, Kenya, and, most importantly, Ethiopia. Of the three remaining IGAD members, only Uganda was a viable option to provide troops.[100] Sudan had its own internal issues to deal with and was also sympathetic to the CIC.[101] Eritrea was actively supporting the CIC and was more likely to play the role of spoiler. Uganda did step up and volunteered to participate.

Its proposed contribution of approximately 2,000 troops, however, would not have been adequate given the complexities and dangers associated with the mission. The CIC indicated that it would view any IGASOM deployment as a hostile foreign invasion and vowed to attack any external force.[102] With marginal backing and little chance of success, IGASOM failed to materialize.

Ethiopia, excluded from the AU mandate, was probably the only country in the entire region with the military capability and political will to lead a robust operation into Somalia to counter the CIC. In 2006, Ethiopia wielded sub-Saharan Africa's largest and most seasoned standing army.[103] That summer, Prime Minister Zenawi ostensibly asserted to US officials that Ethiopia could crush the CIC in one to two weeks.[104] Further, as a matter of precedent, Ethiopia had twice sent troops into Somalia to destroy terrorist training camps during the 1990s.[105] Most importantly, Ethiopia saw the rise of the CIC and potential elimination of the TFG as a serious threat to its own national interest. Zenawi's dislike of the CIC derived from a number of factors, to include the Islamists' call for jihad against Ethiopia, close links with Ethiopia's rival Eritrea, support of armed insurgencies within Ethiopia, and irredentist claims made on disputed territory.[106]

Security Assistance Relationships

The United States began providing security assistance directly to the AU in 2005. This included primarily international military education and training (IMET) funding to prepare individuals to staff AU headquarters and to manage peacekeeping and humanitarian operations.[107] The bulk of US military capacity-building efforts in Africa, however, remained bilateral. According to a US military liaison with the AU, this was partly because "it is easy, it is what ambassadors are comfortable with . . . it is harder to do anything multilateral." The officer also pointed out that the structure of the nascent AU security mechanism precluded extensive multilateral efforts. He explained, "We can't go faster than the Africans themselves."[108] For a number of reasons, the United States continued to focus its security assistance bilaterally with a small number of key strategic partners in the region. Similar to Nigeria in the period of 2000 to 2003, Ethiopia emerged as a key strategic partner and as the lead African recipient of US security assistance through the period of 2003 to 2006. In general,

the United States came to view Ethiopia as "the linchpin to stability in the Horn of Africa and the Global War on Terrorism."[109]

US security assistance to Ethiopia after the Cold War had remained both insignificant and sporadic until 2002. Of major impediment were the various sanctions related to Ethiopia's ongoing conflict with neighboring Eritrea. Even nonlethal ACRI training planned for Ethiopia in the second half of 1998 was cancelled because of cross-border hostilities.[110] On 12 December 2000, Ethiopia and Eritrea signed a formal cease-fire agreement. The concomitant repeal of the UN Security Council arms embargo opened the door for increased US support. According to the FY-2002 *CBJ*, the United States was "especially interested in renewing our military-to-military ties to Ethiopia" following the conflict.[111] To facilitate this renewal, the United States allocated $3.6 million in security assistance for 2002.[112] As rationale, the *CBJ* offered, "Within East Africa, Ethiopia has the potential to emerge as a major peacekeeping contributor." Further, it stated that the United States "will encourage Ethiopia to participate in regional peacekeeping initiatives and in the African Crisis Response Initiative."[113]

The following year, US security assistance to Ethiopia increased to $4.9 million in foreign military financing (FMF) and IMET.[114] Ethiopia also began participating in ACOTA in 2003 and thus received additional funds, equipment, and training through the peacekeeping operations (PKO) account. While continuing to highlight the potential role of the Ethiopian military in regional peacekeeping, the FY-2003 *CBJ* reflects a significant shift in emphasis to counterterrorism. For the first time, the annual document listed Ethiopia as "an African front-line state in the war on terrorism," and, consequently, specified the FMF "to provide Ethiopia with equipment to advance its counterterrorism abilities."[115] Further, the United States specifically targeted Ethiopia in the $100 million EACTI.[116] Interestingly, from the start, the United States viewed Ethiopia's counterterrorism contribution from at least a subregional perspective. In particular, it looked to Ethiopia to conduct "efforts to apprehend terrorists in Ethiopia *and beyond*" (emphasis added).[117] The FY-2003 *CBJ* explained further that Ethiopia had "in the past sent its troops into neighboring Somalia to destroy terrorist camps. Should a country in the region be found harboring or assisting terrorists, Ethiopia would become an important partner in the war on terrorism."[118]

The year 2004 saw little change in US security assistance to Ethiopia. In 2005, however, the funding nearly doubled, making Ethiopia the top recipient of US security assistance in Africa.[119] Where previous budget documents suggested merely that Ethiopia "has the potential to emerge" as a major peacekeeping contributor, the FY-2005 *CBJ* established that Ethiopia "is emerging" in such a role.[120] This recognition was, at least in part, a reflection of Ethiopia's contribution to the AU's first independent peacekeeping operation (Burundi, 2003).[121] Citing other progress, the document claimed, "Ethiopia has provided outstanding cooperation in the war on terrorism."[122] Although traditional security assistance to Ethiopia declined marginally in the 2006 budget, the United States more than made up for the drop with over $21 million in emergency GWOT funding.[123] The FY-2006 *CBJ* provides an important, albeit nuanced, indication of how the United States perceived the role of security assistance to Ethiopia. Expanding upon the previous capacity-building emphasis, the 2006 document states, "The US will use . . . military assistance funding to increase Ethiopia's capacity *and willingness* to participate in external military missions" (emphasis added).[124]

By 2006, the robust security assistance relationship with Ethiopia centered on the US perception of Ethiopia as a key contributor to subregional counterterrorism efforts. Again, US documents make reference to an expectation that Ethiopia would intervene, at least in some cases, against a neighboring country harboring or assisting terrorists. According to some analysts, by the summer of 2006, the United States began discussing with Ehiopia the possibility of such an intervention into Somalia.[125]

From Recipient to Surrogate

While working to garner support for an AU mission to Somalia, the US government also attempted to engage with moderates within the CIC. By mid December 2006, however, with the failure of IGASOM to materialize and CIC intransigence on the safe haven issue as a backdrop, the United States "ominously shifted tone on Somalia."[126] At a press conference on 14 December, Assistant Secretary Frazer denigrated the CIC as "extremists to the core" and as being "controlled by al-Qaeda."[127] Many observers perceived these statements as a precursor to an Ethiopian invasion. On 24 December, after months of military buildup, Ethiopia did invade, launching a large-scale offensive into Somalia. The result was a rout. The Ethiopian attack "produced not only a decisive victory in initial battles in

the open countryside but also an unexpected collapse of the UIC back in Mogadishu . . . there, hardliners were confronted with widespread defections by clan militias, businesspeople, and moderate Islamists."[128] Most of the remaining CIC (or UIC) leadership, as well a large number of foreign fighters, fled south toward the Kenyan border. Preceded and protected by the Ethiopian army, the TFG soon filled the void in Mogadishu.

The degree of US encouragement and support for the Ethiopian intervention remains an area of significant debate and contention. While Ethiopian leadership openly acknowledges US prompting, the US government has remained more tight-lipped. Still, a number of credible government sources have alluded to a significant US role. Referring to the operation, a senior US military officer in the subregion at the time claims, "It was absolutely encouraged by the United States. . . . The US certainly applied soft power behind the scenes."[129] A high-level DoS official working for Assistant Secretary Frazer contends unambiguously, "The US directly and indirectly supported the Ethiopian invasion of Somalia," and that this support was necessary because "the AU did not have the capacity."[130] A number of pundits point to US Central Command (CENTCOM) commander Gen John Abizaid's trip to Ethiopia shortly before the invasion, ostensibly a routine visit, as a strong indicator of prior coordination or as representing "the final handshake."[131] Former US ambassador to Ethiopia David Shinn contends, "At a minimum . . . the United States gave a green light to Ethiopia."[132]

The question of US prompting or consent prior to the invasion, while interesting, may be somewhat irrelevant. As Menkhaus suggests, "Ethiopia's offensive would likely have occurred with or without US tacit approval."[133] Nonetheless, the United States at least endorsed the intervention after the fact and then cooperated militarily with Ethiopian forces in Somalia, many of which the United States had trained and equipped through its security assistance programs.[134] The apparently successful use of US special operations forces, intelligence assets, and limited precision air strikes, combined with a large-scale intervention by a subregional power, was quickly dubbed "the Somali Model." According to one report, "Military operations in Somalia by American commandos, and the use of the Ethiopian Army as a surrogate force to root out operatives for al-Qaeda in the country, are a blueprint that Pentagon strategists say they hope to use more frequently in counterterrorism missions around the globe."[135]

Ethiopia's decision to withdraw its forces less than a month after the invasion, however, served to "cast some doubt on the viability of such a model."[136] Shortly after entering Somalia and demolishing the organized CIC, Ethiopian troops became the target of "a complex insurgency by a loose combination of Islamists, warlords, armed criminals, and clan-based militia."[137] Prime Minister Zenawi had no desire to wage a protracted and costly counterinsurgency campaign. Within a matter of weeks, he announced that Ethiopia had achieved its objectives and that it intended to redeploy its troops. Ostensibly, Ethiopia had sought "not to install a viable government, but to prevent Somalia's Islamists from trying to form one" and perhaps, as one polemicist suggests, "to win the favor of the United States for loyal service in the war on terror."[138] Ethiopia's "exit strategy" was the anticipated replacement by an AU force.[139] With the CIC no longer a substantial threat, such a force was, in theory, more viable than in early December 2006. Once again, though, it proved largely untenable in practice.

The TFG was dependent upon Ethiopian troops for regime survival. With Ethiopia threatening to depart, the United States and the AU, fearing a security vacuum, scrambled to assemble a regional force as replacement. Assistant Secretary Frazer cited the deployment of such a force as "a crucial component of our strategy in Somalia."[140] On 19 January 2006, the AU Peace and Security Council bypassed the subregional organization and established the AU Mission in Somalia (AMISOM). A month later, the UN Security Council passed the US-sponsored Resolution 1744, providing a mandate to AMISOM and thus overriding the precedent Resolution 1725 (December 2006). The new resolution authorized the deployment of AMISOM to provide support and protection for the TFG, facilitate the provision of humanitarian assistance, and create conditions conducive to long-term stabilization, reconstruction, and development.[141]

The response from AU members was underwhelming. While a few African countries pledged troops, most remained ambivalent at best. Top AU diplomats pleaded with member countries. Likewise, Frazer conducted "full court press" diplomacy to garner regional support.[142] In the end, these efforts were largely in vain. AMISOM deployed in March 2007 with a mere 1,700 Ugandan troops.[143] Only tiny Burundi later joined the mission. Interestingly, Uganda, had received substantial US security assistance, although not to the level of Ethiopia, since 2004.[144] Further, military units from both Uganda and Burundi received substantial US train-

ing, equipment, and logistical support specifically for AMISOM. Still, the total contribution of Uganda and Burundi, as could be expected, was well below the mandate requirement.[145] The force could do little more than safeguard key infrastructure such as the Mogadishu air and sea ports.[146]

US influence over Ethiopia may have been largely irrelevant prior to the 2006 offensive, but this was not the case as the operation dragged on. Faced with a tepid AU response, the United States pressured Ethiopia to remain in country.[147] Succumbing to US overtures, Zenawi kept his troops in Somalia for over two years, far longer than he wished.[148] Nonetheless, by late 2008, Zenawi finally became "fed up" with the lack of regional and international support as well as with the heavy economic cost, heavy casualties, and incessant appeals at home for a troop withdrawal.[149] In February 2009, the remaining Ethiopian soldiers departed Somalia, leaving behind a feeble AMISOM of approximately 3,400 Ugandans and Burundians.

An Agency Perspective

It is true, as one analyst suggests, that the United States "reaped some short-term counterterrorism benefits from its successful, if ephemeral, proxy incursion."[150] The operation prevented the consolidation of an extreme Islamist government and provided the United States better opportunities to target international terrorists operating within Somalia. Many questions persist, however, as to the broader implications of the episode. Given the ineffective subregional and regional responses, the United States found it necessary to rely upon Ethiopia unilaterally as its primary surrogate. While Ethiopia was the most willing and capable actor as well as the predominant recipient of US security assistance in the subregion, geopolitical dynamics made such reliance highly problematic. Not surprisingly, the Ethiopian intervention and subsequent occupation were particularly ill received and probably did more to inflame than to mitigate the violence endemic to Somalia.

In 2006, US and Ethiopian leadership perceived the CIC as a serious threat, and it is probable that the United States at least encouraged Ethiopia to intervene. There was probably little need for heavy diplomatic pressure; it was likely just a matter of giving the green light. In any case, the Ethiopians certainly did not appear to exhibit any shirking behavior in terms of the initial decision to invade, and the decision to depart in 2008 can hardly be considered shirking. The Ethiopians remained in Somalia

far longer than they had desired and far longer than should have been expected. As David Shinn argued to Congress, "Ethiopia appears from the beginning to have planned a brief campaign because of the high cost of the operation and the fact that a long Ethiopian presence in Somalia would further incite Somali nationalism against Ethiopia."[151]

Ethiopia did not display shirking behavior in terms of "not doing all that was contracted." Shirking, however, also encompasses "not doing the task in a desirable way." This was Ethiopia's primary shortcoming as a US surrogate. While Combined Joint Task Force Horn of Africa (CJTF-HOA) waged a hearts-and-minds campaign in the subregion, the Ethiopian army waged a brutal counterinsurgency campaign in the streets of Mogadishu where soft power held little sway. Not restrained by concerns of collateral damage and civilian casualties (unlike the United States in Iraq), the Ethiopians leveled entire city blocks. Further, the US surrogate accumulated a dubious human rights record. Amnesty International has presented credible evidence of extensive torture and deliberate killings of civilians by Ethiopian troops.[152] Whether well founded or not, there was little question within the subregion of US complicity. Already poor, the image and potential credibility of America declined even further. Ken Menkhaus contends, "There's a level of anti-Americanism in Somalia today like nothing I've seen over the past 20 years. Somalis are furious with us for backing the Ethiopian intervention and occupation, provoking this huge humanitarian crisis."[153]

Beyond shirking, another concern within this episode was the likelihood of opportunistic behavior by Ethiopia. Ethiopia's apparent enthusiasm for the initial invasion did not necessarily reflect a complete convergence of interests between the United States and its surrogate. For Ethiopia, Somalia was not just about Somalia. It was not even about the broader war on terrorism. Ethiopia and Eritrea, despite the 2000 cease-fire, continued to battle through Somali surrogates. The desire to gain the advantage in this proxy conflict was certainly at play in 2006. To the degree that it relied on US assistance and support in facilitating this separate agenda, Ethiopia exhibited opportunism, described within agency theory as taking advantage of the perquisites of the principal-agent relationship to achieve benefits unrelated to the relationship. Further, some analysts suggest that Ethiopia played the international terrorism card in the Horn of Africa to its own advantage. They argue that Ethiopia exaggerated the terrorist threat and linkages to al-Qaeda to gain additional US assistance against

local competitors. According to one expert, "The new game in Somalia is to call your enemy a terrorist in the hope that America will destroy him for you."[154] In a sense, Ethiopia may have tried to oversell its own value as an agent to the United States.

While numerous critics place responsibility upon Ethiopia and its sponsor (the United States) for Somalia's further descent into chaos, the broader African security community shares a portion of the blame. A significant consequence of the AU failing to fulfill its mandate in Somalia was the extended Ethiopian occupation. A key observation from this case is that the AU, as an institution, may be ambitious and well intentioned in exercising its regional security prerogative, but the enthusiasm does not extend necessarily to member states under no obligation to contribute troops or resources to any given mission. From an agency perspective, the failure of Ghana and Nigeria to respond is of particular interest. Both received substantial US security assistance funding in 2005 and 2006. Both, at the urging of the United States, pledged troops to AMISOM and in return were promised additional US training and equipment tailored specifically for the operation.[155] The United States also agreed to provide logistical support.[156] Still, despite significant US diplomatic pressure, neither country ever deployed its forces to Somalia, each offering a continuous litany of reasons for the delay. When asked to explain this lack of response despite previous pledges, a senior US military official in the region opined that Somalia "scared the . . . out of them" and that they had no direct interests related to the mission. In other words, "Why would Ghana care about Somalia?"[157]

Despite short-term gains, the efficacy of US efforts to achieve strategic objectives in Somalia through surrogate force remains questionable at best. The suboptimal outcome derived not only from US delegation to Ethiopia but also from delegation to the AU. In the aftermath, Somalia remained a violent and ungoverned sanctuary for terrorists, Islamic extremists, criminals, and even pirates. The credibility, image, and subregional hearts-and-minds campaign of the United States suffered. US support for a unilateral Ethiopian intervention also raised concerns throughout the rest of Africa. Shortly after the invasion, the United States announced the creation of AFRICOM. This unfortunate timing led to widespread suspicion in Africa concerning the role of the new command.[158] Finally, US relations with Ethiopia were strained. To some degree, the Ethiopians felt the United States failed to live up to its end of the contract. Ostensibly

acting on behalf of the United States, they expected an even greater level of US backing and grated at accusations of Ethiopian atrocities emanating from the US Congress. In the telling words of an Ethiopian government official, "We went in to do your bidding. You should have provided more support. You have flogged this horse long enough."[159]

Discussion and Conclusions

These two cases illustrate US attempts to translate donor-recipient relationships into effective sponsor-surrogate relationships as a means of shaping the African security environment and pursuing US objectives. While certainly limited in scope, these examples offer a few tentative conclusions as to the broader efficacy of such efforts.

Donor Expectations and Control Mechanisms

Aware of the sensitivities associated with "acting for," US officials are quick to point out that recipient governments in Africa retain sovereign decision-making authority over the employment of their own military forces. Nonetheless, the United States retains specific expectations tied to its security assistance programs and attempts to impart these as tacit obligations upon recipient governments. The surge in US security assistance to Nigeria from 2000 to 2003 stemmed from the US government's expectations of Nigeria as a lead contributor to subregional and regional peace support operations. From 2003 to 2006, the United States justified its substantial security assistance funding to Ethiopia in terms of Ethiopia's potential leadership role in both peace support and counterterrorism. Many other donor-recipient relationships throughout this general time frame, although lesser in scope, were based on similar US aims. It is not surprising that in both 2003 and 2006, the United States turned to its recipients when assessing the need to apply military force. In each case, it found it necessary to employ control mechanisms, with varying degrees of success, in attempting to align recipient behavior with donor preferences.

While screening serves as an indirect or passive control mechanism, it is a critical one nonetheless. Some agents are more likely to perform in a manner acceptable to the principal than others. The principal must determine desirable attributes and then be able to identify those attributes in potential agents. The latter is not always straightforward, as agents tend to hide information that would preclude the transfer of benefits.[160] All

states receiving US security assistance through programs such as ACRI and ACOTA must express a general interest and willingness to participate in external peace-support operations.[161] Some recipients, however, "gladly take the training" and never deploy.[162] Some, as perhaps was the case with Ethiopia, may try to exaggerate or inflate their own value as agents, thus distorting the screening process.

From 2000 to 2006, US security assistance strategy, with its concomitant screening mechanisms, was reflective of a broader "anchor state" approach to Africa. The 2002 *National Security Strategy* established that "countries with major impact on their neighborhood such as South Africa, Nigeria, Kenya, and Ethiopia are anchors for regional engagement and require focused attention."[163] In focusing security assistance efforts on Nigeria (2000–2003) and Ethiopia (2003–2006), the United States was seeking to establish principal-agent relationships with the dominant actors within the respective subregions. Nigeria and Ethiopia already possessed robust military capabilities—at least relative to the rest of Africa—and each had shown a past willingness to intervene militarily in neighboring countries, whether for peacekeeping or other purposes. These factors, ostensibly indicators that the United States would achieve "the most bang for its buck" or "the best return on its investment," served as strategic screening criteria.[164]

These case studies highlight the tension between strategic and what can be considered "statutory" screening criteria. US statutes, as codified primarily within the amended Foreign Assistance Act, prohibit security assistance for a number of reasons, including unaddressed human rights abuses or the presence of a government brought to power by military coup. These restrictions derive largely from US values and political sensitivities but are also important in that such recipients are ostensibly more likely to shirk in terms of "not doing the task in a desirable way." The United States reinstituted security assistance to Nigeria after the 1999 Nigerian democratic elections and then cut it again in late 2003 (reinstituted in 2005) due to implications of human rights abuses by the Nigerian military. With the substantial increases in security assistance to Ethiopia starting in 2002, critics argued that the United States was not holding the Ethiopians to the same standard. Many US policy makers, however, viewed Ethiopian support as critical to the GWOT and appeared willing to overlook certain indiscretions or legalistic restraints to achieve strategic ends. The resultant tension was evident in congressional debates. While it may be necessary at times to favor strategic over statutory criteria, such a compromise is not

without cost. Dissonance between donor rhetoric and practice, as well as the application of varying standards to different recipients, can skew recipient perceptions of donor expectations and preferences.

There was certainly strong justification for screening recipients in terms of the broader anchor-state strategy. Extant military capacity and geopolitical influence of a surrogate is potentially of great benefit to a sponsor. Nonetheless, relying mainly on subregional powers in Africa is not without its drawbacks. States such as Nigeria and Ethiopia are entwined intimately in subregional power politics. This is not to suggest a lack of involvement by lesser states, but dominant players are, anecdotally, more likely to have broader agendas and, consequently, additional motives that may be hidden from the sponsor. By aligning mainly with a subregional power, a sponsor may be drawn into subregional politics unwittingly, losing credibility as an unbiased external actor or "honest broker" in the resolution of African conflict.[165] Reliance on a few dominant states also increases the potential for reverse leverage within the donor-recipient relationship. There were hints of this in 2003 when the Nigerians knew they had "the Americans over a barrel."

The application of incentives and diplomatic pressure was evident in both case studies. The United States clearly utilized diplomatic pressure to shape recipient behavior in the case of Nigeria in 2003. The same was true in the case of Ethiopia, even if not for the initial invasion, at least for the continued occupation of Somalia. In trying to garner regional support for AMISOM, the United States looked specifically to and applied pressure on key recipients such as Uganda, Ghana, and Nigeria. The case of Uganda provides an example of the United States successfully incentivizing recipient behavior through the provision of additional assistance linked to a specific mission. Similar incentives, however, proved inadequate with Nigeria and Ghana in the context of AMISOM. While these all represent attempts by the donor to control recipient behavior, it remains difficult to assess the precise degree, nature, and effects of any of these efforts. This is not surprising. As Dunér contends, "When it comes to a proxy relation . . . both parties usually try to conceal the true nature of their relationship. . . . Few governments like to acknowledge that they have threatened or brought pressure to bear on another; even fewer like to admit that they have acted against their will."[166]

Agency Cost Calculus

A simplistic yet meaningful conclusion one can draw from the case studies is that the effectiveness of donor control mechanisms and, consequently, the viability of donor influence is highly dependent upon context. Three important contextual factors identified within agency theory and illustrated by the case studies include the level of congruence between donor and recipient interests, the relative perception of risk, and the existence of competing principal-agent relationships. It is the interplay between such contextual factors and efforts by the donor to control recipient behavior that dictates the agency costs associated with any given donor-recipient relationship.[167]

In the case of AMISOM as a whole, those outside the subregion had little direct interest in Somalia. Given the lack of perceived state interests and significant risk implications associated with the "less-than-ideal security situation," the paucity of regional enthusiasm should not have been surprising.[168] In many recipient states that declined to participate, internal domestic pressure competing with external US pressure proved to be significant. After Nigeria pledged troops to AMISOM, the internal domestic outcry against participation was intense, leading the government to reconsider. Malawi's defense minister "reportedly promised troops only to have the president rescind the announcement."[169] In such a context—with a lack of converging interests, significant risk implications, and competing (primarily internal) relationships—the amount of donor control required to effectively shape recipient behavior likely exceeds that actually provided by donor control mechanisms.

The United States had a strong donor-recipient relationship and alignment of interests with both Nigeria in 2003 and Ethiopia in 2006. The same was true with Uganda within the context of AMISOM. All three states responded as US surrogates. Nigeria appeared to possess a greater initial risk aversion, even going into a more benign environment. The United States was able to mitigate this primarily through a symbolic deployment of US forces. The key in this case was adjusting the level of shared risk within the relationship. As discussed above, the Nigerian government's perception of risk derived, in part, from democratic accountability. The governments of Ethiopia and Uganda, more questionable in terms of democratic practices, perhaps lacked similar concerns.[170] Although it is impossible to suggest any correlation here, this remains an interesting observation nonetheless. Nigeria was obviously less amenable

to intervening in Somalia. The risk was probably greater and, as discussed above, the convergence of interests no longer existed.

From the case studies, it is apparent that the United States takes two broad approaches to developing surrogate forces in Africa. The first derives from the perceived strategic potential of a key actor. It consists of a longer-term security assistance relationship not tied directly to any specific intervention. This was the approach taken with Nigeria from 2001 to 2003, Ethiopia from 2003 to 2006, and Uganda in the years leading up to its participation in AMISOM. The second can be characterized as a "fire brigade" approach. This is more ad hoc and involves a short-term use of security assistance to generate support for a specific intervention and preparing willing participants just prior to deployment. This was the case with Nigeria in 2000 (Operation Focus Relief) and Burundi in 2007–2008. When the need for intervention arises, the two approaches often become blurred. Uganda, already a significant recipient, was provided additional US training and equipment for participation in AMISOM.

Given the uncertainties tied to contextual factors in Africa and the limits of US control mechanisms, the latter approach may appear relatively attractive. Why invest long term without any guarantee of return? Why not just wait until the need arises and then tailor security assistance to provide only the willing actors with what is necessary for a specific intervention? This would ostensibly eliminate some of the uncertainty inherent in screening and mitigate agency loss from shirking behavior. The United States, in fact, has moved in this direction over the past few years. ACOTA, in particular, has been utilized repeatedly for such "just in time" security assistance.

Significant benefits remain associated with the longer-term strategic approach. There is necessarily a balance between the two, but US capacity-building efforts "in whole have been too schizophrenic . . . hindered by a failure to sustain efforts over time."[171] Liska speaks of consistency as a key to shaping recipient performance without having to resort to explicit sanctions. Eisenhardt proffers the value of the long-term relationship in terms of gaining a deeper understanding of agent interests and motivations.[172] Such understanding is vital. As Mott suggests, for security assistance to be effective, "a donor must fathom the recipient's polity, economy, and culture and cause the recipient to adopt desired policies, military strategies, or other behaviors."[173]

When donor and recipient interests do not completely align and risk implications are significant, the longer-term relationship may be an important determinant of recipient behavior. Ethiopia and Uganda, the two most willing contributors in the second case study, each had its own national objectives related to Somalia. Nonetheless, the performance of each exceeded that dictated purely by immediate state interests. Each faced significant risks and suffered numerous casualties, yet remained involved militarily far longer than desired or originally intended (Ethiopia wanted to depart after a few weeks; Uganda expected to leave within six months). The political leadership of both Ethiopia and Uganda, although perhaps not initially as sensitive as that of Nigeria, eventually felt the pressure of internal dissent. The Ugandan government, in particular, faced an increasingly angry public that complained about the siphoning of military resources from the country's own internal struggle with the Lord's Resistance Army.[174] Still, each state responded to US appeals, in part because they valued and sought to foster a broader security relationship with the United States. Critics of Ethiopian and Ugandan military actions in Somalia denigrate these states for intervening to gain favor with the United States. From the US perspective, having recipients that substantially value and are willing to accept significant risk to maintain a longer-term relationship is not necessarily a bad thing.

At the core of the agency cost calculus is ultimately the perceived value of employing surrogate force versus committing one's own forces. The key benefit of developing and then operating through a surrogate is ostensibly the avoidance of sponsor military involvement. This obviation, however, is rarely complete, and the need to supplement the surrogate with the sponsor's own military forces must be factored into the equation. Such a commitment may be necessary in terms of a political, operational, psychological, or deterrent effect. For the sponsor, limited military participation may also be useful in terms of monitoring surrogate performance.

The United States found it necessary, or at least of sufficient utility, to supplement its surrogates militarily in both case studies. In Liberia, the impetus and impact were largely political and psychological. US military liaisons attached to ECOMIL units also provided, among other benefits, a monitoring function. The most significant cost of the US military deployment was an increased risk of more extensive military involvement. In Somalia, the impetus can best be categorized as operational or in terms of enhancing military effectiveness of the surrogate. This was particularly

true regarding the use of US military assets for intelligence sharing and limited air strikes. Associated costs stemmed from the damage to the US image and credibility within the region and beyond from being perceived as inextricably linked to the unilateral Ethiopian invasion. Overall, the role of the sponsor's own military forces will vary greatly, but in most situations where the sponsor's interests truly are at stake, there will be a role. The sponsor must be realistic in addressing this facet of employing surrogate force.

Final Thoughts and Recommendations

Revisiting the Linkage between Security Assistance and Surrogate Force

This article attempts to address the question Is security assistance to Africa, as prescribed by current US policy, an effective hedge against more direct US military involvement in the region? It does so by considering the linkage between security assistance and surrogate force, a surrogate force being defined as an organization that serves the needs or interests of a secondary actor, the sponsor, by employing military power in place of the sponsor's own forces.

One should not take from this discussion that Africa's problems or threats to US strategic interests in Africa are best dealt with through military means. In most cases, military force, even if employed by a surrogate, is not the answer but sometimes it is. Given the nature of the African security environment, it is sometimes impossible to pursue broader economic, political, and humanitarian aims without a concomitant threat or application of arms. In discussing US security assistance efforts in 2001, Deputy Assistant Secretary of State for African Affairs William Bellamy noted, "None of the Administration's priorities in Africa can be realized in the presence of deadly conflict. We must help to stop the wars in Africa."[175]

Within Africa, creating surrogates involves the use of security assistance to develop state military forces that are both capable and willing to intervene in regional contingencies in which the United States perceives a national stake yet is hesitant to commit its own troops. Security assistance provides the basis for and shapes the sponsor-surrogate relationship. To be of value to the United States, the surrogate must not only act when required but must also do "the task in a desirable way." This may not always, but will often, require a degree of donor control over recipient behavior. Addressing security assistance from a mind-set of surrogate force devel-

opment as opposed to partner capacity building highlights the need for donor control associated with donor material support.

It is a serious mistake to assume that the capacity developed through US security assistance programs in Africa will necessarily be utilized in a manner that best supports US strategic goals. In other words, we cannot underestimate the need for donor control. Conversely, it is also wrong to overestimate the potential for US control over recipient behavior, despite the robust application of screening, monitoring, and contracting mechanisms. An important, albeit basic, conclusion derived from this analysis is that within the context of security assistance and surrogate force in Africa, agency is rarely if ever perfect. The recipient will always perform in a manner that is suboptimal, at least to some degree, from the perspective of the donor. Even in the best of situations, the donor and recipient will not have complete identity of interests or matching perceptions of acceptable risk. The donor-recipient relationship does not occur in a vacuum. It will always be subject to competing relationships. Understanding these dynamics, the strategist should be able to better contemplate and weigh agency costs associated with the implementation of US security assistance strategy in Africa. Referring to such costs, Susan Shapiro explains that "the trick, in structuring a principal-agent relationship, is to minimize them."[176]

The following tentative recommendations are derived from the above analysis:

1. Despite the growing rhetoric of pan-Africanism and preference within Africa to operate through a regional security organization, the United States should maintain the focus of its security assistance programs at the bilateral level. It should attempt to align its efforts with the development of the ASF and support, through "creative" assistance, the regional and subregional mechanisms but not at the expense of strong bilateral donor-recipient relationships.

2. The United States should reconsider its predominant focus on anchor states. In terms of screening, the United States seems overeager to seek out the most powerful and influential states in the region. These states, however, are not necessarily the best surrogates in terms of willingness or appropriateness. Reliance on a few dominant states increases the potential for reverse leverage within a donor-recipient relationship. Still, it is unrealistic to bypass the subregional powers. The aim, instead, should be to seek greater balance and not overlook the Burundis of the region.

3. The United States must remain wary of disregarding surrogate shortcomings (e.g., questionable democratic practices, poor human rights records, and complicity in ongoing conflicts) out of perceived strategic necessity. Looking the other way on such issues may garner short-term gains but could hurt US security assistance efforts in the long term by skewing recipient perceptions of donor expectations. Further, the United States must be concerned not only that the surrogate performs the desired task but also that it performs the task in a desirable way. A military with a reputation of human rights abuses or dubious civilian control at home is, anecdotally, more apt to tarnish the sponsor's reputation when "acting for" in an external conflict.

4. The United States should weigh carefully the trend toward the "fire brigade" model of developing surrogates through security assistance. This may be adequate and necessary in some situations, but the long-term donor-recipient relationship remains important. When donor and recipient interests do not completely align and risk implications for the recipient are significant, the future value of such relationships is a key source of donor influence over recipient behavior.

5. The United States should assess more realistically and more creatively the potential utilization of its own military forces in the region. Announcing to the world, even if in hyperbole, that AFRICOM will be deemed a success if it "keeps American troops out of Africa for the next 50 years" is not particularly sound. Restraint in military affairs is commendable and desirable. Unreasoned restraint, however, is problematic, especially when national interests are at stake. Liberia in 2003 was nothing like Somalia in 1993, yet the specter of Somalia weighed heavily, probably too heavily, in US decision making. This is not a call for the United States to become embroiled in African conflicts, but if the United States expects African surrogates to accept significant risks, it may need to reconsider its own aversion to military involvement in the region.

6. Finally, the United States should exorcise "African solutions to African problems" from its official lexicon. The Clinton administration formally adopted the phrase in the mid 1990s as the basis for ACRI and subsequent security assistance programs.[177] The phrase has persisted within and has shaped US security policy in Africa ever since. Government rhetoric linked to the recent standup of AFRICOM reflects further promulgation. The concept, however, is no longer appropriate or particularly useful. Given the increasing perception of US strategic interests in Africa, many

African problems are also now US problems. Moreover, the United States cannot assume purely African solutions are adequate to protect and further US interests. Although just a phrase, the concomitant mind-set obviates sophisticated analysis connecting US security assistance to its strategic interests. It glosses over the role of US influence in shaping the behavior of the African states that receive and benefit from US security assistance. It wrongly assumes capacity building is enough. In sum, it misses the critical linkage between security assistance and surrogate force.

Through its various security assistance programs, the United States now seeks to build both the capability and willingness of African states to employ military force throughout the region in a manner that supports US strategic interests and precludes the requirement for direct US military intervention. The United States, in effect, is seeking to develop surrogates. Hopefully, this article is of modest value to the strategists involved in the process. It certainly does not provide a clear road map for success or unambiguous policy recommendations. That was not the intent nor would it have been entirely practical, given the nature of security assistance and the complexities of the African security environment. Recognizing the challenges of crafting a strategy for security assistance within any region, Hans Morgenthau contends that "When all the available facts have been ascertained, duly analyzed, and conclusions drawn from them, the final judgments and decisions can be derived only from subtle and sophisticated hunches. The best the formulator and executor . . . can do is to maximize the chances that his hunches turn out to be right."[178] If AFRICOM hopes to utilize security assistance as an effective hedge against more-direct US military involvement and still pursue effectively US interests within the region, these hunches need to be pretty good. SSQ

Notes

1. The Congressional Research Service (CRS) cites "Africa's role in the Global War on Terror and potential threats posed by uncontrolled spaces; the growing importance of Africa's natural resources, particularly energy resources; and ongoing concern for Africa's many humanitarian crises, armed conflicts, and more general challenges, such as the devastating effect of HIV/AIDS" as driving the creation of AFRICOM. See Lauren Ploch, *Africa Command: US Strategic Interests and the Role of United States Military in Africa* (Washington, DC: CRS, August 2008), ii.
2. Comments by Principal Deputy Undersecretary of Defense Ryan Henry, 23 May 2007, quoted in Ploch, *Africa Command*, 7.
3. Ploch, *Africa Command*, 20, 27.
4. Unattributed interview with US military advisor to the African Union, April 2009.
5. William H. Mott IV, *United States Military Assistance: An Empirical Perspective* (Westport, CT: Greenwood Press, 2002), 4–5. For the purposes of this article, the terms *military assistance* and *security assistance* are treated interchangeably.

6. Defense Institute of Security Assistance Management, *The Management of Security Assistance* (June 2001), 45.

7. Former Assistant Secretary of State for African Affairs Herman Cohen defines proxy war as "internal conflict that has been orchestrated and supported almost entirely from the outside." See Herman J. Cohen, "US-Africa Policy as Conflict Management," *SAIS Review* 21, no. 1 (Winter–Spring 2001): 241–42.

8. For example, see Björn Hallberg, "The US proxy war in East Africa," *Silent Nation*, 28 December 2006, http://silent-nation.com/2006/12/28/the-us-proxy-war-in-east-africa.

9. Alvin Z. Rubenstein, *Moscow's Third-World Strategy* (Princeton, NJ: Princeton University Press, 1988), 168.

10. Some commonly cited cases include reliance on the Hmong tribesmen in Laos, the South Vietnamese in Indochina, the Northern Alliance against the Taliban in Afghanistan, the Kosovo Liberation Army in Kosovo, the Contras in Nicaragua, and the National Union for the Total Independence of Angola (UNITA) in Angola.

11. DoD, Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, October 2008, http://www.dtic.mil/doctrine/jpreferencepubs.htm.

12. Rubenstein, *Moscow's Third-World Strategy*, 170.

13. George Liska, *The New Statecraft: Foreign Aid in American Foreign Policy* (Chicago: University of Chicago Press, 1960), 96.

14. Ibid., 112–13.

15. According to Duncan Clarke et al., security assistance serves to promote regional stability, aid deterrence, help friendly countries defend themselves, advance US economic interests, maintain alliances, secure access to facilities and resources, gain political influence, and further understanding of American values and institutions. See Duncan L. Clarke, Jason D. Ellis, and Daniel B. O'Connor, *Send Guns and Money: Security Assistance and US Foreign Policy* (Westport, CT: Praeger, 1997), 2.

16. House, *US Security Assistance and Arms Transfer Policies for the 1980s: Hearings before the Committee on Foreign Affairs*, 97th Cong., 1st sess., 1981, 154.

17. House, *Foreign Economic and Military Assistance: Hearings before the Committee on Foreign Affairs*, 99th Cong., 1st sess., 1985, 129.

18. Ibid., 133.

19. House, *US Security Assistance and Arms Transfer Policies for the 1980s: Hearings before the Subcommittee on International Security and Scientific Affairs of the Committee on Foreign Affairs*, 97th Cong., 1st sess., 1981, 91.

20. House, *Building the Capacity of Foreign Military Forces: Hearings before the Committee on Armed Services*, 109th Cong., 2nd sess., 2006, 4.

21. Bertil Dunér, "Proxy Intervention in Civil Wars," *Journal of Peace Research* 18, no. 4 (1981): 353–61.

22. Ibid., 357–58.

23. Mott, *United States Military Assistance*, 77, 24.

24. Ibid., 10.

25. William H. Lewis, "Political Influence: The Diminished Capacity," in *Arms Transfers in the Modern World*, eds. Stephanie G. Neuman and Robert E. Harkavy (New York: Praeger, 1979), 196.

26. Dunér, "Proxy Intervention in Civil Wars," 358.

27. Susan P. Shapiro, "Agency Theory," *Annual Review of Sociology* 31 (2005): 263–84.

28. To denote the actors within a security assistance relationship, I utilize the terms *donor* and *recipient*. The sponsor-surrogate relationship necessarily incorporates a donor-recipient relationship in that the sponsor provides some form of material support. The sponsor is distinguished from the donor, however, by the additional efforts to exert influence over the recipient in an effort to utilize the recipient's military forces for donor purposes.

29. Nicole Itano, *Liberating Liberia: Charles Taylor and the Rebels Who Unseated Him*, Institute for Security Studies (ISS) Occasional Paper no. 82 (Pretoria, South Africa: ISS, November 2003).

30. Somini Sengupta, "UN Leader Calls for Peacekeeping Force in Liberia, Possibly Led by US," *New York Times*, 29 June 2003, http://query.nytimes.com/gst/fullpage.html.

31. House, *US Policy toward Liberia: Hearing before the Subcommittee on Africa of the Committee on International Relations*, 108th Cong., 1st sess., 2003, 45.

32. Senate, *The Gulf of Guinea and US Strategic Energy Policy: Hearing before the Subcommittee on International Economic Policy, Export, and Trade Promotion of the Committee on Foreign Relations*, 108th Cong., 2nd sess., 2004, 1.

33. Colin Powell, quoted in Kirk Semple, "Bush Orders US Troops to Position off Liberian Coast," *New York Times*, 25 July 2003, http://www.nytimes.com/2003/07/25/international/africa/25WIRE-Liberia.html.

34. Richard W. Stevenson, "Bush Team Says It's Weighing Intervention in Liberia's Torment," *New York Times*, 2 July 2003.

35. Reed Kramer, "Bush Makes Symbolic Shift on Liberia, but Dying Continues," 28 July 2003, reposted from *allAfrica.com*, http://www.africa.upenn.edu/Urgent_Action/apic-72903.html.

36. Christopher Marquis and Thom Shanker, "Pentagon Leaders Warn of Dangers for US in Liberia," *New York Times*, 25 July 2003, http://query.nytimes.com/gst/fullpage.html.

37. Richard W. Stevenson, "Bush Seems to Favor Sending a Modest Force to Liberia," *New York Times*, 15 July 2003, http://query.nytimes.com/gst/fullpage.html.

38. Stevenson, "Bush Team Says It's Weighing Intervention."

39. Eric Scmitt, "Pentagon to Assess Military Needs in Liberia," *New York Times*, 5 July 2003, http://www.nytimes.com/2003/07/05/international/africa/05MILI.html.

40. Stevenson, "Bush Seems to Favor Sending a Modest Force."

41. Senate, *The Nigerian Transition and the Future of US Policy: Hearings before the Committee on Foreign Relations*, 106th Cong., 1st sess., 1999, 25.

42. Ibid., 15.

43. Eric G. Berman and Katie E. Sams, *African Peacekeepers: Partners or Proxies*, Pearson Papers no. 3 (Clemensport, Nova Scotia: Canadian Peacekeeping Press, 1998), 19. ECOMOG, or the ECOWAS Monitoring Group, was the name applied to the ECOWAS military force in the 1990s.

44. Adekeye Adbajo, "Mad Dogs and Glory: Nigeria's Interventions in Liberia and Sierra Leone," in *Gulliver's Troubles: Nigeria's Foreign Policy after the Cold War*, eds. Adekeye Adbajo and Abdul Raufu Mustapha (Scottsville, South Africa: University of KwaZulu-Natal Press, 2008), 198.

45. Testimony of William Bellamy, in House, *African Crisis Response Initiative, A Security Building Block: Hearing before the Subcommittee on Africa of the Committee on International Relations*, 107th Cong., 1st sess., 2001, 23.

46. Department of State (hereafter: DoS), "African Crisis Response Initiative" (on-the-record briefing, Washington, DC, 28 July 1997).

47. Senate, *Nigerian Transition and the Future of US Policy*, 1, 2.

48. Ibid., 7.

49. Ibid., 15.

50. Correspondence with Victor Nelson, former US defense attaché to Nigeria, March 2009.

51. Institute for National Strategic Studies, "Liberia—from Intervention to Stabilization," INSS Roundtable Series on Post-Conflict Stabilization and Crisis Management (summary of roundtable discussions, National Defense University, Washington, DC, 5 March 2004).

52. Correspondence with Michael Bittrick, former US military advisor to DoS, Bureau of African Affairs, March 2009.

53. Senate, *Weak States in Africa: US Policy in Liberia: Hearings before the Subcommittee on African Affairs of the Committee on Foreign Relations*, 107th Cong., 2nd sess., 2002, 28.

54. Testimony of Bellamy, 25.

55. US Agency for International Development (USAID), "U.S. Economic and Military Assistance to the World," US Overseas Loans and Grants, http://qesdb.usaid.gov/gbk.

56. DoS, *Congressional Presentation for Foreign Operations, Fiscal Year 2000* (Washington, DC: Bureau of Resource Management, 1999).

57. DoS, *Congressional Budget Justification for Foreign Operations, Fiscal Year 2003* (Washington, DC: Bureau of Resource Management, 2002).

58. BBC News, "Transcript of Interview with President of Nigeria." This comment was primarily in reference to the United States and its Cold War policy in Liberia.

59. Correspondence with Victor Nelson.

60. Stevenson, "Bush Seems to Favor Sending a Modest Force."

61. Reed Kramer, "US-Africa Ties, Boosted by Money for Liberia, Face New Complications over Nigeria Sanctions," 18 November 2003, *allAfrica.com*, http://allafrica.com/stories/200311180059.html.

62. Chris Talbot, "Liberian War Restarts," *World Socialist Web Site*, http://www.wsws.org/articles/2003/jul2003/libe-j21.shtml.

63. Carolyn Cole and Maggie Farley, "Liberia Peacekeeping Plan Falters," *Los Angeles Times*, 30 July 2003, http://articles.latimes.com/2003/jul/30/world/fg-liberia130.

64. Eric Scmitt, "President Orders Troop Deployment to Liberian Coast," *New York Times*, 26 July 2003, http://query.nytimes.com/gst/fullpage.html.

65. Ibid.

66. Maggie Farley, "West African States Approve Sending Peacekeepers to Liberia," *Los Angeles Times*, 1 August 2003, http://articles.latimes.com/2003/aug/01/world/fg-liberia1.

67. Scmitt, "President Orders Troop Deployment to Liberian Coast."

68. House, *US Policy toward Liberia*, 22.

69. Thom Shanker, "US Aims to Back Nigerians, Without Sending in More Marines," *New York Times*, 12 August 2003, http://www.nytimes.com/2003/08/12/international/africa/12MILI.html.

70. Blair A. Ross Jr., "The US Joint Task Force Experience in Liberia," *Military Review*, May–June 2005, 66.

71. Itano, "Liberating Liberia."

72. Tim Weiner, "200 US Marines Land in Liberia to Aid African Force," *New York Times*, 15 August 2003, http://query.nytimes.com/gst/fullpage.html.

73. House, *US Policy toward Liberia*, 9.

74. As one analyst points out, several Marines contracted malaria, and some later died from the illness. Correspondence with Stephen Burgess, Air War College, March–April 2009.

75. Ross, "US Joint Task Force Experience in Liberia," 67.

76. House, *US Policy toward Liberia*, 22.

77. See Ross, "US Joint Task Force Experience in Liberia," 60–67.

78. See Mott, *United States Military Assistance*.

79. Jonathon Clayton, "Liberia Q&A: Why United States is not Sending Troops," *TimesOnline*, 30 July 2003, http://www.timesonline.co.uk/tol/tools_and_services/specials/article853580.ece.

80. Kathleen M. Eisenhardt, "Agency Theory: An Assessment and Review," *Academy of Management Review* 14, no. 1 (January 1989): 71.

81. Ibid., 58.

82. Unattributed interview with Nigerian military officer, February 2009.

83. Ibid.

84. House, *US Policy toward Liberia*, 45.

85. Ken Menkhaus, "The Crisis in Somalia: Tragedy in Five Acts," *African Affairs* 106, no. 204 (2007): 357–90.

86. Ibid., 364–65.

87. Ibid., 365. The CIC has also been known as the Union of Islamic Courts (UIC). See Testimony of Jendayi E. Frazer in Senate, *Exploring a Comprehensive Stabilization, Reconstruction, and Counter-terrorism Strategy for Somalia*. For consistency, this article utilizes CIC throughout.

88. Mark Mazzetti, "US Signals Backing for Ethiopian Incursion into Somalia," *New York Times*, 27 December 2006, http://www.nytimes.com/2006/12/27/world/africa/27africa.html. Also, see Menkhaus, "Crisis in Somalia," 368–89.

89. Chris Tomlinson, "Somalia's Islamic Extremists Set US Back," *Washington Post*, 6 June 2006, http://www.washingtonpost.com/wp-dyn/content/article/2006/06/06/AR200606060777.

90. Menkhaus, "Crisis in Somalia," 369; and Tomlinson, "Somalia's Islamic Extremists Set US Back."

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158. Correspondence with Stephen Burgess.

159. As relayed by a US military liaison in Ethiopia, unattributed interview, April 2009.

160. See Shapiro, "Agency Theory," 264.

161. Interview with DoS official, Bureau of African Affairs, April 2009.

162. Interview with US military advisor to the AU, April 2009.

163. *National Security Strategy of the United States* (Washington, DC: The White House, September 2002), 11.

164. Interview with DoS official, Bureau of African Affairs, April 2009.

165. For a similar argument, see Senate, *US Security Issues in Africa: Hearing before the Subcommittee on African Affairs of the Committee on Foreign Relations*, 102nd Cong., 2nd sess., 1992, 30.

166. Dunér, "Proxy Intervention in Civil Wars," 359.

167. For discussion of the concept of agency costs, see Shapiro, "Agency Theory," 265.

168. Ibid., 28.

169. Testimony of David Shin (former US ambassador to Ethiopia), in Senate, *Exploring a Comprehensive Stabilization, Reconstruction, and Counter-terrorism Strategy for Somalia*.

170. The governments of Ethiopia and Uganda incorporate democratic mechanisms, but political leadership during this period either prevented or repressed opposition political parties. See http://www.freedomhouse.org for democratic rankings.

171. Interview with US military liaison in Africa, March 2009.

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173. Mott, *Military Assistance*, 17.

174. Andrew McGregor, "Into the Somali Void: Somalia's Islamists Target Uganda's Peacekeepers," *Perspectives on Terrorism* 1, no. 3 (May–June 2007).

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176. Shapiro, "Agency Theory," 265.

177. Madeleine K. Albright, secretary of state, "US Policy toward Africa" (address, George Mason University, Fairfax, VA, 19 March 1998).

178. Hans Morgenthau, "A Political Theory of Foreign Aid," *American Political Science Review* 56, no. 2 (June 1962), 301–9. Morgenthau's statement is in reference to foreign aid, of which he considers "military foreign aid" to be one element.